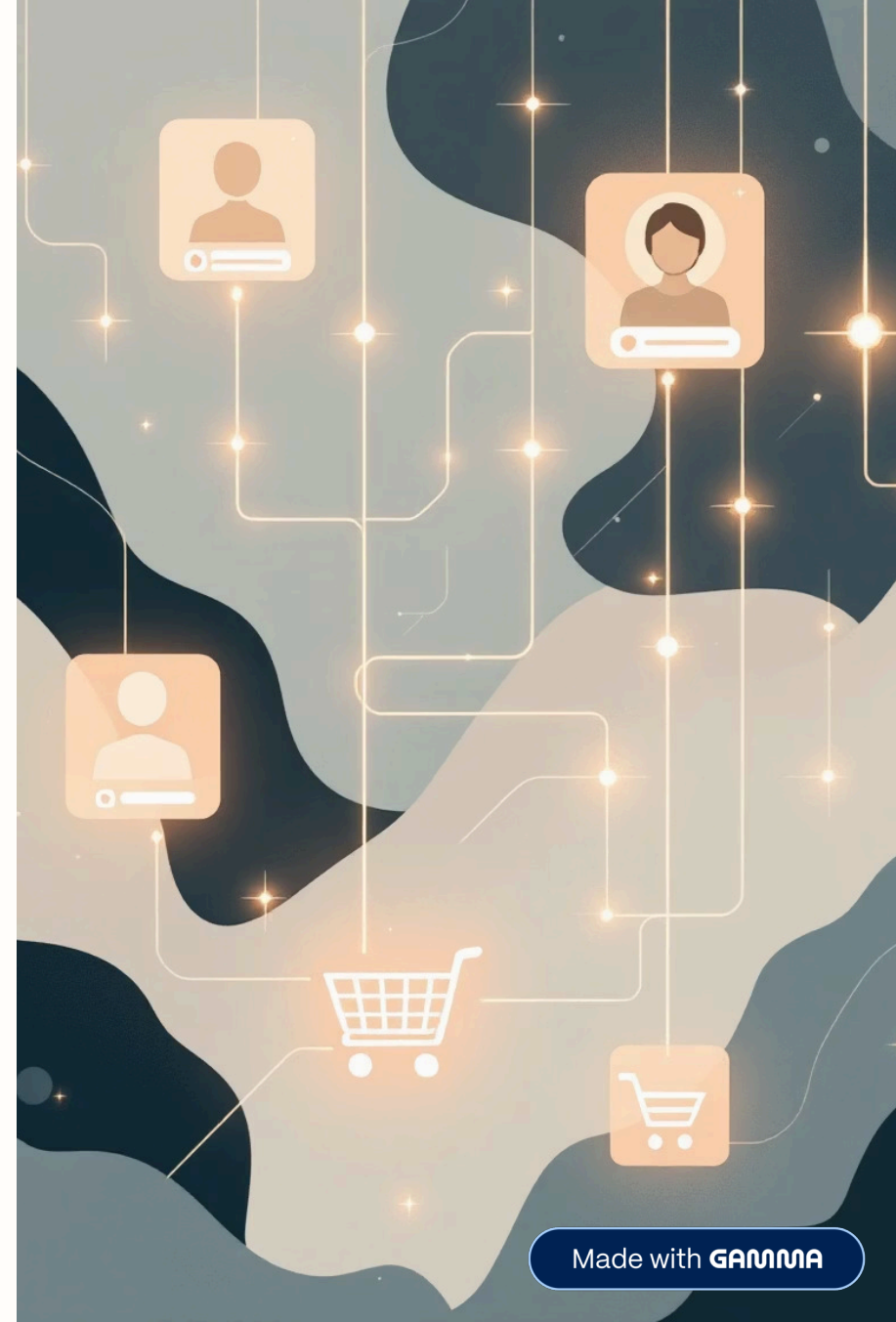


Customer Shopping Behavior Analysis

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





Project Overview

Analyze Behavior

Transactional data from 3,900 purchases.

Uncover Insights

Spending patterns, segments, preferences, subscriptions.

Guide Decisions

Strategic 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)

01

Data Loading & Exploration

Pandas import, df.info(), .describe() for summary.

