



Customer shopping Behavior Analysis

Uncovering insights from 3,900 purchases to guide strategic business decisions through data-driven analysis of spending patterns, customer segments, and product preferences.

Foundation: 3,900 Transactions

3.9K

Total Purchases

Comprehensive transaction dataset

18

Data Features

Rich customer and purchase attributes

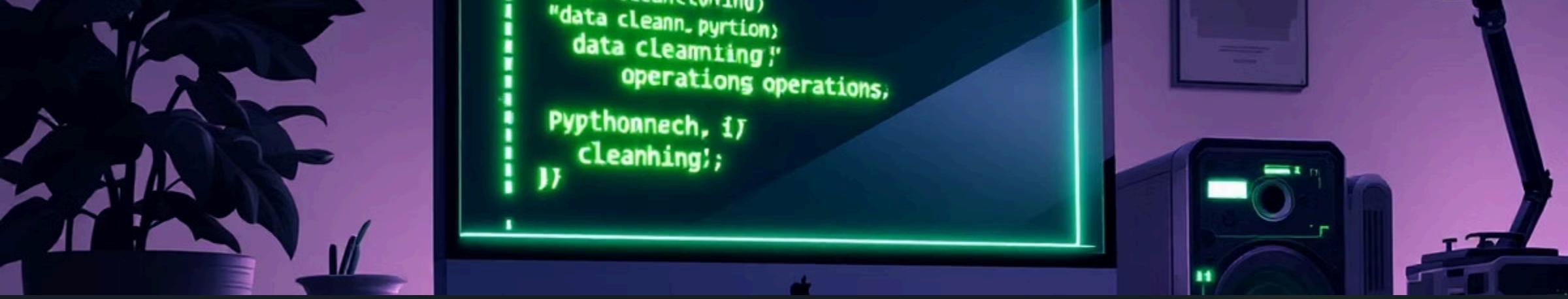
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Locations

Geographic diversity across regions

Key Data Points

- Customer demographics: Age, Gender, Location, Subscription Status
- Purchase details: Item, Category, Amount, Season, Size, Color
- Shopping behavior: Discounts, Promo Codes, Previous Purchases, Review Ratings
- Missing data: Only 37 values in Review Rating column



Python Analysis

Data Preparation & Cleaning

01

Data Loading & Exploration

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

02

Missing Data Handling

Imputed 37 missing Review Rating values using median rating per product category

03

Feature Engineering

Created age_group bins and purchase_frequency_days columns for deeper analysis

04

Database Integration

Connected to PostgreSQL and loaded cleaned data for SQL business analysis

Revenue Analysis by Gender

Gender

Male

Female



0 20k 40k 60k 80k 100k 120k 140k 160k

Revenue (\$)

Key Finding

Male customers generate **2.1x more revenue** than female customers, representing 68% of total revenue.

This significant gap suggests opportunities for targeted marketing strategies to balance customer acquisition.

Product Performance Insights



Top Rated: Gloves

Highest average rating at 3.86 stars, leading customer satisfaction

Runner-Up: Sandals

Strong performance with 3.84 average rating

Third Place: Boots

Consistent quality at 3.82 average rating

Products with highest review ratings show consistent quality and customer satisfaction, making them ideal candidates for promotional campaigns.

Shipping Type Impact

Average Purchase by Shipping

Express

\$60.48

Premium shipping choice

Standard

\$58.46

Most common option



Express shipping customers spend 3.5% more on average, indicating higher-value customer segment willing to pay for convenience.

Subscription Status Comparison



Subscribers (27%)

1,053 customers with \$59.49
average spend generating **\$62,645**
total revenue

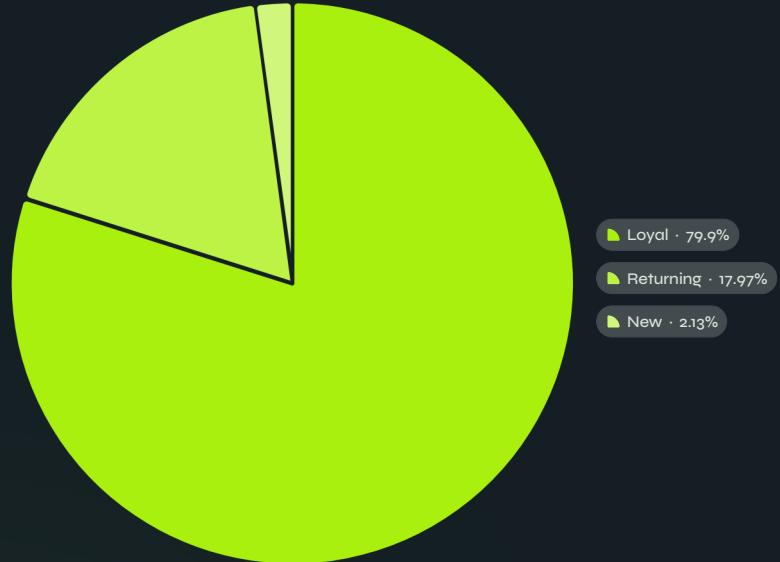


Non-Subscribers (73%)

2,847 customers with \$59.87
average spend generating **\$170,436**
total revenue

- Despite similar average spending, non-subscribers represent the majority of revenue due to volume. Converting more customers to subscriptions could stabilize revenue streams.

Customer Loyalty Breakdown



Segment Insights

Strong loyal customer base indicates effective retention, but low new customer rate suggests need for acquisition focus.

Loyal (80%)

Core customer base with repeat purchases

Returning (18%)

Growth opportunity segment

New (2%)

Fresh acquisition pipeline



↗ POWER BI DASHBOARD

Interactive Visual Analytics



3.9K
Custom
ers

Total customer
base analyzed



\$59.76
Avg
Purchas
e

Consistent
spending pattern



3.75 Avg
Rating

Strong customer
satisfaction

Power BI dashboard provides real-time insights into subscription status, revenue by category, sales distribution, and age group performance with interactive filtering capabilities.

Action Plan for Growth



Boost Subscriptions

Promote exclusive benefits to convert the 73% non-subscriber base



Loyalty Programs

Reward repeat buyers to strengthen the 80% loyal segment



Targeted Marketing

Focus on high-revenue age groups and express-shipping users

Additional Priorities

- Review discount policy to balance sales growth with margin control
- Highlight top-rated products (Gloves, Sandals, Boots) in campaigns

