Customer Shopping Behavior Analysis

Uncovering insights from transactional data to guide strategic business decisions.

Project Overview
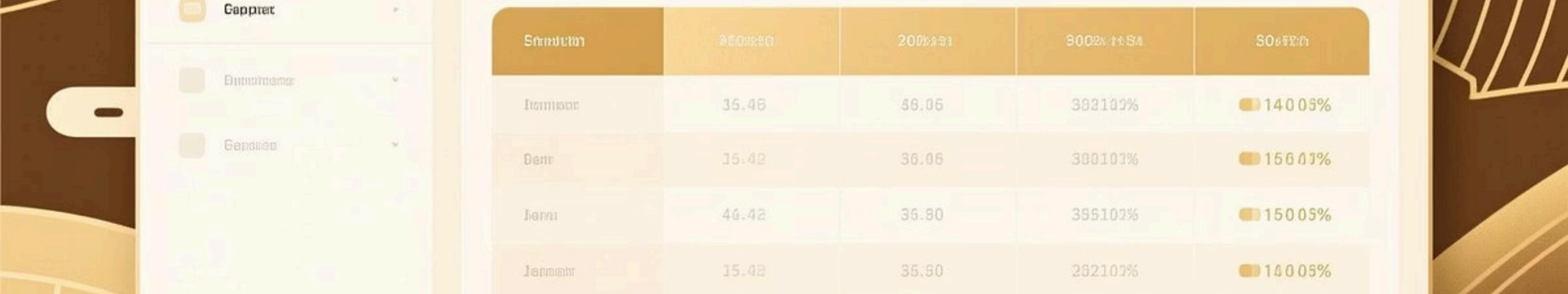
Goal

Analyze 3,900 purchases to understand spending, segments, and preferences.

Objective

Uncover insights for strategic business decisions.

Dataset Summary

Data Points

- 3,900 Rows, 18 Columns
- Customer Demographics
- Purchase Details
- Shopping Behavior

Key Features

- Age, Gender, Location
- Item, Category, Amount
- Discount, Reviews, Shipping

Made with GAMMA

Exploratory Data Analysis (Python)

01

Data Loading & Exploration

Imported with pandas, checked structure and summary statistics.