02

Missing Data Handling

Imputed Review Rating with median by category.

03

Column Standardization

Renamed to snake_case for readability.

04

Feature Engineering

Created age_group and purchase_frequency_days.

05

Database Integration

Loaded cleaned data to PostgreSQL for SQL analysis.

Data Analysis (SQL)



Revenue by Gender

Male: \$157,890

Female: \$75,191



Top 5 Products by Rating

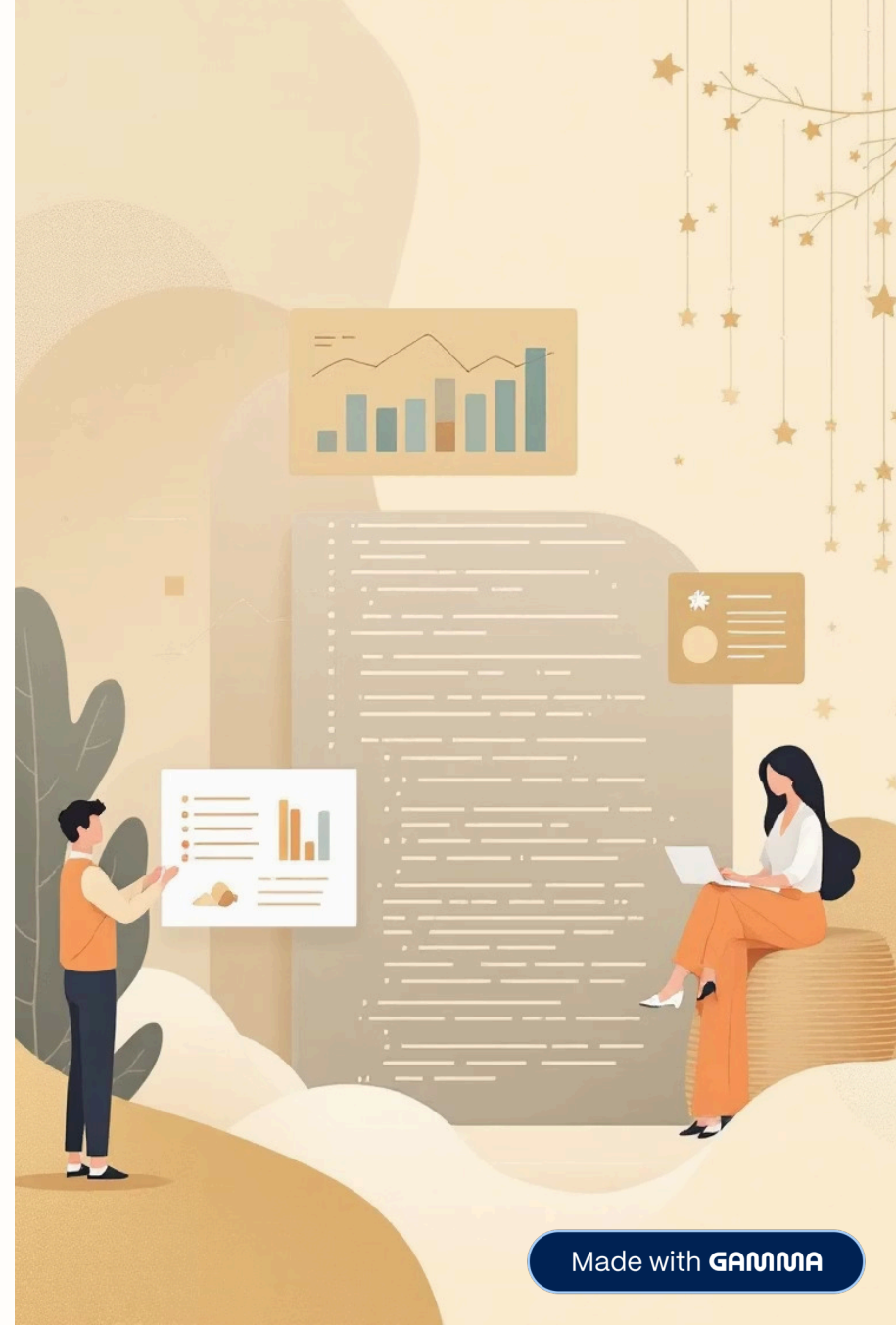
Gloves (3.86), Sandals (3.84),
Boots (3.82)



