

The background features a stylized illustration of a shopping cart icon in white and orange, set against a backdrop of abstract, flowing lines in shades of gold, orange, and dark navy. The lines form a network-like pattern, suggesting data flow or connectivity. The overall aesthetic is modern and professional.

Customer Shopping Behavior Analysis

Uncovering insights from transactional data to guide strategic business decisions.

Project Overview



Transactional Data

Analyzed 3,900 purchases across diverse product categories.



Key Insights

Identified spending patterns, customer segments, and product preferences.



Strategic Decisions

Aimed to inform and optimize business strategies.



Dataset Summary

Data Volume

3,900 rows and 18 columns of transactional data.

Key Features

Demographics, purchase details, and shopping behavior metrics.

Missing Data

37 values in 'Review Rating' column addressed.



Exploratory Data Analysis (Python)

01

Data Preparation

Loading, initial exploration, and handling missing values.

02

Column Standardization

Renamed columns to snake case for readability.

03

Feature Engineering

Created 'age_group' and 'purchase_frequency_days'.

04

Data Consistency

Verified and dropped redundant 'promo_code_used' column.

05

Database Integration

Loaded cleaned data into PostgreSQL for SQL analysis.

Data Analysis using SQL: Key Business Questions



Revenue by Gender

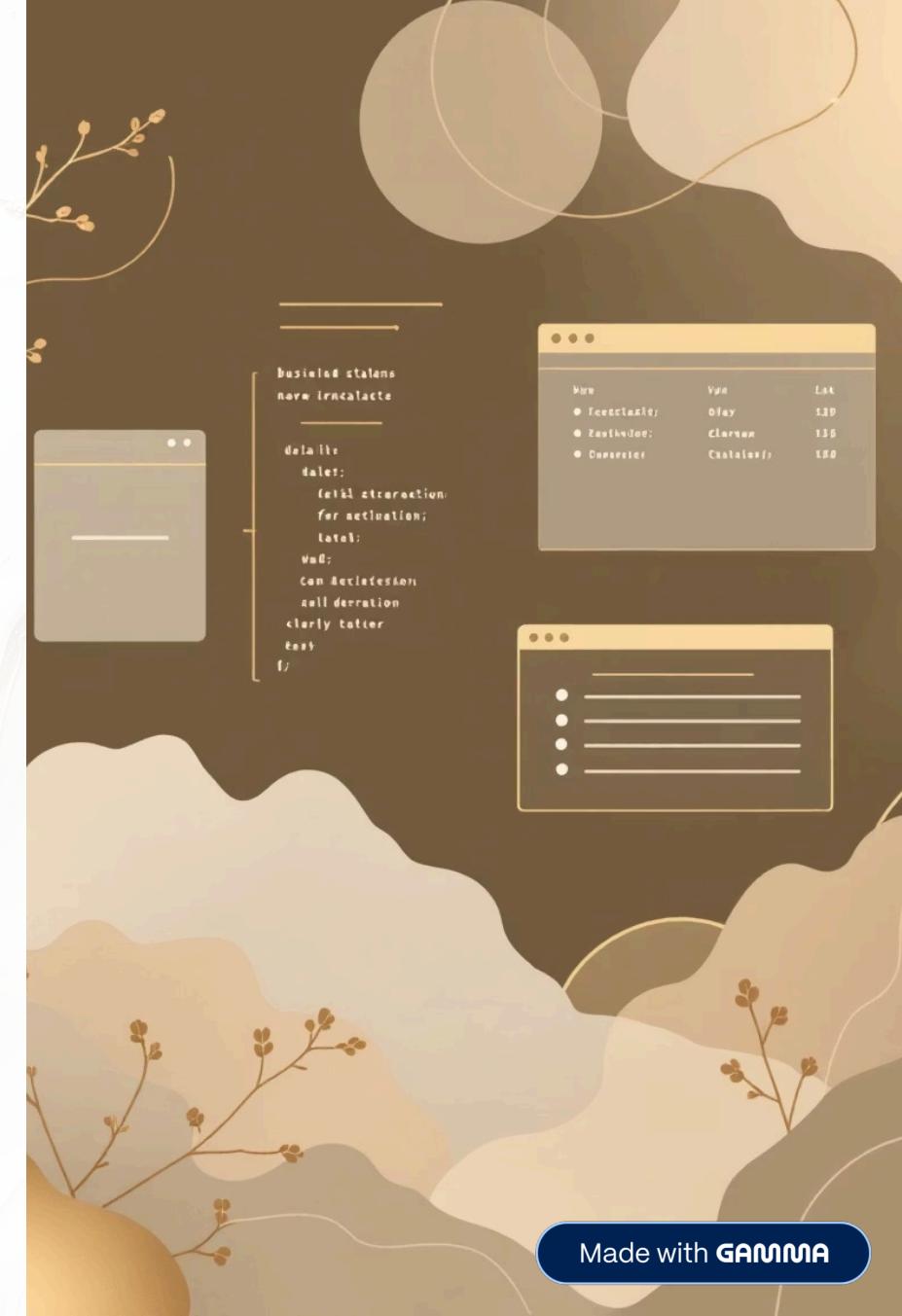
Compared total revenue from male vs. female customers.

