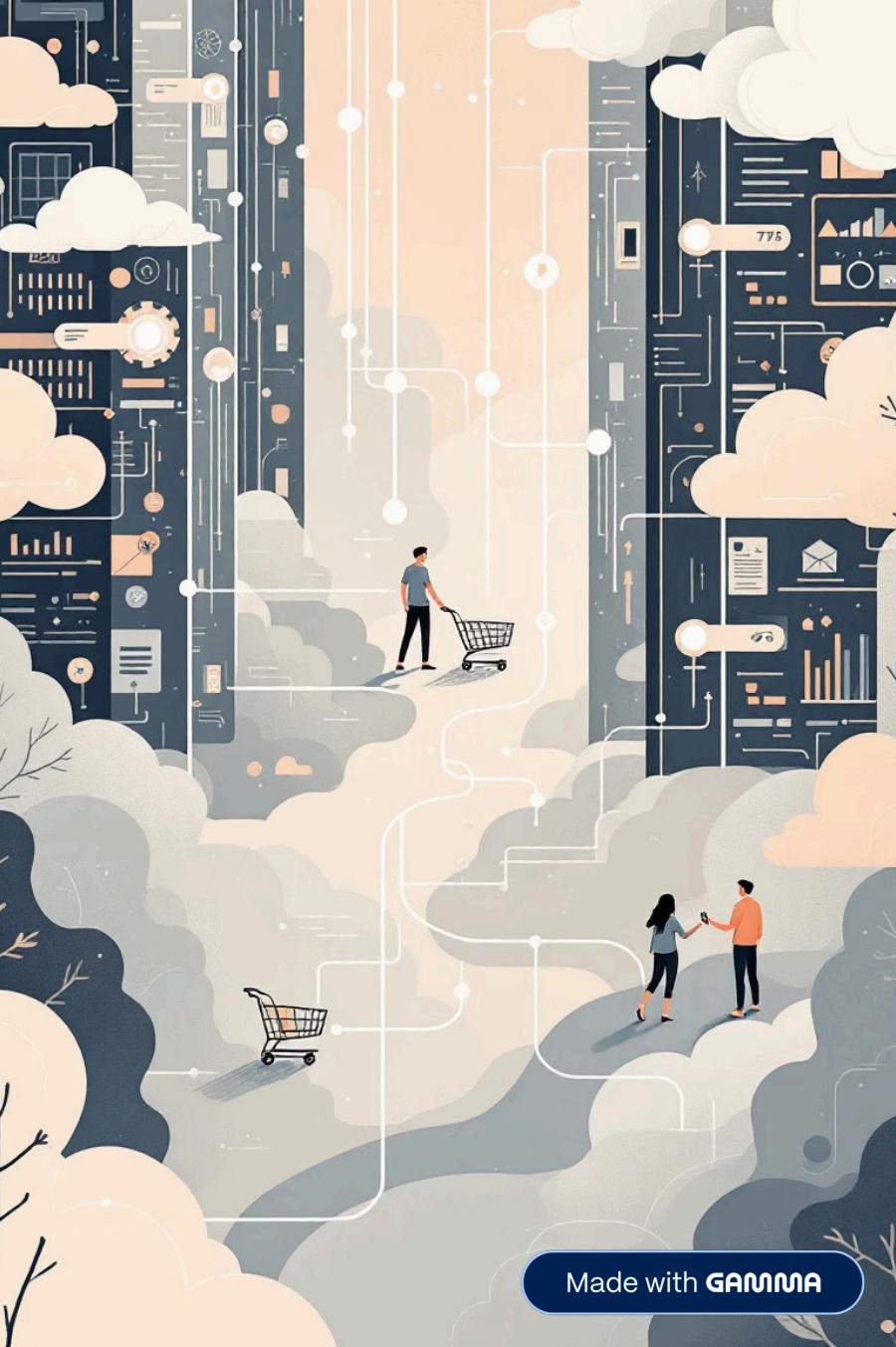


Customer Shopping Behavior Analysis

Uncovering insights from 3,900 purchases to guide strategic business decisions.





Project Overview

Goal

Analyze spending patterns, customer segments, product preferences, and subscription behavior.

Data Source

Transactional data from 3,900 purchases across various product categories.

Outcome

Guide strategic business decisions with actionable insights.

