

Customer Shopping Behavior Analysis

Uncovering insights from 3,900 purchases to guide strategic business decisions through data-driven analysis of spending patterns, customer segments, and product preferences.





Dataset Overview

Scale

3,900 purchases analyzed across 18 data columns

Customer Data

Demographics, subscription status, location, and age

Purchase Details

Categories, amounts, seasons, sizes, colors, and ratings

Behavior Metrics

Discounts, promo codes, frequency, and shipping preferences

Data Preparation & Cleaning

01

Data Loading

Imported dataset using pandas for Python analysis

02

Initial Exploration

Checked structure and generated summary statistics

03

Missing Data

Imputed 37 missing Review Rating values using category medians

04

Feature Engineering

Created age groups and purchase frequency metrics; standardized column names

05

Database Integration

Loaded cleaned data into PostgreSQL for SQL analysis

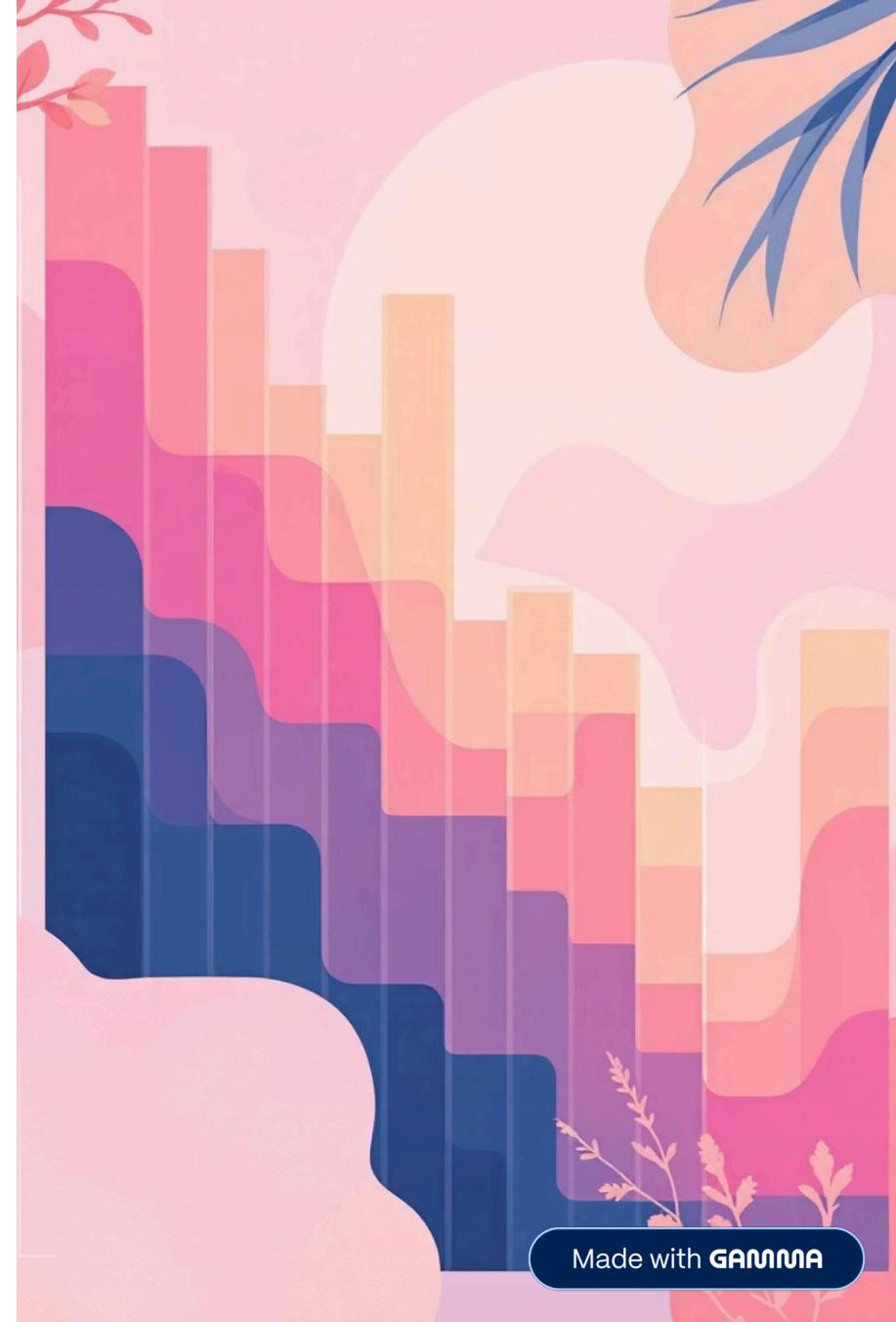
Revenue Insights by Demographics

Gender Analysis

Compared total revenue generated by male versus female customers to identify spending patterns across demographics.

Age Group Performance

Calculated revenue contribution by age group to target marketing efforts on highest-value segments.



