Customer Shopping Behavior Analysis

Project Overview

Analyze Behavior
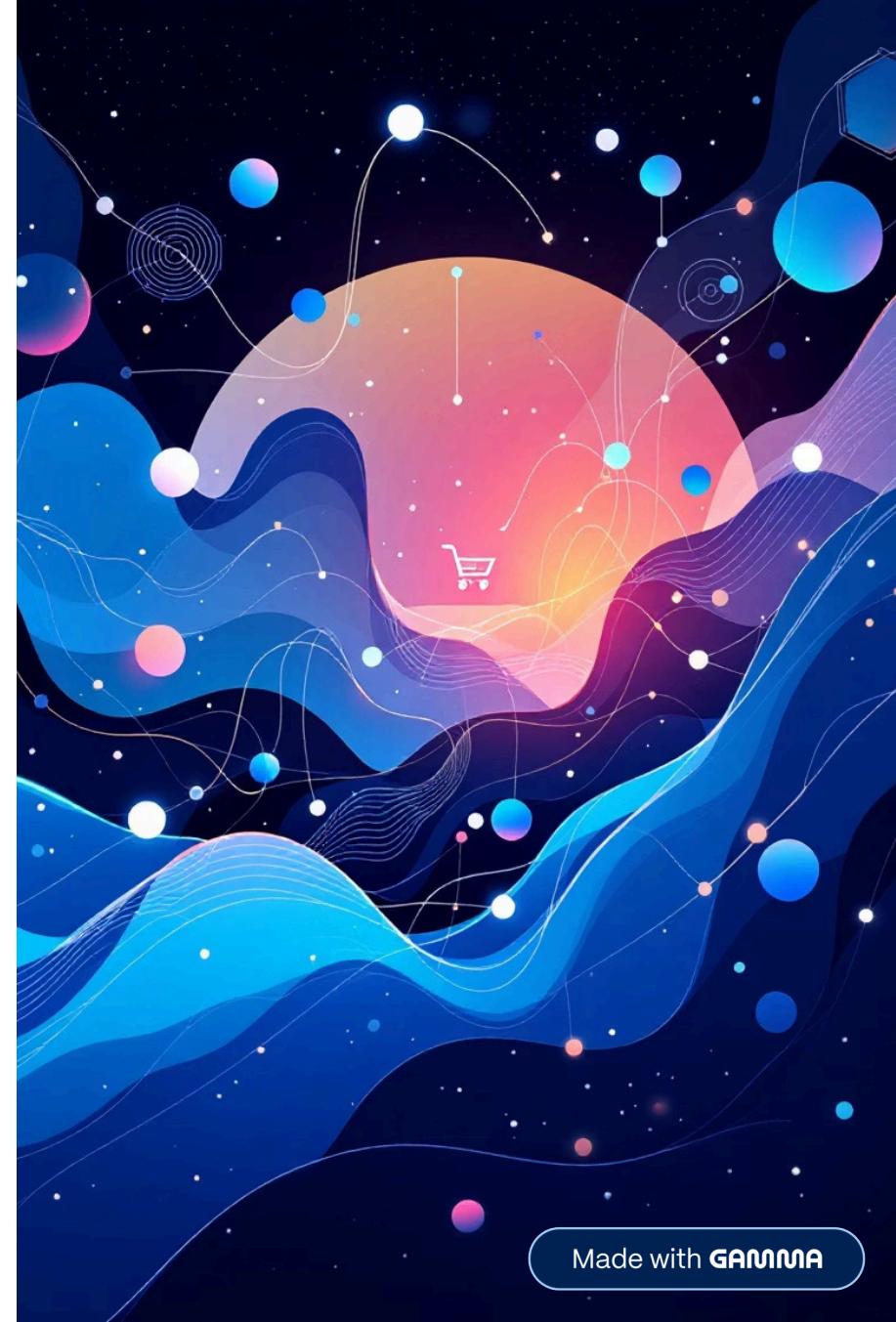
Uncover insights from 3,900 purchases.

Strategic Decisions

Guide business strategy with data-driven insights.

Key Goals

Spending patterns, segments, preferences, subscriptions.

Dataset Summary

Rows: 3,900

Columns: 18

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)

Missing Data:

37 values in Review Rating column.

Exploratory Data Analysis (Python)

01

Data Loading & Exploration

Pandas import, df.info(), .describe() for structure and stats.

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

Data Consistency & Integration

Dropped redundant promo_code_used. Loaded to PostgreSQL.