02

Data Cleaning

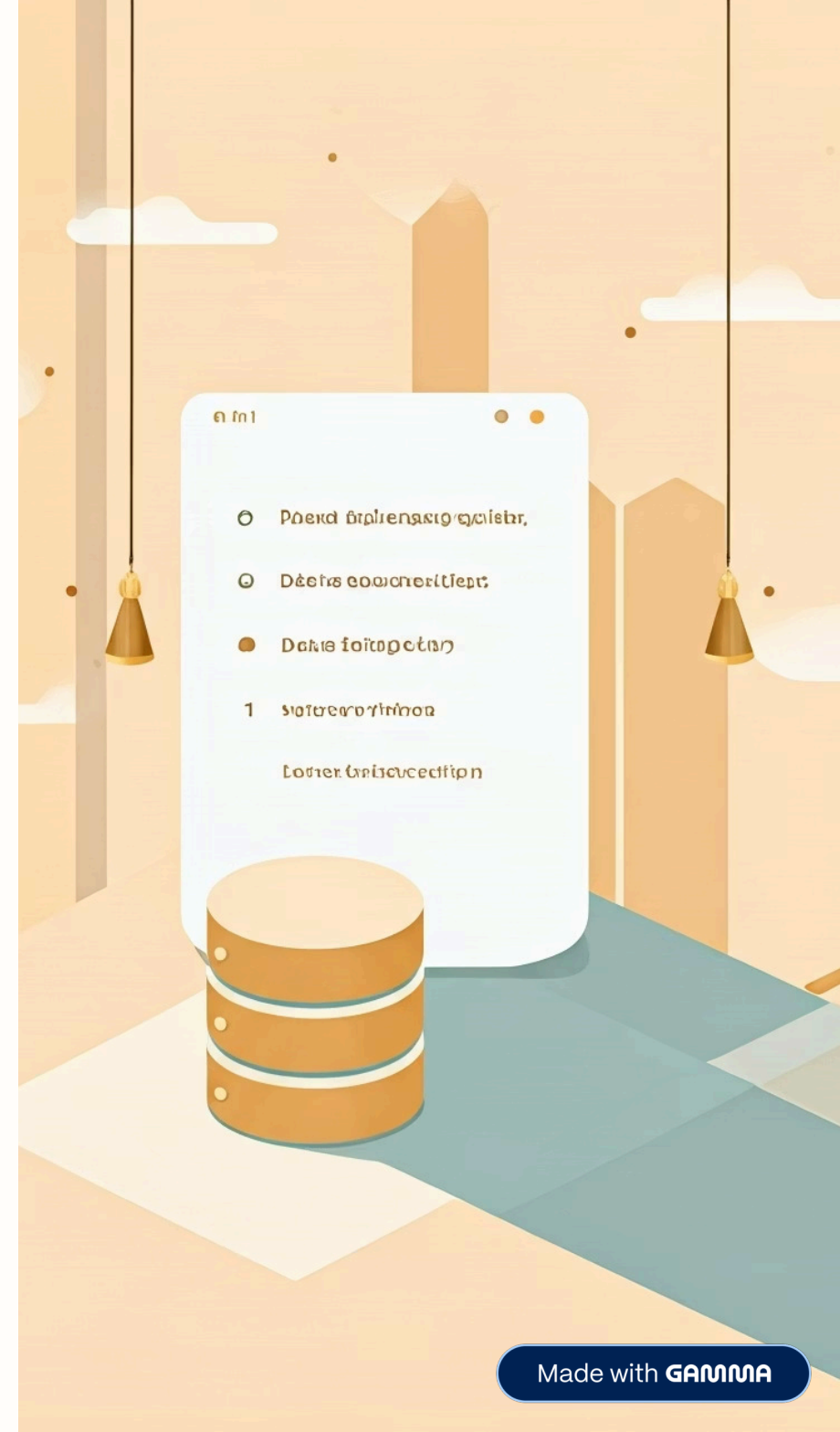Imputed missing 'Review Rating' with median, standardized columns.

03

Feature Engineering

Created 'age_group' and 'purchase_frequency_days'.

04

Database Integration

Loaded cleaned data into PostgreSQL for SQL analysis.

SQL Analysis: Key Business Insights

Revenue by Gender

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

High-Spending Discount Users

839 customers spent above average with discounts.

Top 5 Products by Rating

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

SQL Analysis: Shipping & Subscriptions

1

Shipping Type Comparison

Express: $60.48 avg. purchase; Standard: $58.46 avg.

