

Customer Shopping Behavior Analysis

Uncovering insights from transactional data to guide strategic business decisions.

Project Overview



3,900 Purchases

Analyzed transactional data across categories.



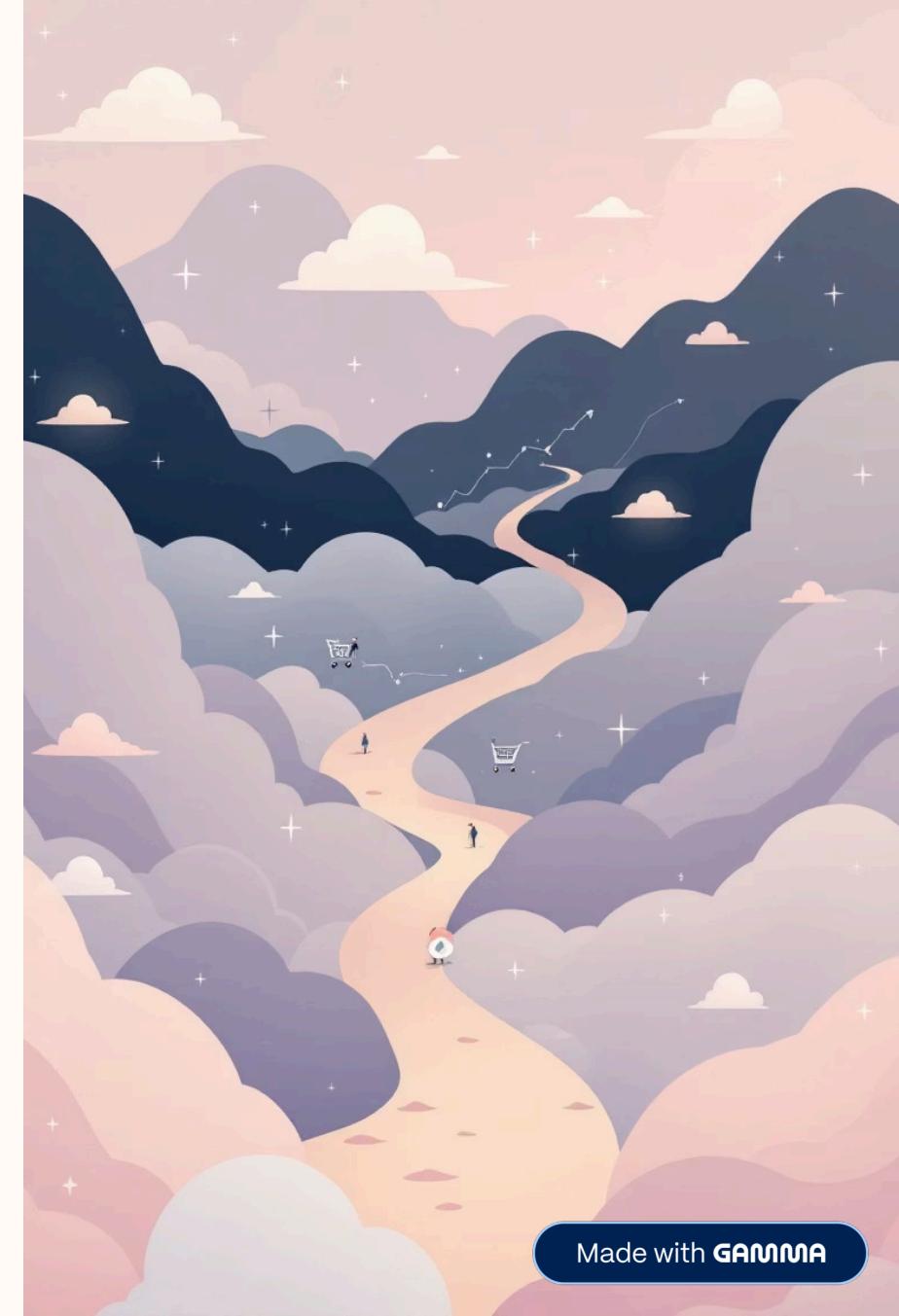
Uncover Insights

Spending patterns, segments, preferences, subscriptions.



