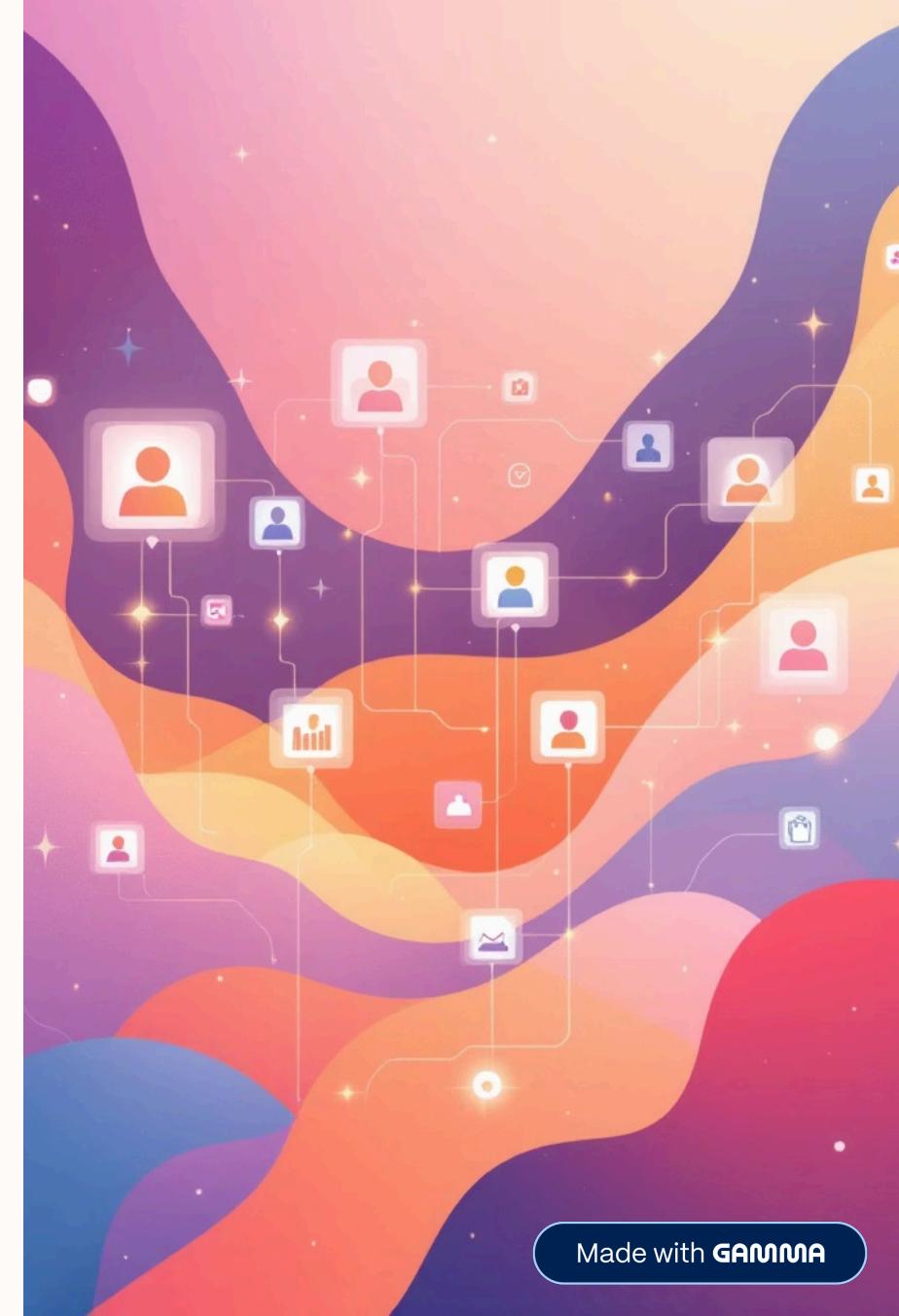


Unlocking Customer Behavior

Analyzing 3,900 purchases to reveal spending patterns, preferences, and subscription trends for strategic business decisions.



Project Overview

This project delves into customer shopping behavior using transactional data. Our goal is to uncover key insights into spending patterns, customer segments, product preferences, and subscription behavior.

3,900

Purchases Analyzed

18

Data Columns

Strategic

Business Decisions

Dataset Summary

Our dataset comprises 3,900 rows and 18 columns, capturing a wide range of customer and purchase details.

- Customer demographics (Age, Gender, Location, Subscription Status)
- Purchase details (Item, Category, Amount, Season, Size, Color)
- Shopping behavior (Discount, Promo Code, Previous Purchases, Frequency, Review, Shipping)



Exploratory Data Analysis (Python)

Data Loading

Initial Exploration

Missing Data Handling

Feature Engineering

We initiated our analysis with data preparation and cleaning in Python, ensuring data quality and readiness for in-depth insights.

