Customer Shopping Behavior Analysis

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

Dataset Overview

3,900
Total Purchases
Transactions analyzed

18
Data Points
Features per transaction

37
Missing Values
Review ratings imputed

Customer Data

- Demographics & location
- Subscription status
- Purchase history

Transaction Data

- Product details & pricing
- Discounts & promotions
- Ratings & shipping

Data Preparation Process

Data Loading

Imported dataset using pandas, explored structure with df.info() and summary statistics

Missing Data Handling

Imputed Review Rating nulls using median rating per product category

Feature Engineering

Created age_group bins and purchase_frequency_days from transaction data

Database Integration

Connected to PostgreSQL and loaded cleaned data for SQL analysis

Revenue Insights

Gender Comparison

Male vs. female customer revenue analyzed

Shipping Impact

Express shipping users spend more on average

Age Groups

Revenue contribution varies significantly by age

Made with GAMMA

Subscription Analysis

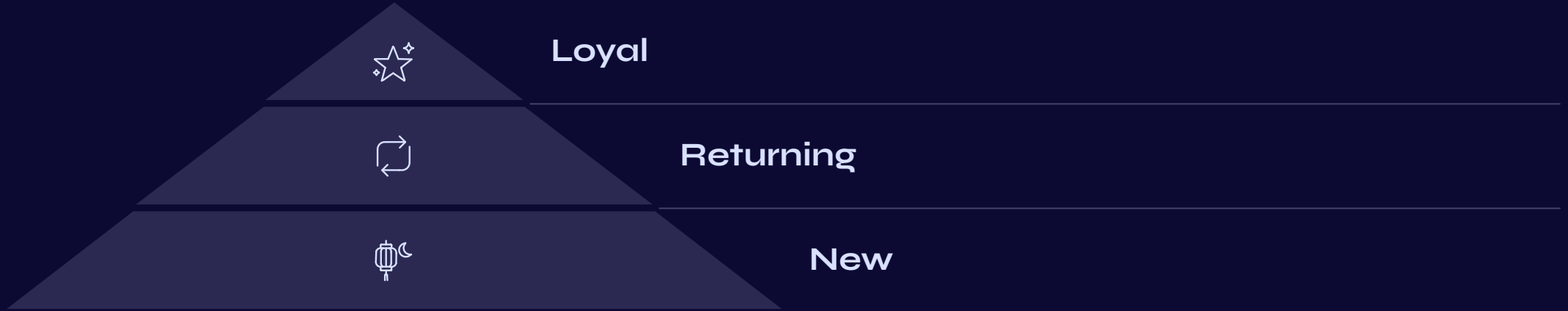## Subscribers

Higher average spend per transaction

Non-Subscribers

Lower spend but larger customer base

Repeat Buyers

Customers with 5+ purchases more likely to subscribe

Customer Segmentation

Loyal

Returning

New

Classified based on purchase history to identify growth opportunities

Product Performance

Top-Rated Products

Identified 5 products with highest average review ratings

Category Leaders

Top 3 most purchased products within each category

Discount Dependency

5 products with highest percentage of discounted purchases

Discount Strategy Insights

High-Spending Discount Users

Customers using discounts but spending above average

Margin Impact

Balance sales boosts with profitability control

Power BI Dashboard

Interactive visualization presenting key insights across customer segments, revenue trends, and product performance

Strategic Recommendations

Boost Subscriptions
Promote exclusive benefits for subscribers

Loyalty Programs
Reward repeat buyers to increase retention

Review Discounts
Balance sales growth with margin control

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

Product Positioning
Highlight top-rated and best-selling products