Strategic Decisions

Guiding business growth and optimization.



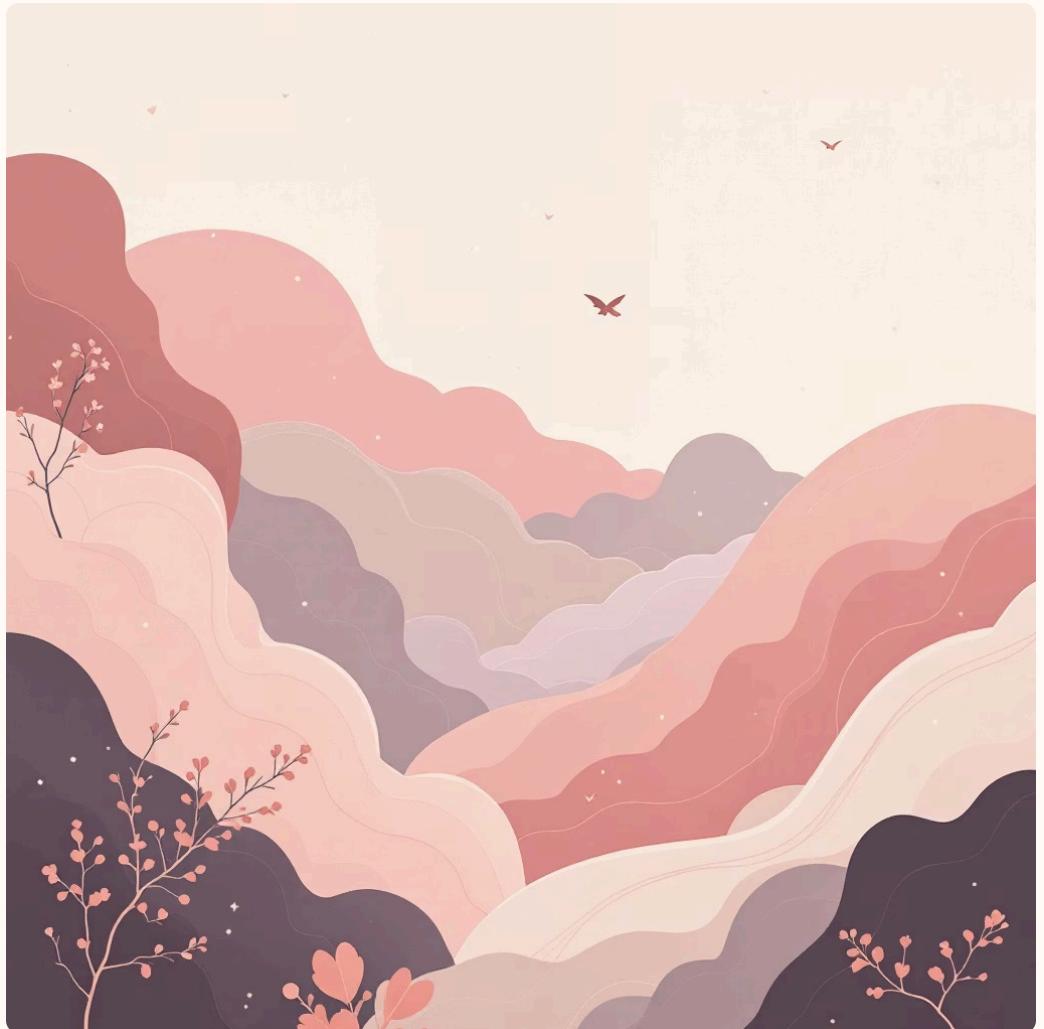
Dataset Summary

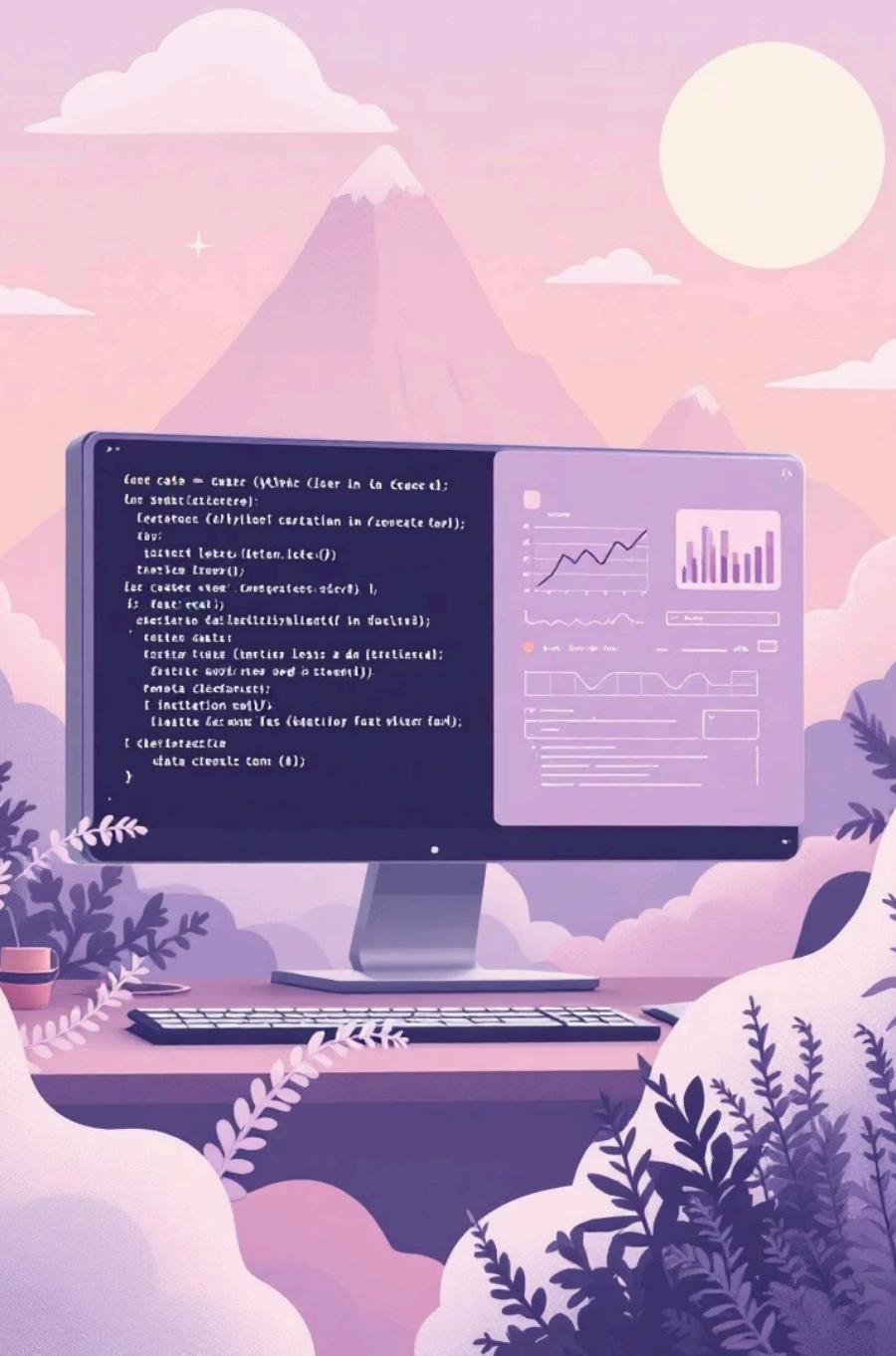
Key Features

- Customer demographics (Age, Gender, Location, Subscription)
- Purchase details (Item, Category, Amount, Season, Size, Color)
- Shopping behavior (Discount, Promo, Previous Purchases, Frequency, Review, Shipping)

Data Snapshot

- Rows: 3,900
- Columns: 18
- Missing Data: 37 values in Review Rating





Exploratory Data Analysis (Python)



Data Loading & Initial Exploration

Pandas import, structure, and summary statistics.



