



Customer Shopping Behavior Analysis

Uncovering insights from transactional data to guide strategic business decisions.

Project Overview



Transactional Data

3,900 purchases analyzed.



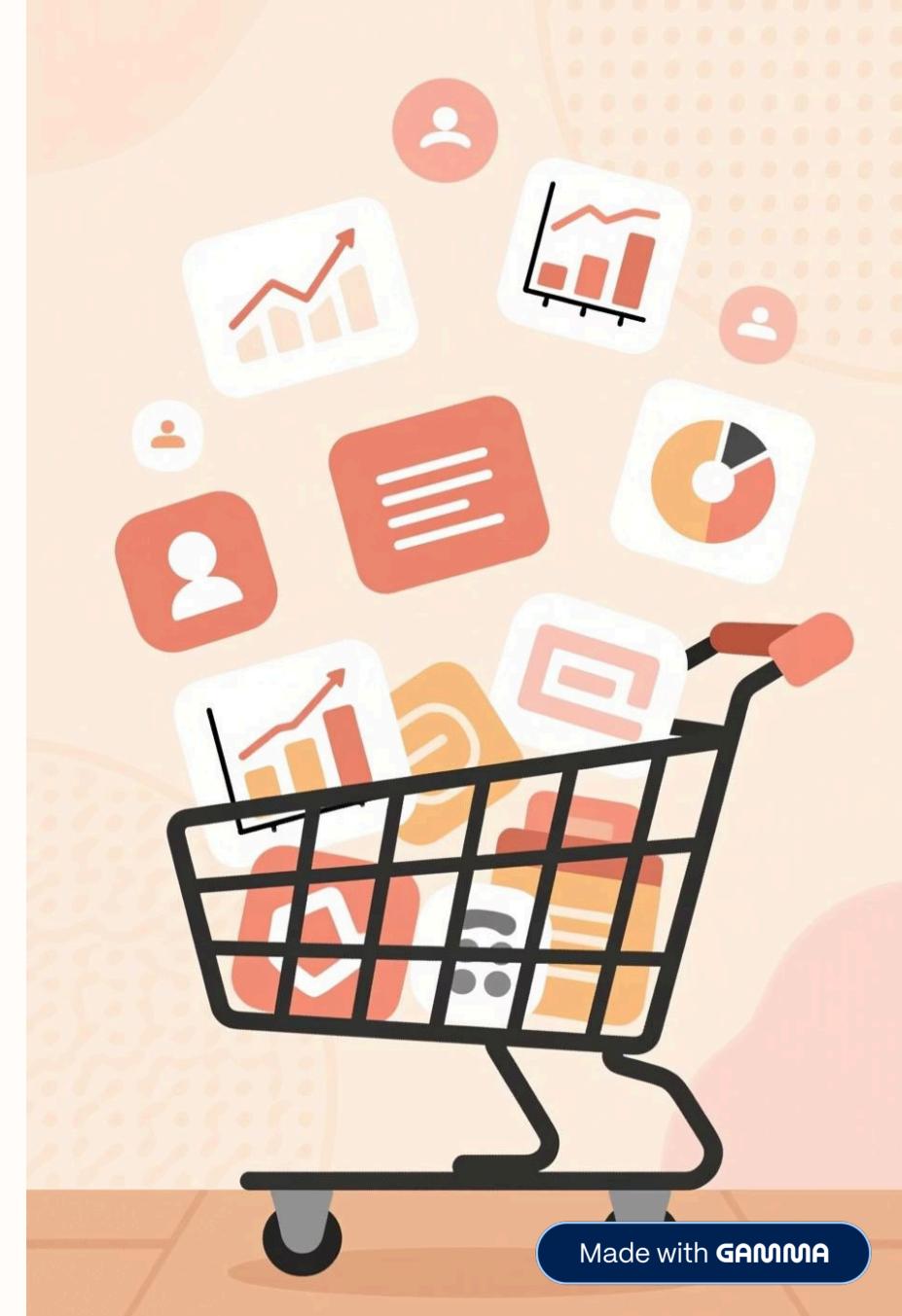
Product Categories

Insights into spending patterns.



Customer Segments

Understanding preferences & subscriptions.



Dataset Summary

- Rows: 3,900
- Columns: 18
- Key Features:
 - Customer demographics
 - Purchase details
 - Shopping behavior



Missing Data: 37 values in Review Rating.