2

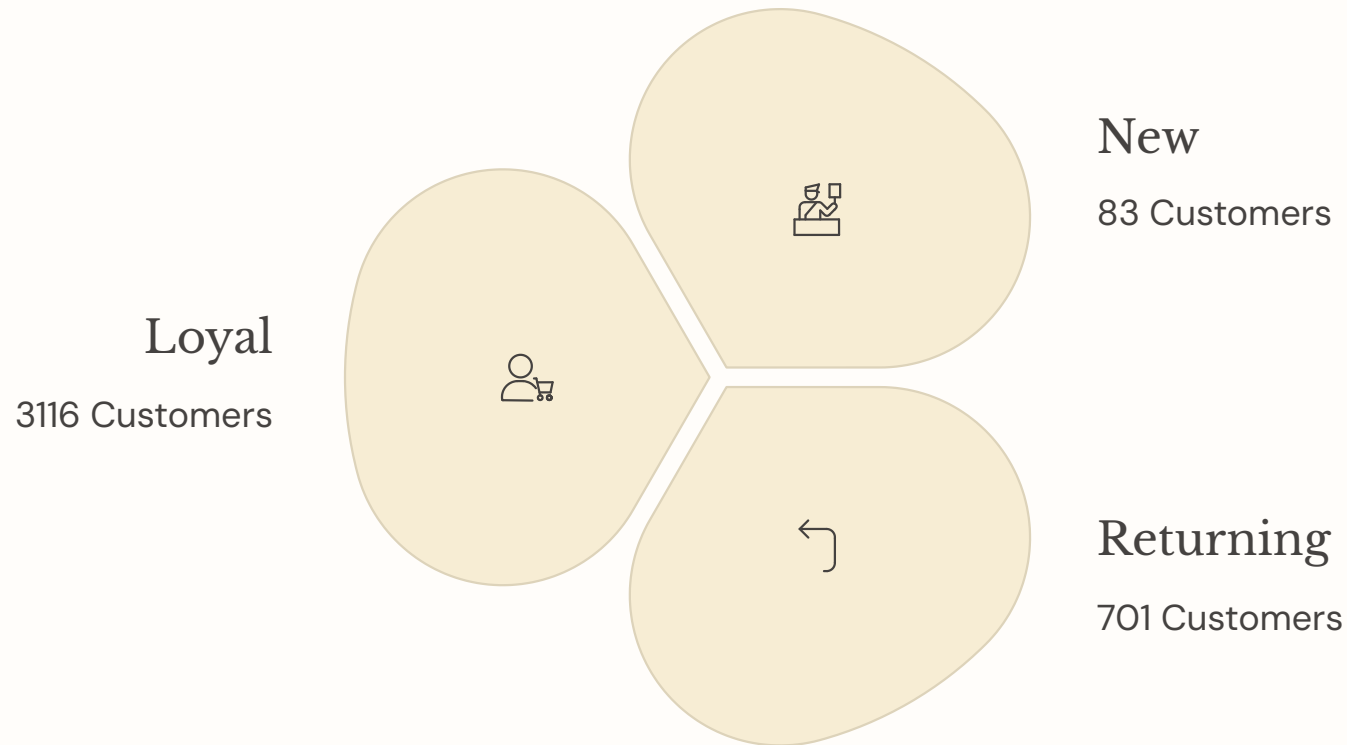### Subscribers vs. Non-Subscribers

Subscribers: 1053 customers, $59.49 avg. spend.

