Customer Shopping Behavior Analysis

Uncovering insights from transactional data to guide strategic business decisions.

Project Overview & Dataset

Project Goal
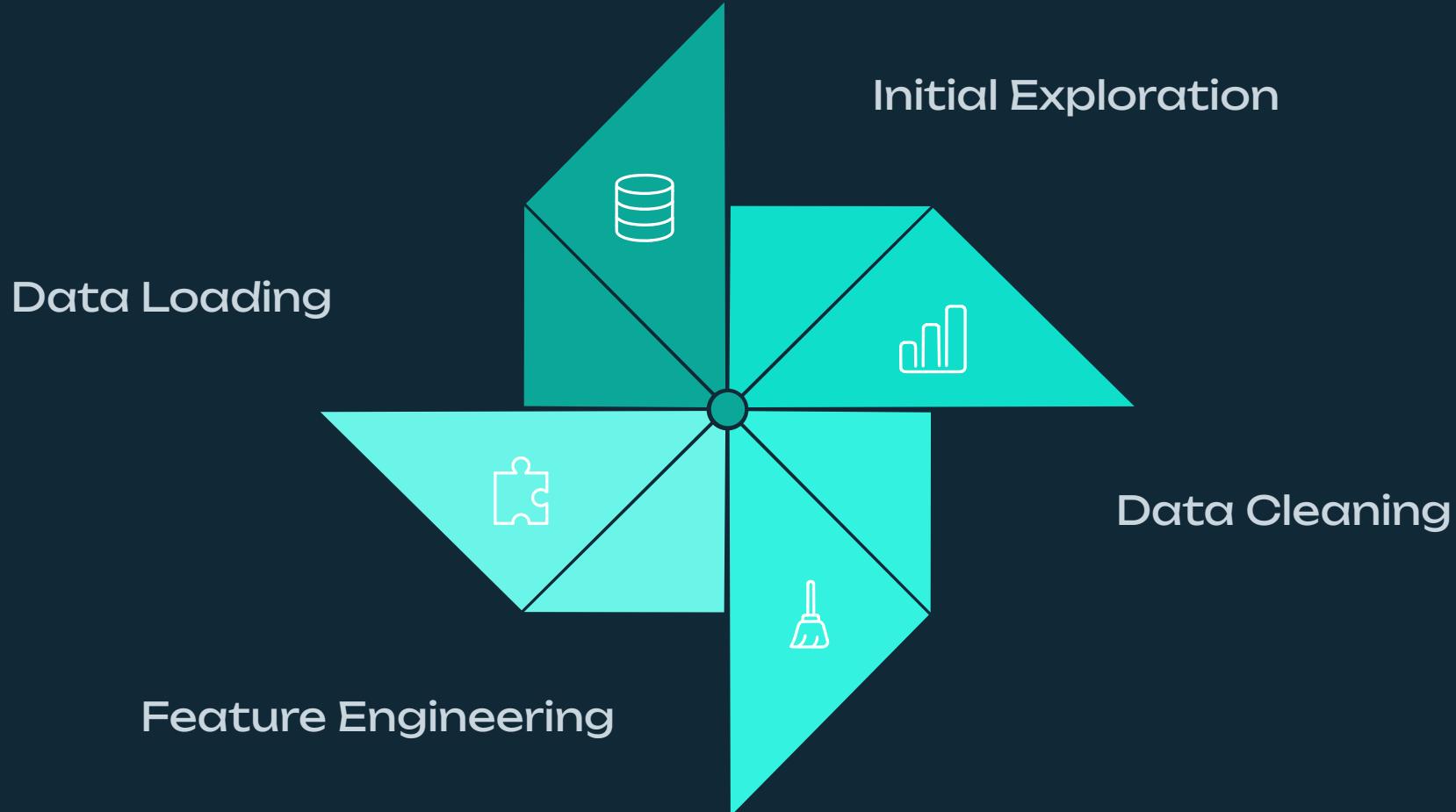
Analyze 3,900 purchases to understand spending, segments, and preferences.

Guide strategic business decisions.

Dataset Snapshot

- 3,900 Rows, 18 Columns
- Key Features: Demographics, Purchase Details, Shopping Behavior
- Missing Data: 37 values in Review Rating

Exploratory Data Analysis (Python)

Initial Exploration

Data Loading

Data Cleaning

Feature Engineering

Our Python-based EDA involved data loading, initial exploration, handling missing values, standardizing columns, and engineering new features for deeper insights.