Dataset Summary

Rows: 3,900

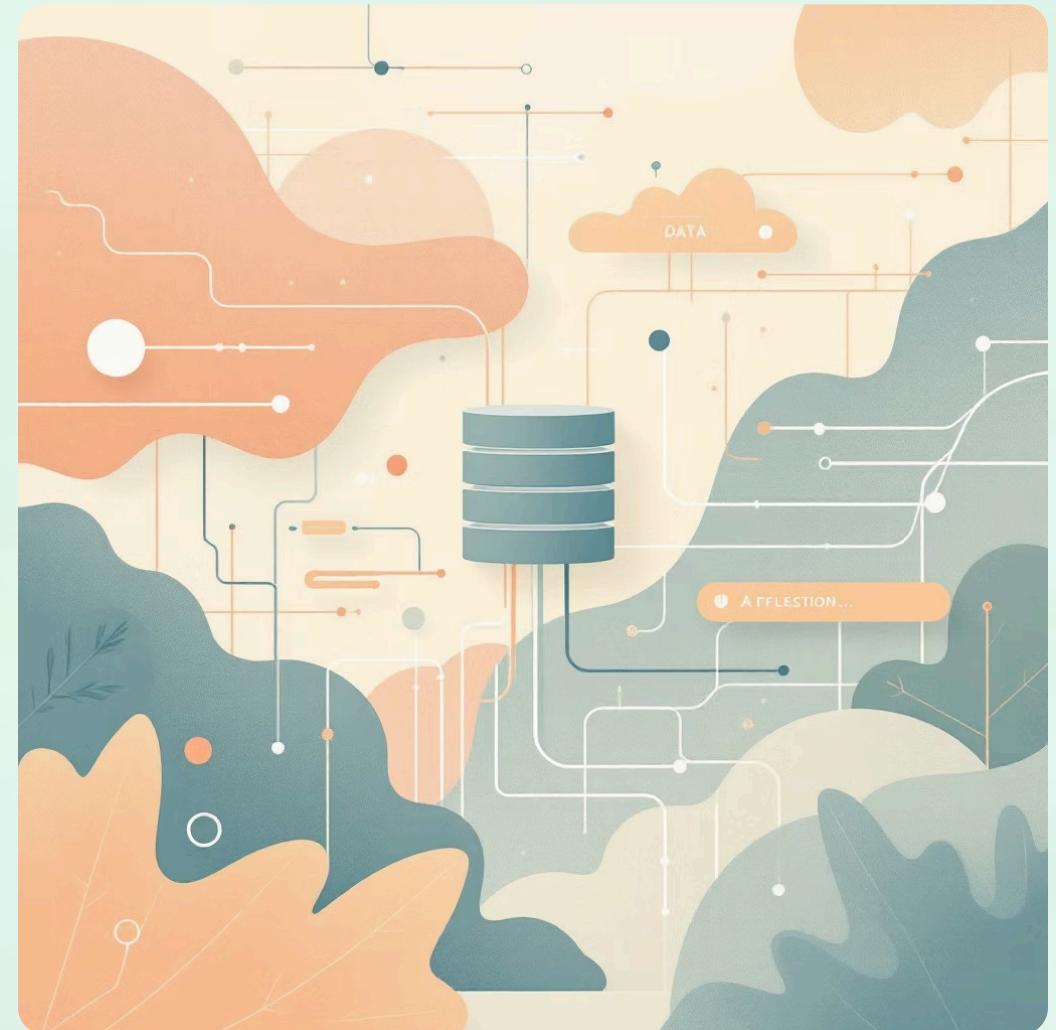
Columns: 18

Key Features:

- Customer demographics
- Purchase details
- Shopping behavior

Missing Data:

- 37 values in Review Rating column



Exploratory Data Analysis (Python)

01

Data Loading & Exploration

Imported dataset, checked structure and summary statistics.

02

Missing Data Handling

Imputed Review Rating using median per product category.

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)

Key business questions answered through structured PostgreSQL analysis.

1

Revenue by Gender

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

2

High-Spending Discount Users

Identified 839 customers.

3

Top 5 Products by Rating

Gloves, Sandals, Boots, Hat, Skirt.

4

Shipping Type Comparison

Express: \$60.48 avg. vs. Standard: \$58.46 avg.