Data Analysis (SQL) - Key Insights

1

Revenue by Gender

Compared total revenue: Male vs. Female.

2

High-Spending Discount Users

Identified users with discounts, above average spend.

3

Top 5 Products by Rating

Products with highest average review ratings.

4

Shipping Type Comparison

Average purchase amounts: Standard vs. Express.

5

Subscribers vs. Non-Subscribers

Average spend and total revenue comparison.

SQL Insights: Product & Customer Focus

- **Discount-Dependent Products**
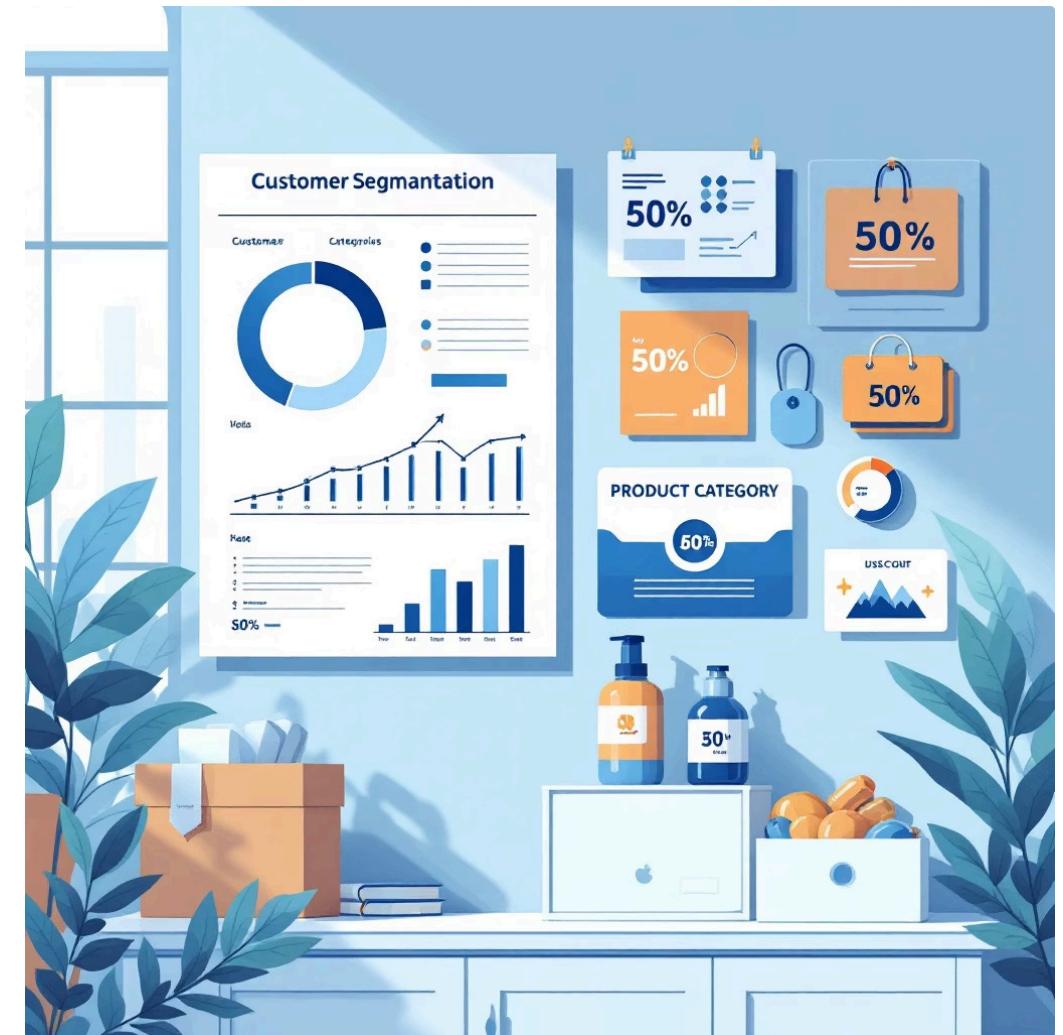
  Top 5 products with highest discounted purchases.

- **Customer Segmentation**

  Classified into New, Returning, Loyal segments.

- **Top 3 Products per Category**

  Most purchased items within each category.

SQL Insights: Loyalty & Demographics

Repeat Buyers & Subscriptions

Customers with >5 purchases more likely to subscribe.

Revenue by Age Group

Total revenue contribution from each age group.

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 Strategies

Product Positioning

Highlight top-rated and best-selling products in campaigns.

Targeted Marketing

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