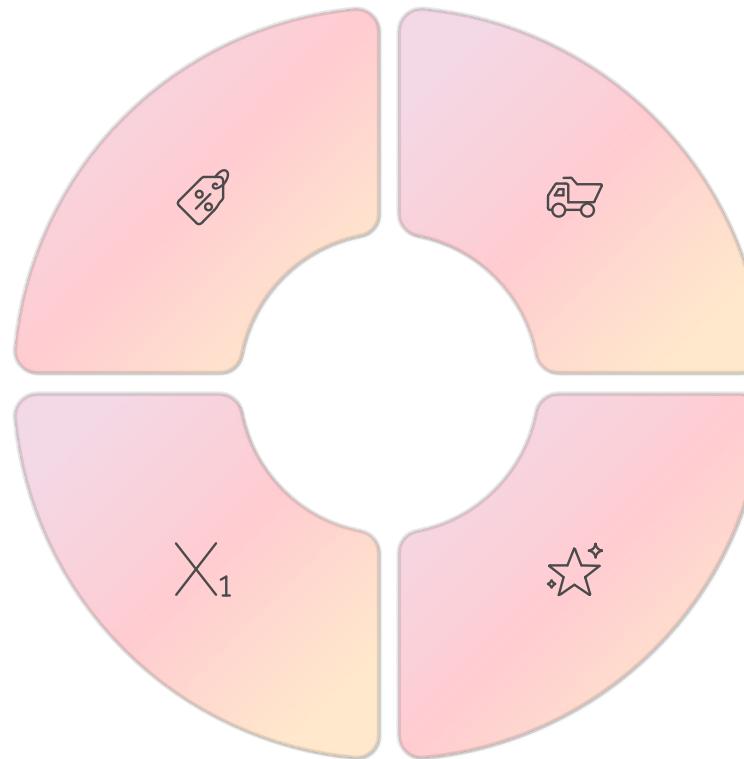
Customer Spending Patterns

High-Spending Discount Users

Customers using discounts who still spend above average purchase amounts

Subscriber Value

Subscribers generate higher average spend and total revenue versus non-subscribers