Exploratory Data Analysis (Python)

01

Data Loading & Exploration

Imported dataset, checked structure and summary statistics.

02

Missing Data Handling

Imputed missing Review Ratings using median.

03

Column Standardization

Renamed columns to snake_case for readability.

04

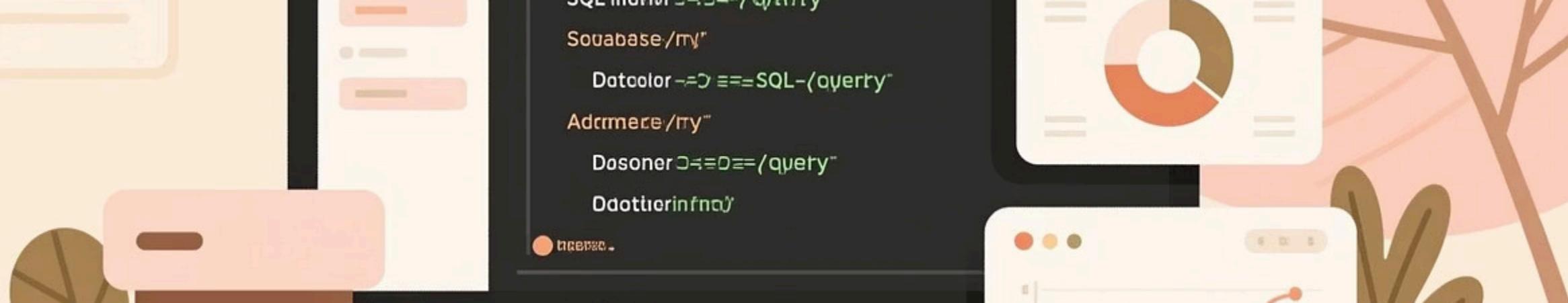
Feature Engineering

Created age_group and purchase_frequency_days.

05

Database Integration

Loaded cleaned data into PostgreSQL for SQL analysis.



Data Analysis (SQL)

1

Revenue by Gender

Male: \$157,890, Female: \$75,191

2

High-Spending Discount Users

Identified customers above average spend.

3

Top 5 Products by Rating

Gloves (3.86), Sandals (3.84), Boots (3.82), Hat (3.80), Skirt (3.78)

4

Shipping Type Comparison

Express avg: \$60.48, Standard avg: \$58.46

SQL Insights: Subscriptions & Discounts

Subscribers vs. Non-Subscribers

Subscribers: 1053 customers, avg spend \$59.49, total revenue \$62,645.

Non-Subscribers: 2847 customers, avg spend \$59.87, total revenue \$170,436.

Discount-Dependent Products

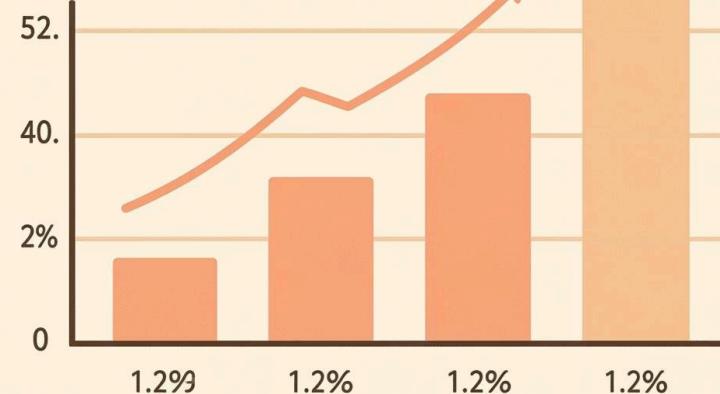
Hat (50%), Sneakers (49.66%), Coat (49.07%), Sweater (48.17%), Pants (47.37%).