Shipping Type

Express: \$60.48 avg

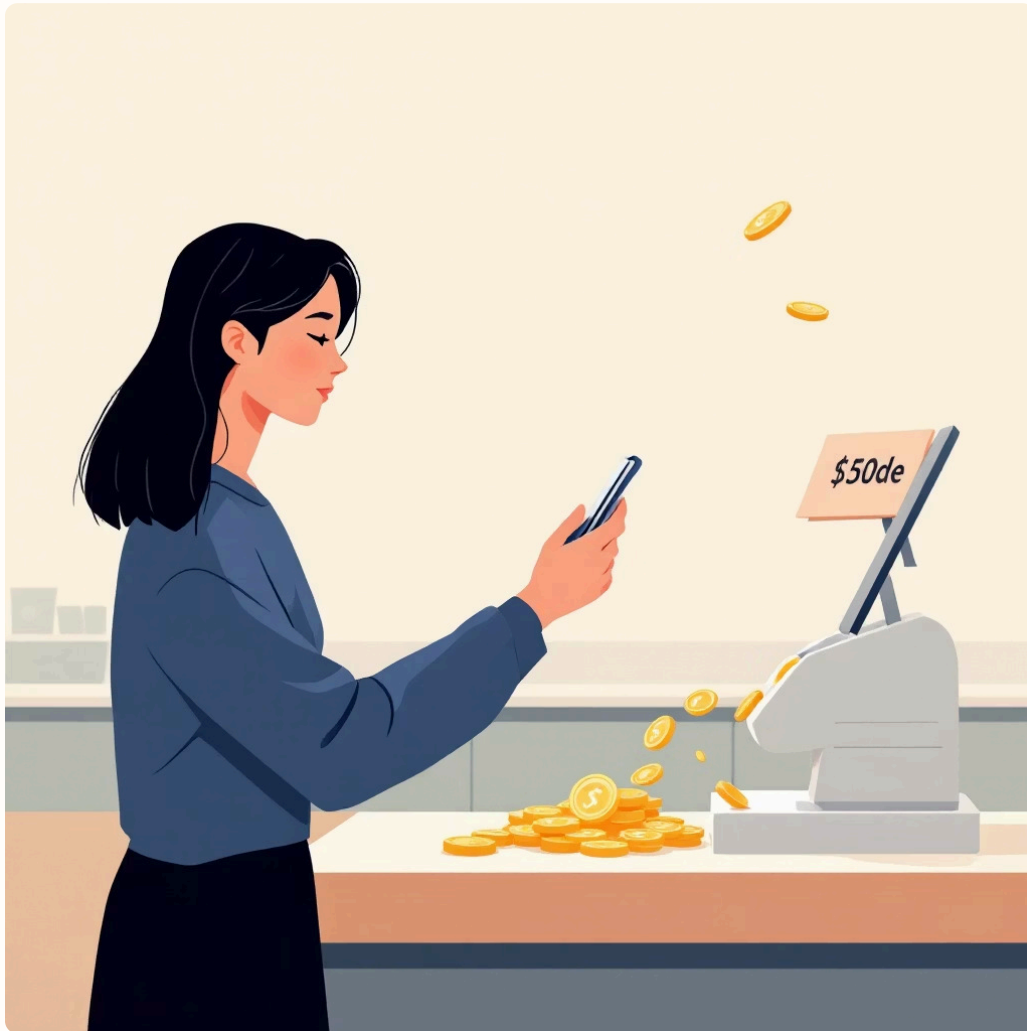
Standard: \$58.46 avg



SQL Insights: Spending & Subscriptions

High-Spending Discount Users

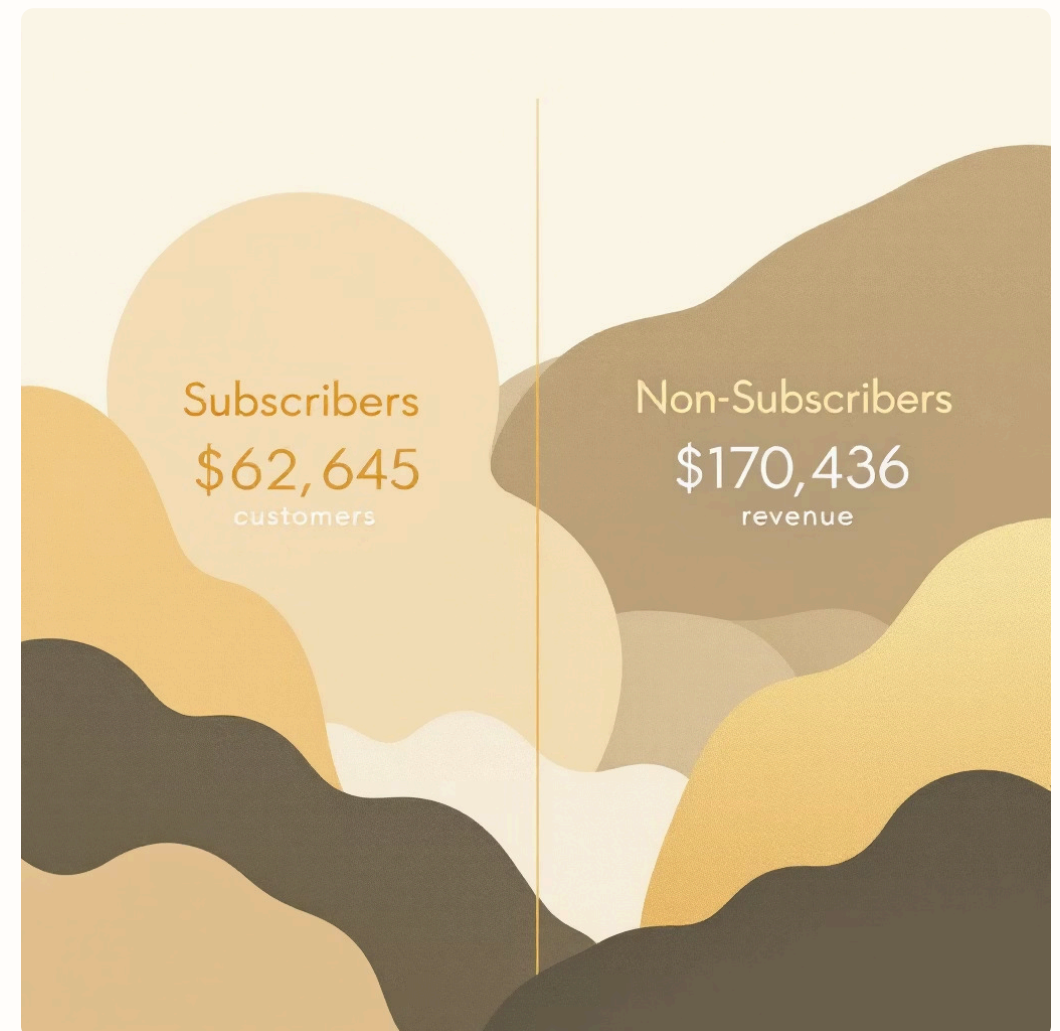
839 customers used discounts but spent above average.



Subscribers vs. Non-Subscribers

Subscribers: 1053 customers, \$62,645 revenue.

Non-Subscribers: 2847 customers, \$170,436 revenue.



SQL Insights: Product & Loyalty

1

Discount-Dependent Products

Hat (50%), Sneakers (49.66%), Coat (49.07%)

2

Customer Segmentation

Loyal (3116), Returning (701), New (83)

3

Repeat Buyers & Subscriptions

958 repeat buyers are subscribers.

-50%
\$55 cof

-30%
\$5 cof

-50%
\$55 cof

Top Products & Revenue by Age

Top 3 Products per Category

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



Revenue by Age Group

- Young Adult: \$62,143
- Middle-aged: \$59,197
- Adult: \$55,978
- Senior: \$55,763



Shipping Preferences Impact

Express Shipping

\$65

Average purchase amount

Standard Shipping

\$58

Average purchase amount

Express shipping customers spend 12% more per transaction



Interactive Dashboard in Power BI

Visualizing key insights for actionable business strategies.

The dashboard provides a dynamic view of customer behavior and trends.



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.