Missing Data Handling

Imputed Review Rating with median by product category.



Feature Engineering

Created age_group, purchase_frequency_days.



Database Integration

Loaded cleaned data to MySQL for SQL analysis.

Data Analysis (SQL)

Key business questions answered through structured SQL queries.

1

Revenue by Gender

Male vs. female customer revenue comparison.

2

High-Spending Discount Users

Customers using discounts, spending above average.

3

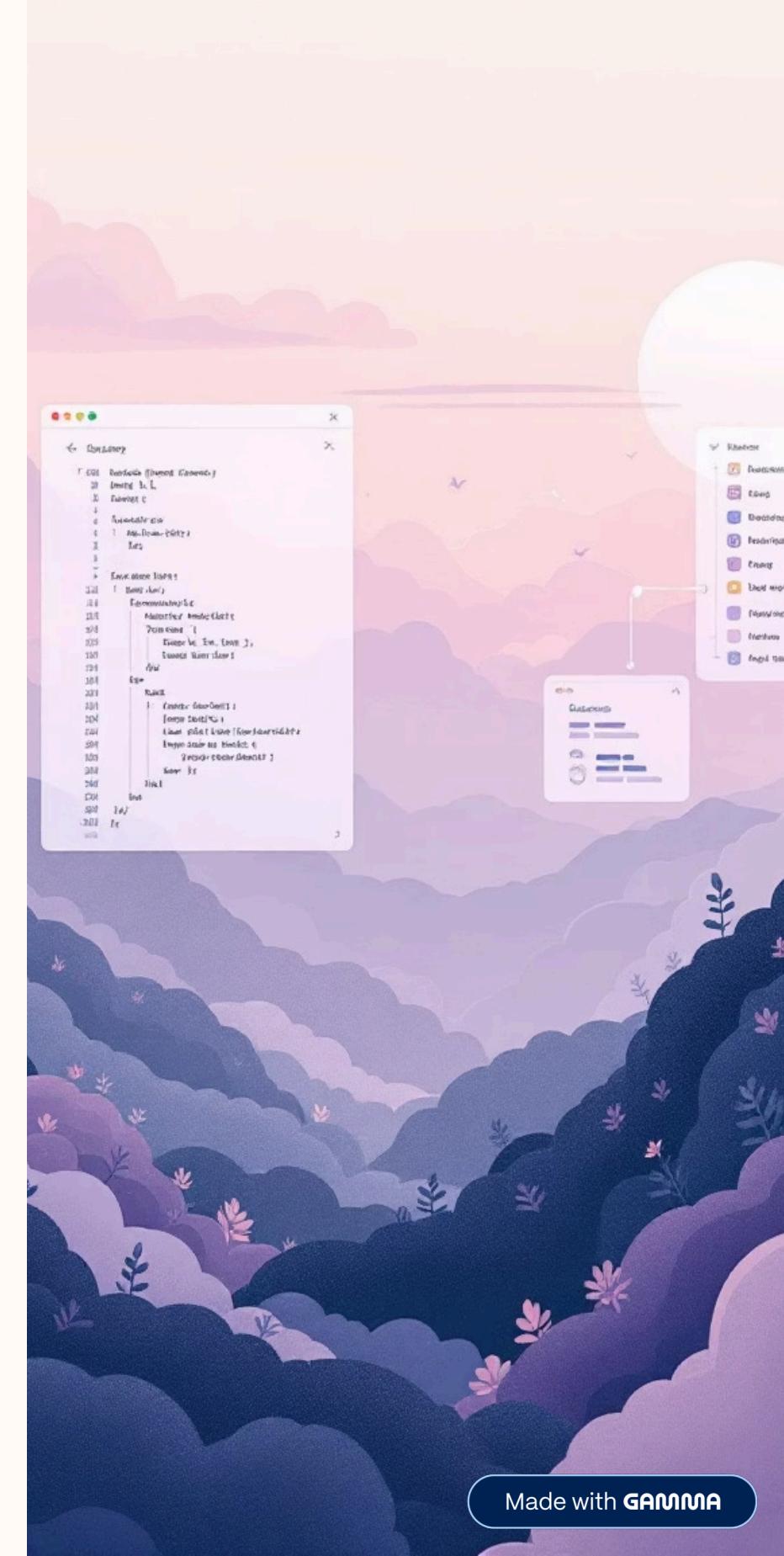
Top 5 Products by Rating

Highest average review ratings identified.

4

Shipping Type Comparison

Average purchase amounts: Standard vs. Express.



Subscription & Discount Insights

Subscribers vs. Non-Subscribers

Compared average spend and total revenue.



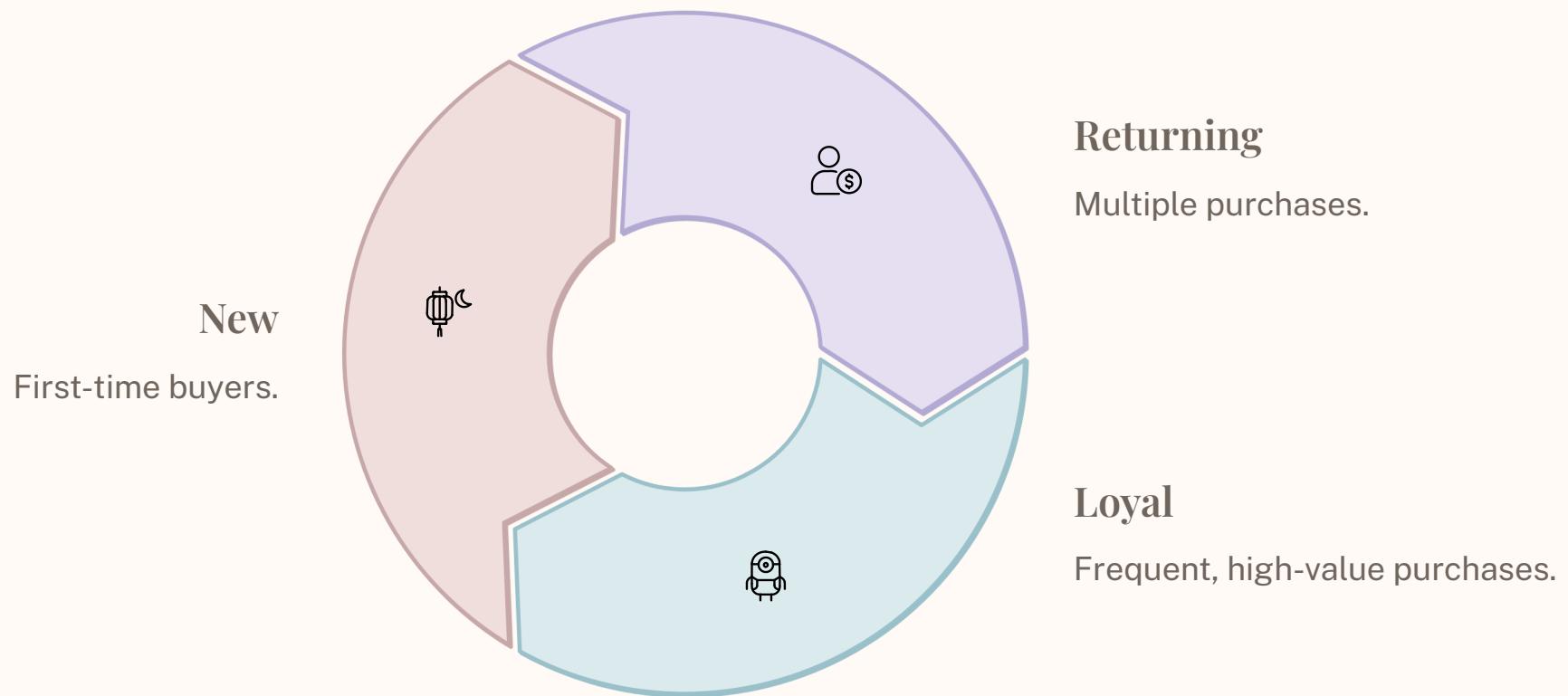
Discount-Dependent Products

Top 5 products with highest discounted purchases.