3

Discount-Dependent Products

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

SQL Analysis: Customer Segmentation

New
83 Customers

Loyal
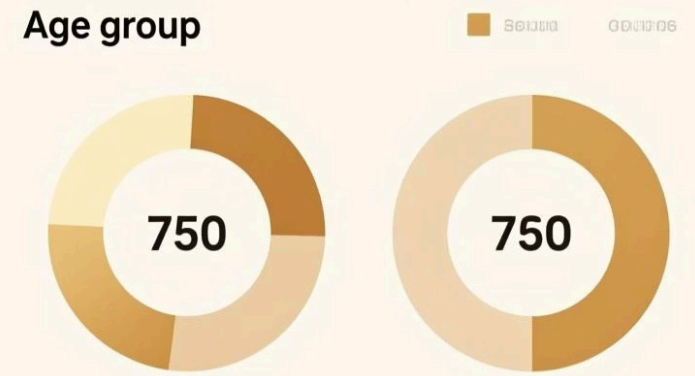3116 Customers

Returning
701 Customers

SQL Analysis: Product & Age Insights

Top 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

Interactive Dashboard in Power BI

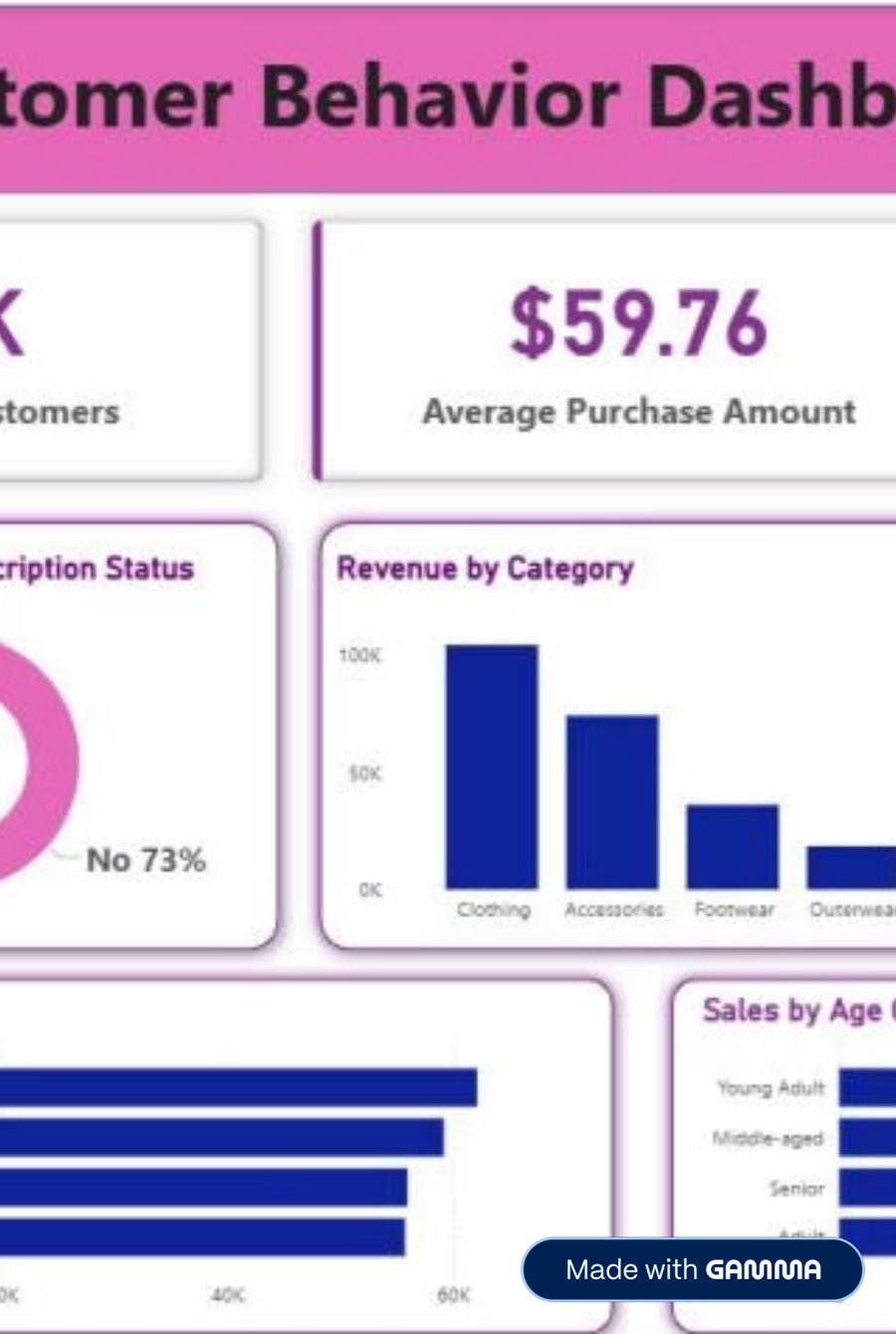Visualizing key metrics for actionable insights.

3.9K
Customers

$59.76
Avg. Purchase

3.75
Avg. Review

tomer Behavior Dashb

$59.76
Average Purchase Amount

...tomers

...cription Status

No 73%

Revenue by Category

100K

50K

0K

Clothing Accessories Footwear Outerwear

Sales by Age

Young Adult

Middle-aged

Senior

Adult

40K   60K

Business Recommendations

→ **Boost Subscriptions**

Promote exclusive benefits.

→ **Customer Loyalty Programs**

Reward repeat buyers.

→ **Review Discount Policy**

Balance sales with margin control.

→ **Targeted Marketing**

Focus on high-revenue age groups.