Sumserity Report

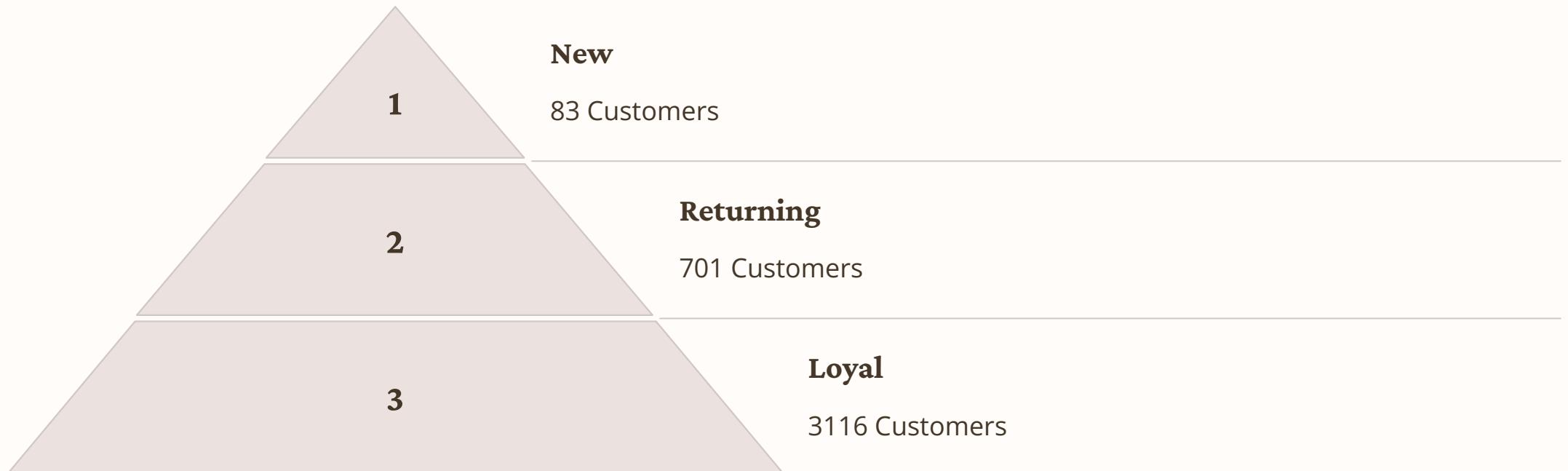
Subscription Payment

None.

0%



Customer Segmentation



Product Performance by Category

1	Accessories	Jewelry	171
1	Clothing	Blouse	171
1	Footwear	Sandals	160
1	Outerwear	Jacket	163

Repeat Buyers & Revenue by Age

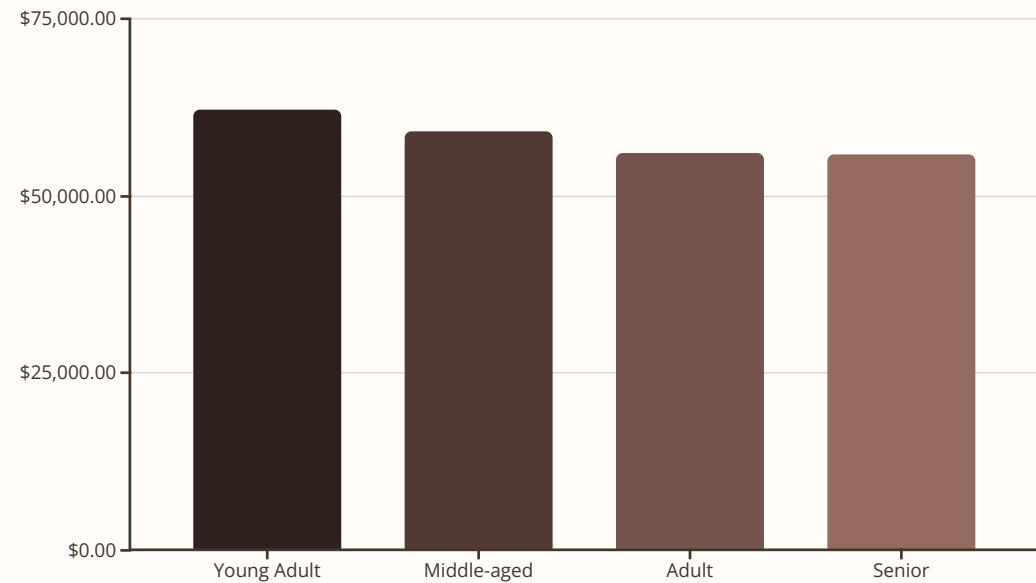


Subscribed Repeat Buyers

Customers with >5 purchases are more likely to subscribe.



Non-Subscribed Repeat Buyers



Business Recommendations

→ **Boost Subscriptions**

Promote exclusive benefits for subscribers.

→ **Customer Loyalty Programs**

Reward repeat buyers to foster loyalty.

→ **Review Discount Policy**

Balance sales boosts with margin control.

→ **Product Positioning**

Highlight top-rated and best-selling products.

→ **Targeted Marketing**

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