Customer Segmentation

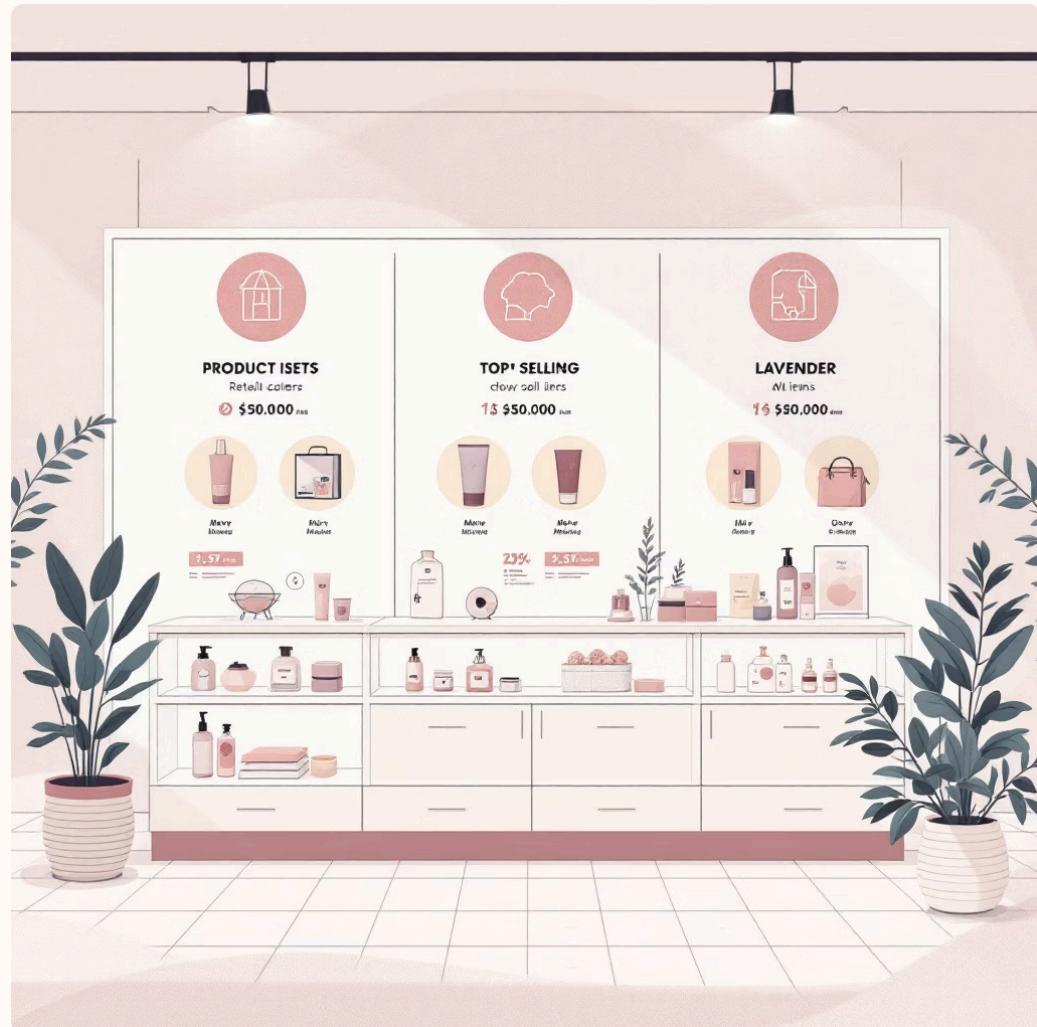
Classifying customers based on purchase history.