Data Analysis (SQL) - Key Insights

Revenue by Gender

Male: $157,890

Female: $75,191

High-Spending Discount Users

Identified 839 customers.

Top 5 Products by Rating

Gloves, Sandals, Boots, Hat, Skirt.

Shipping Type Comparison

Express: $60.48 avg.

Standard: $58.46 avg.

SQL Insights: Subscriptions & Discounts
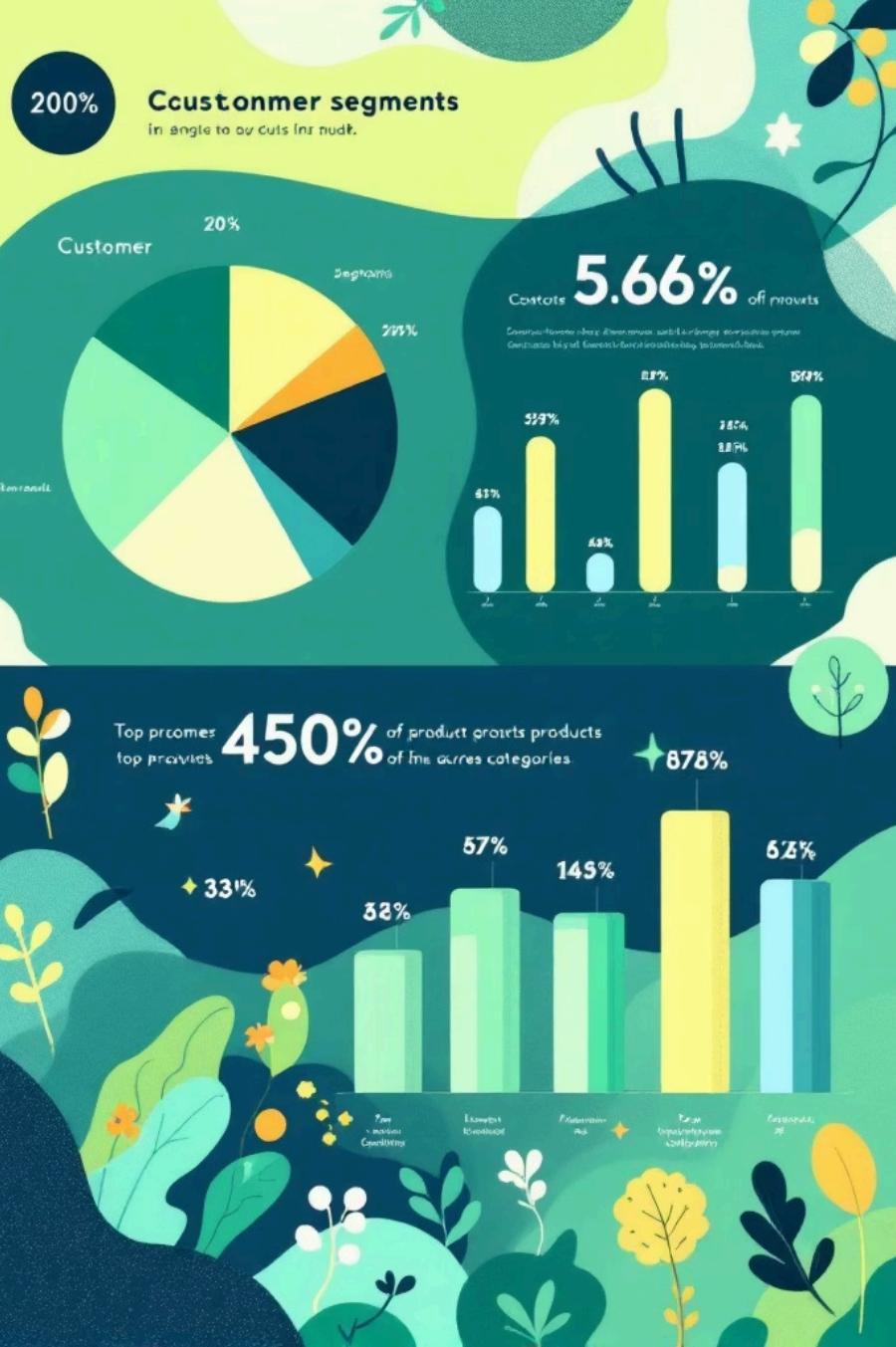
Subscribers vs. Non-Subscribers

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.

