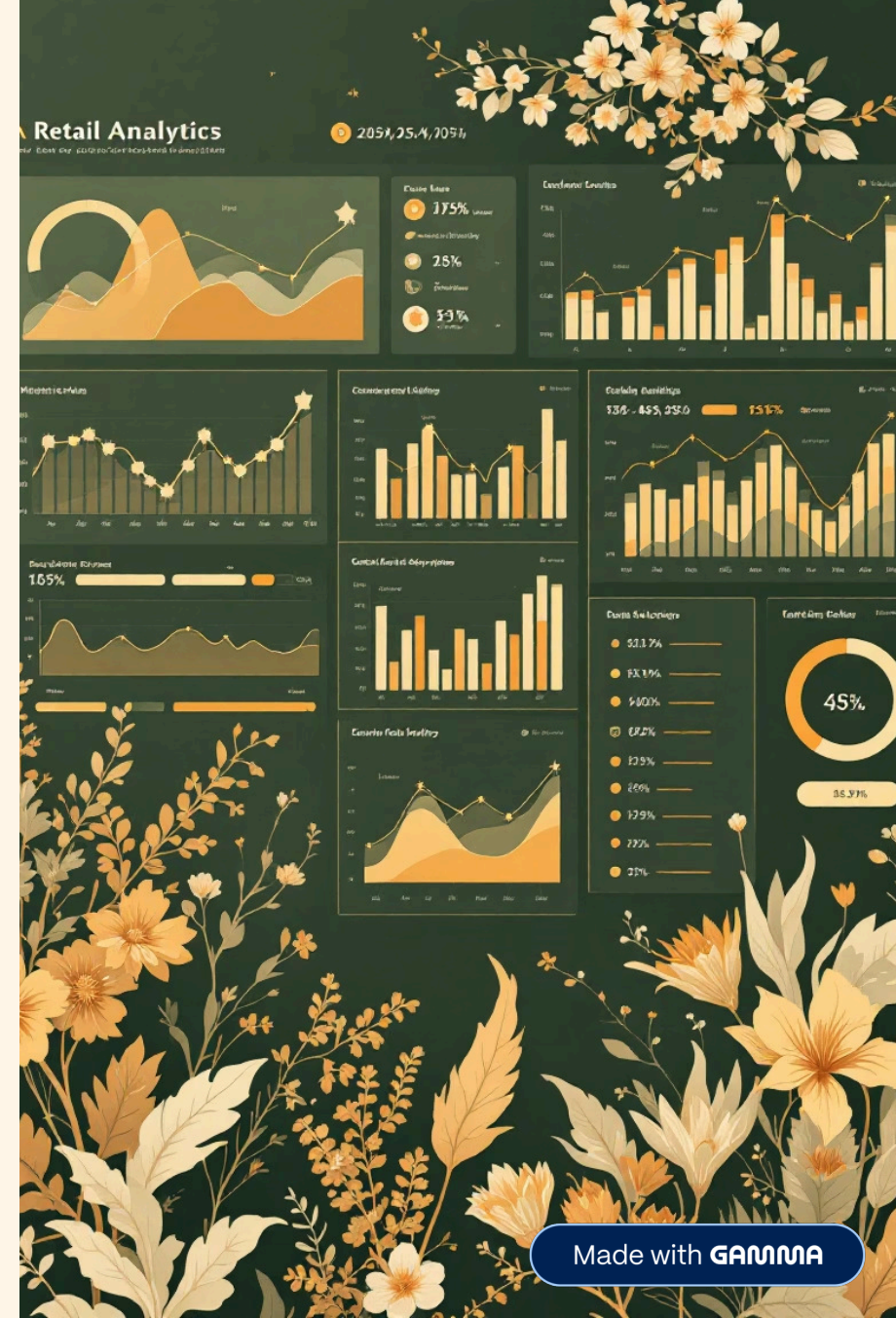# Customer Shopping Behavior Analysis

Uncovering insights from 3,900 purchases to drive strategic business decisions

Dataset Overview

3,900

Total Purchases

Transactions analyzed across all categories

18

Data Columns

Comprehensive customer and purchase attributes

50

Locations

Geographic diversity in customer base

25

Products

Unique items across four categories

Data Preparation & Python Analysis

01

Data Loading & Exploration

Imported dataset, checked structure with df.info() and summary statistics

02

Missing Data Handling

Imputed 37 missing Review Ratings using median by category

03

Feature Engineering

Created age_group and purchase_frequency_days columns

04

Database Integration

Connected to PostgreSQL for advanced SQL analysis

Revenue Insights by Gender

Male ■ Female ■

Male Customers Drive Revenue

Male customers generate 68% of total revenue, more than double female contribution

Strategic opportunity to increase female customer engagement

Top-Rated Products

Gloves

3.86 rating

Sandals

3.84 rating

Boots

3.82 rating

Hat

3.80 rating

Skirt

3.78 rating

Highest-rated products show consistent quality across accessories, footwear, and clothing

Shipping & Spending Patterns

Express Shipping

$60.48 average spend

Premium shipping correlates with higher purchase amounts

Standard Shipping

$58.46 average spend

Slight difference suggests shipping preference doesn't heavily impact spend

Customer Segmentation Analysis

1 New
83 customers

2 Returning
701 customers

3 Loyal
3,116 customers

80% of customer base classified as loyal - strong retention foundation

Subscription Impact

Subscribers

1,053 customers

$59.49 avg spend

$62,645 total revenue

Non-Subscribers

2,847 customers

$59.87 avg spend

$170,436 total revenue

Repeat Buyers

958 subscribers with 5+ purchases

Subscription drives loyalty
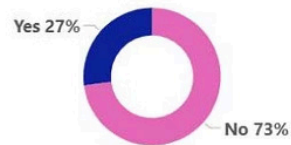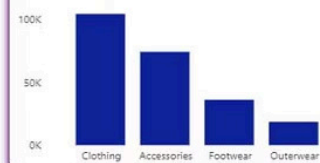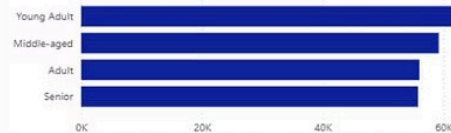
Power BI Dashboard

Interactive visualization bringing all insights together for actionable decision-making

Strategic Recommendations

Boost Subscriptions
Promote exclusive benefits to convert non-subscribers

Customer Loyalty Programs
Reward repeat buyers to strengthen loyal segment

Review Discount Policy
Balance sales growth with margin control - 839 high spenders used discounts

Product Positioning
Highlight top-rated items in marketing campaigns

Targeted Marketing
Focus on high-revenue age groups and express-shipping users