Product & Purchase Patterns

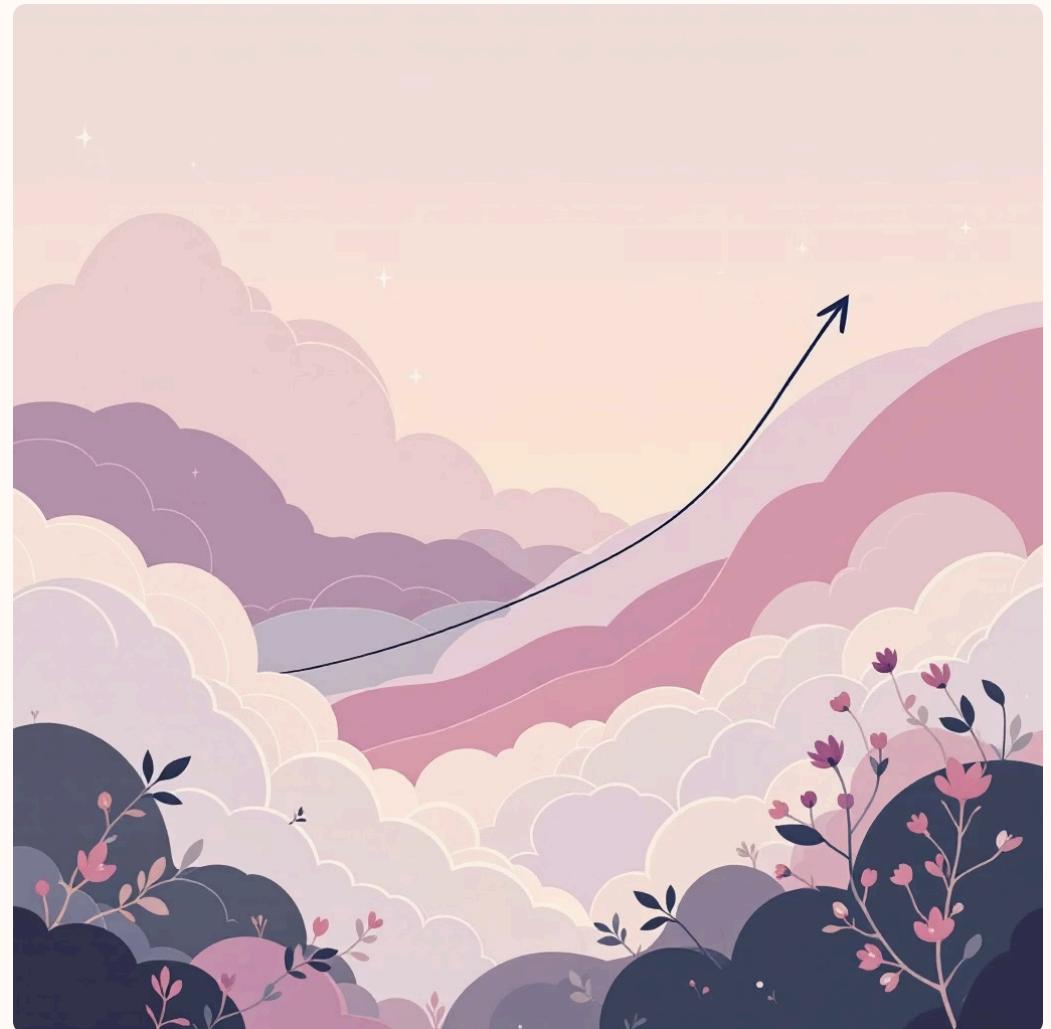
Top 3 Products per Category

Most purchased items within each category.