Top 5 Products

Identified products with the highest average review ratings.

Shipping Comparison

Analyzed average purchase amounts for Standard vs. Express shipping.



SQL Insights: Spending & Subscriptions

1

High-Spending Discount Users

Customers using discounts but spending above average.

2

Subscribers vs. Non-Subscribers

Compared average spend and total revenue by subscription status.

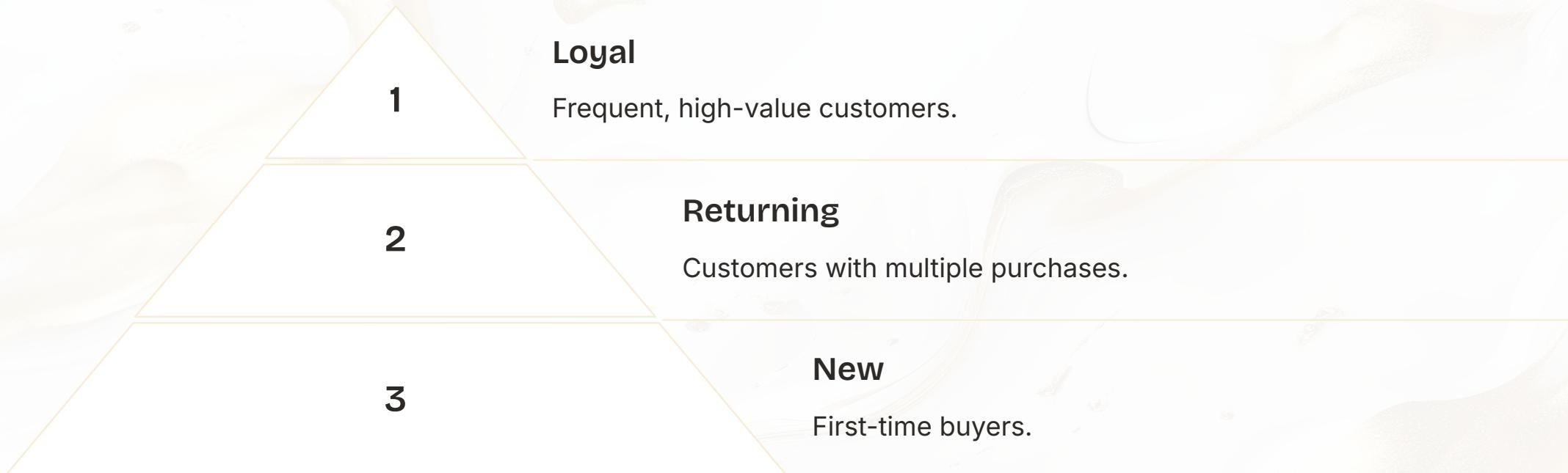
3

Discount-Dependent Products

Top 5 products with highest percentage of discounted purchases.



SQL Insights: Customer Segmentation



Customers were classified into New, Returning, and Loyal segments based on purchase history.

SQL Insights: Product & Age Group Performance

Top 3 Products per Category

Identified most purchased products within each category.

Repeat Buyers & Subscriptions

Analyzed likelihood of subscription for customers with >5 purchases.

Revenue by Age Group

Calculated total revenue contribution from each age group.





Interactive Dashboard in Power BI

Visualizing key insights for easy understanding and strategic planning.

Business Recommendations



Boost Subscriptions

Promote exclusive benefits to increase subscriber base.



Customer Loyalty Programs

Reward repeat buyers to foster loyalty and retention.



Review Discount Policy

Balance sales boosts with maintaining healthy profit margins.



Product Positioning

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



Targeted Marketing

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