Data Analysis using SQL

Structured analysis in PostgreSQL addressed key business questions, revealing insights into revenue, discounts, and product performance.

1

Revenue by Gender

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

2

High-Spending Discount Users

Identified customers using discounts but spending above average.

3

Top 5 Products by Rating

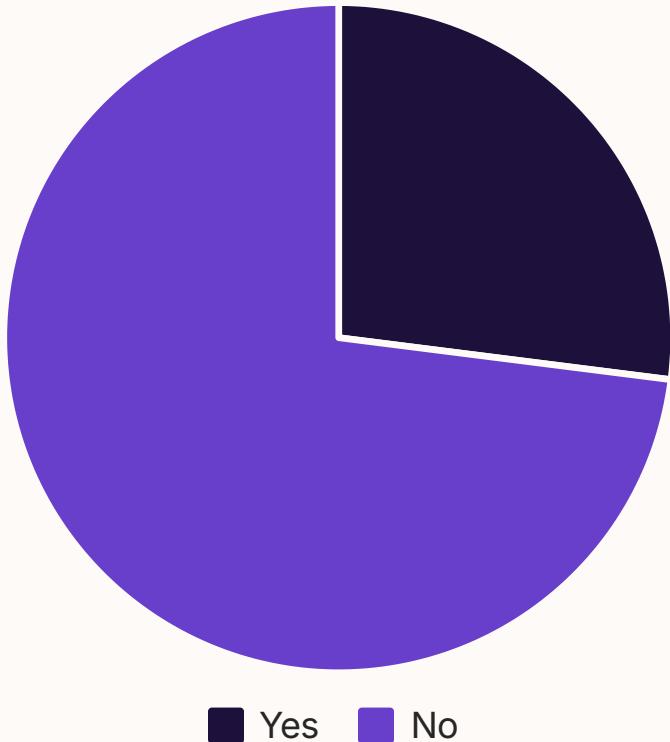
Gloves (3.86), Sandals (3.84), Boots (3.82), Hat (3.80), Skirt (3.78)

4

Shipping Type Comparison

Standard: \$58.46, Express: \$60.48

Subscription & Discount Insights



Subscribers vs. Non-Subscribers: Non-subscribers have a slightly higher average spend (\$59.87 vs \$59.49) and significantly higher total revenue (\$170,436 vs \$62,645).

Discount-Dependent Products: Hat (50%), Sneakers (49.66%), Coat (49.07%), Sweater (48.17%), Pants (47.37%) showed the highest discount rates.

Customer Segmentation & Top Products

Loyal

3,116 Customers

Returning

701 Customers

New

83 Customers

Customers were segmented into New, Returning, and Loyal based on their purchase history.

Top 3 Products per Category:

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

Repeat Buyers & Age Group Revenue



Repeat Buyers & Subscriptions: 958 repeat buyers (more than 5 purchases) are subscribers, while 2,518 are not. This indicates an opportunity to convert more repeat buyers into subscribers.

Revenue by Age Group: Young Adults (\$62,143) and Middle-aged (\$59,197) contribute the most revenue.

Gender

Female

Male

Category

Accessories

Clothing

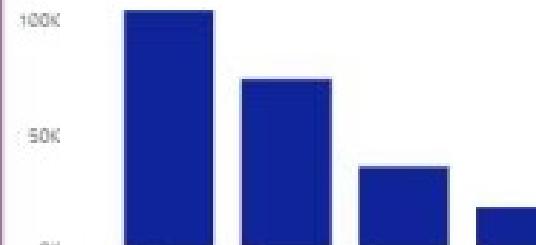
Footwear

Outerwear

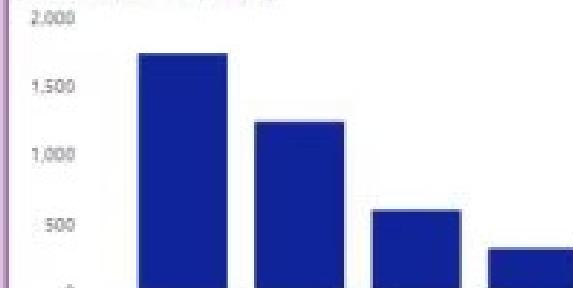
% of Customers by Subscription Status



Revenue by Category



Sales by Category



Interactive Power BI Dashboard

An interactive Power BI dashboard was developed to visualize these insights, offering dynamic exploration of customer behavior data.

Key Business Recommendations



Boost Subscriptions

Promote exclusive benefits to increase subscriber base.



Review Discount Policy

Optimize discount strategies to balance sales and margins.



Customer Loyalty Programs

Reward repeat buyers to foster loyalty and retention.



Targeted Marketing

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