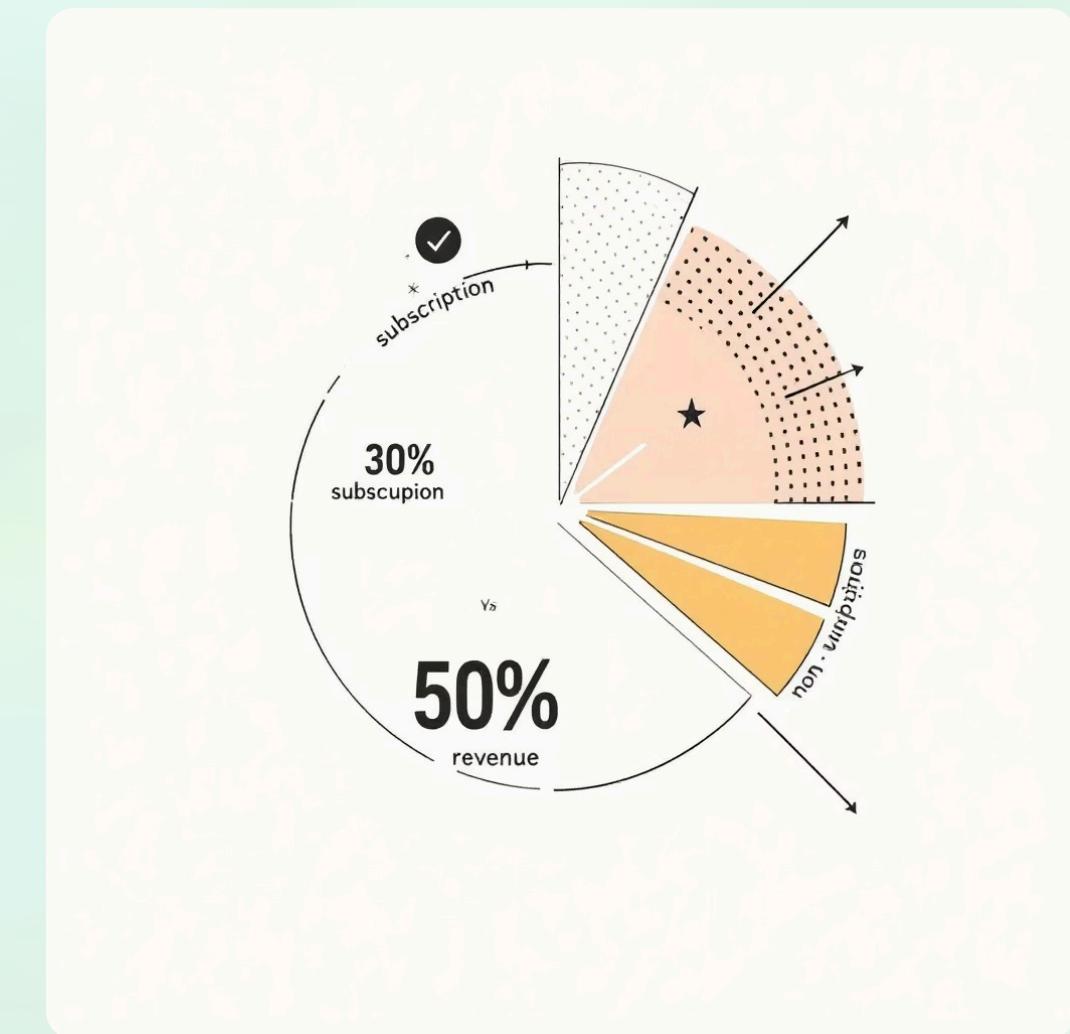
SQL Insights: Subscriptions & Discounts

Subscribers vs. Non-Subscribers

Yes	1053	59.49	62645.00
No	2847	59.87	170436.00

Discount-Dependent Products

Hat	50.00
Sneakers	49.66
Coat	49.07





Customer Segmentation



Loyal

3116 Customers



New

83 Customers



Returning

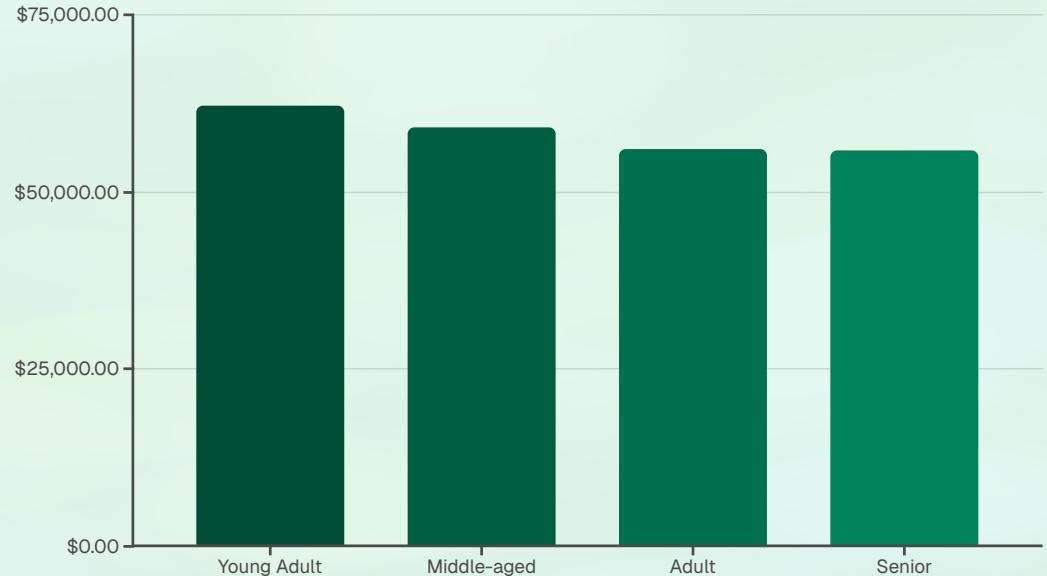
701 Customers

Product & Age Group Insights

Top Products per Category

- **Accessories:** Jewelry, Sunglasses, Belt
- **Clothing:** Blouse, Pants, Shirt
- **Footwear:** Sandals, Shoes, Sneakers
- **Outerwear:** Jacket, Coat

Revenue by Age Group



Repeat Buyers & Subscriptions

Customers with >5 purchases are more likely to subscribe.



Non-Subscribers

Repeat Buyers



Subscribers

Repeat Buyers

Business Recommendations

→ Boost Subscriptions

Promote exclusive benefits.

→ Customer Loyalty Programs

Reward repeat buyers.

→ Review Discount Policy

Balance sales with margin control.

→ Product Positioning

Highlight top-rated and best-selling products.

→ Targeted Marketing

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