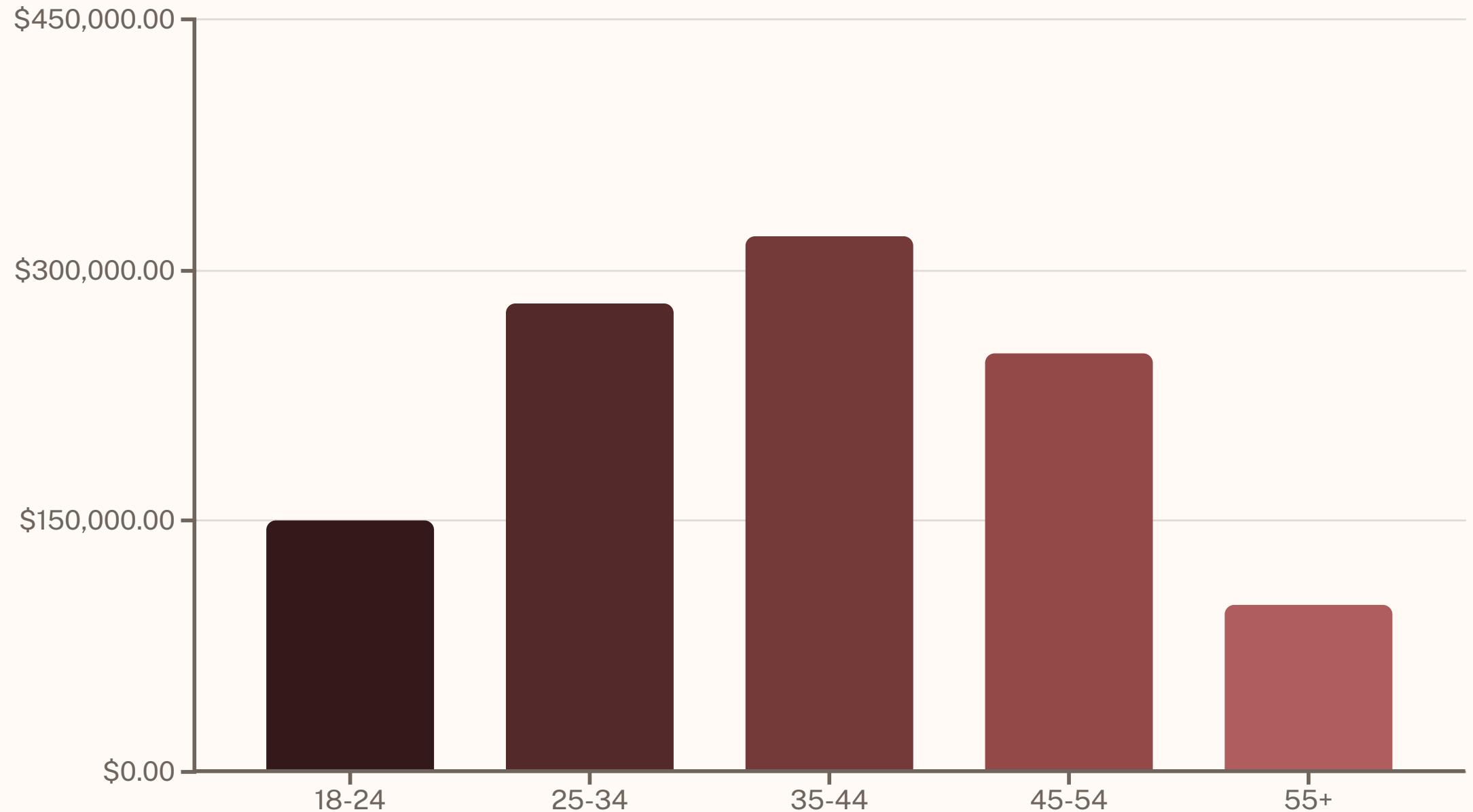
Repeat Buyers & Subscriptions

Customers with >5 purchases more likely to subscribe?



Revenue by Age Group

Total revenue contribution from each age demographic.





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.

→ **Targeted Marketing**

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

Interactive Dashboard in Power BI