Shipping Type Impact

Express shipping users spend more than standard shipping customers

Top-Rated Products

Five products with highest average review ratings drive customer satisfaction

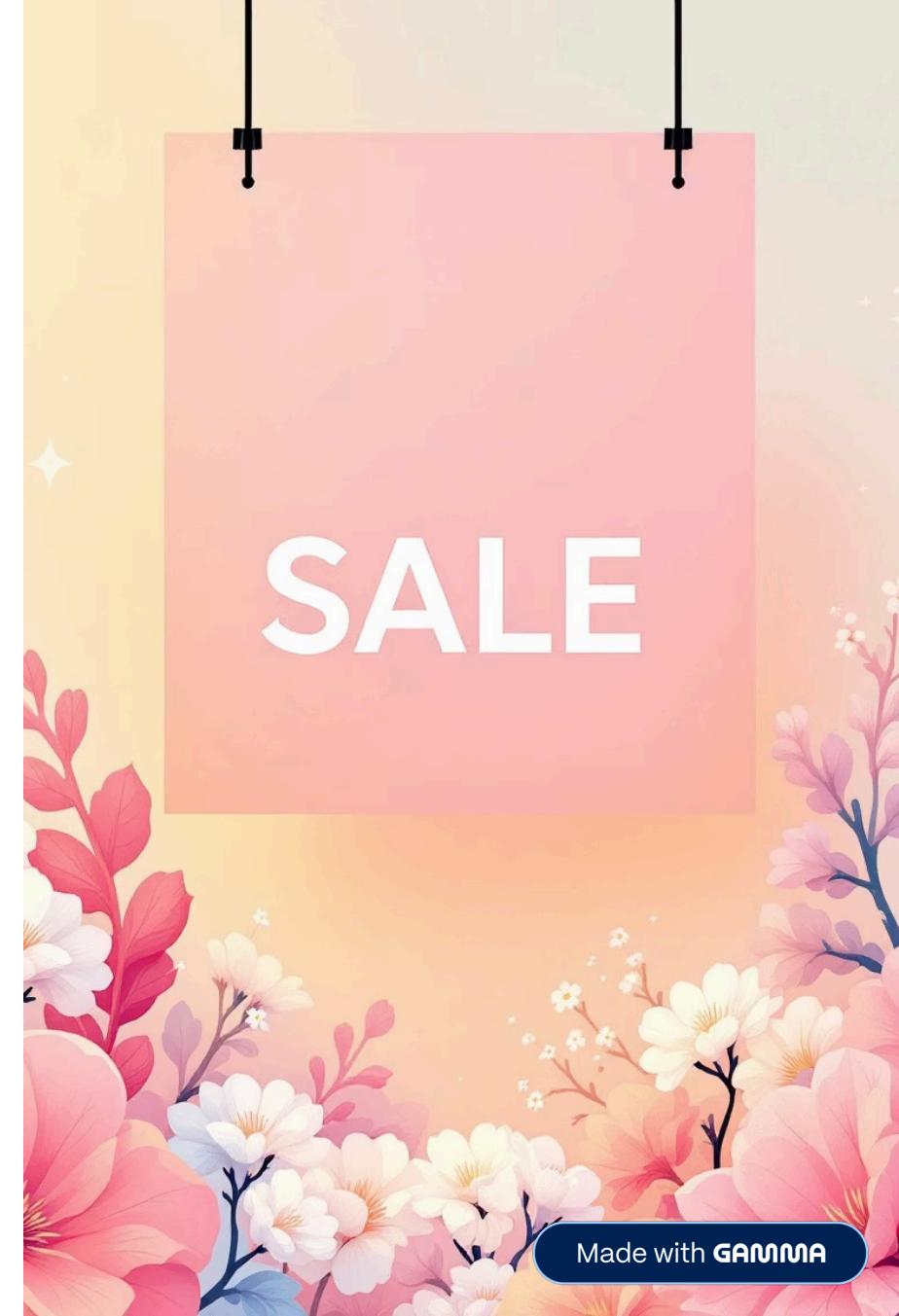
Discount Strategy Analysis

Discount Dependency

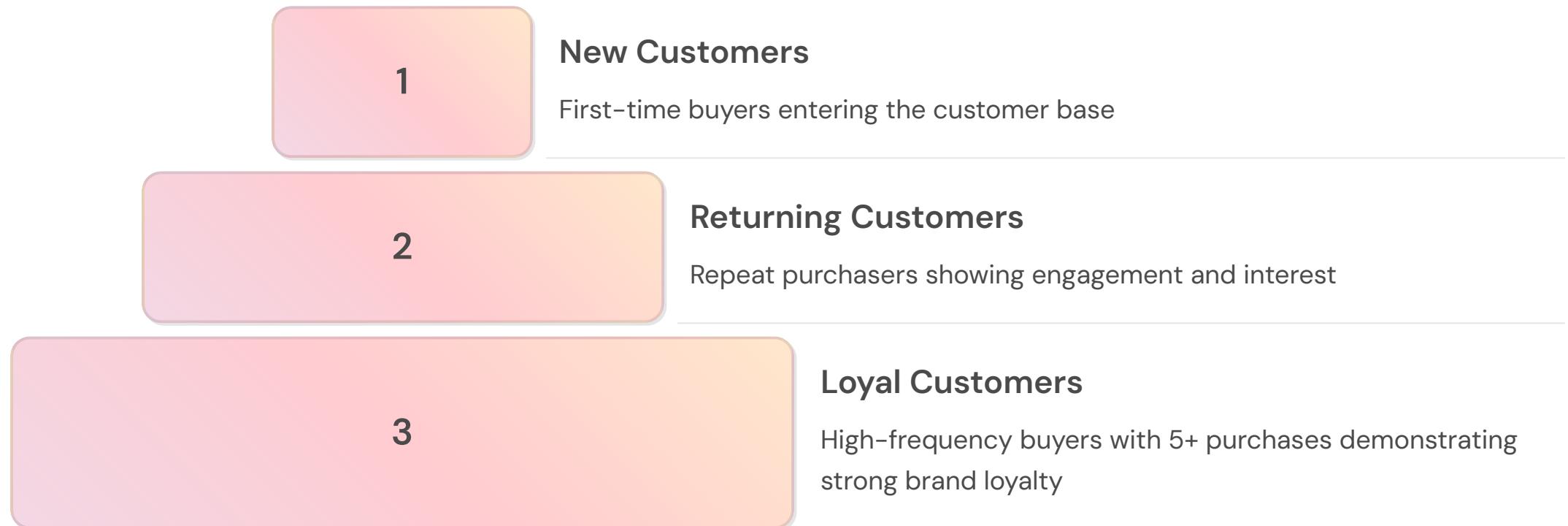
Five products show highest percentage of discounted purchases, indicating price sensitivity and potential margin concerns.

Strategic Opportunity

Balance sales boosts from discounts with margin control to optimize profitability without eroding brand value.



Customer Segmentation



Customers with more than 5 purchases are significantly more likely to subscribe, indicating strong correlation between repeat behavior and subscription adoption.



Product Performance by Category

Analysis identified top 3 products within each category to guide inventory and marketing decisions. High-performing products should be highlighted in campaigns and campaigns should emphasize best-selling items.

Interactive Power BI Dashboard

Comprehensive visual dashboard consolidating all insights for real-time monitoring of customer behavior, revenue trends, and segment performance across demographics and product categories.



Strategic Recommendations

Boost Subscriptions

Promote exclusive benefits for subscribers to increase recurring revenue

Loyalty Programs

Reward repeat buyers to move customers into the Loyal segment

Targeted Marketing

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

Product Positioning

Highlight top-rated and best-selling products in campaigns