Discount-Dependent Products

- Hat: 50% discounted
- Sneakers: 49.66% discounted
- Coat: 49.07% discounted
- Sweater: 48.17% discounted
- Pants: 47.37% discounted

Customer Segmentation & Product Ranking
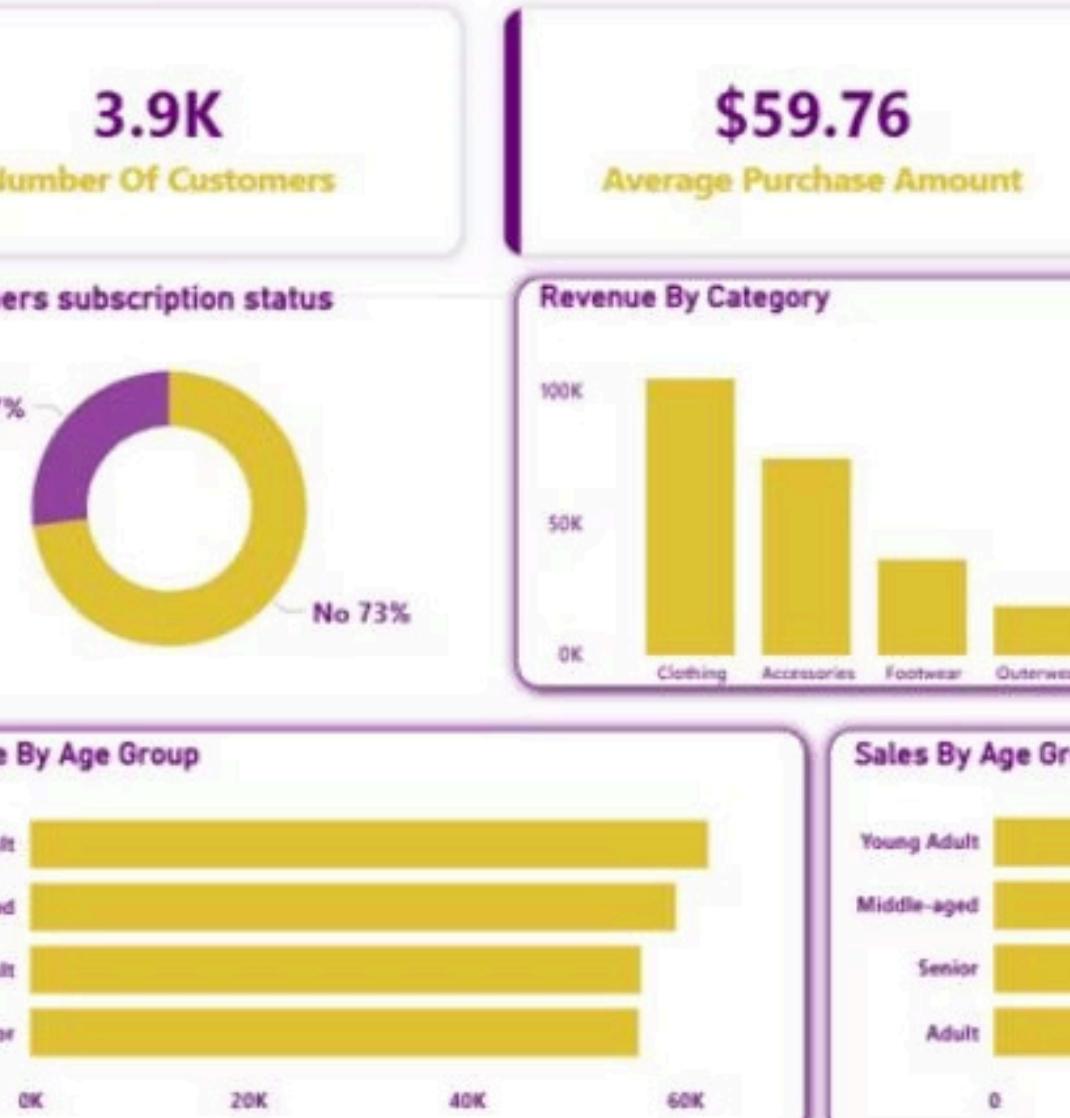
Customer Segments

- Loyal: 3,116 customers
- Returning: 701 customers
- New: 83 customers

Top Products per Category

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

Power BI Dashboard: Visualizing Insights

Interactive dashboard presenting key metrics: customer count, average purchase, review rating, and detailed breakdowns by category and age group.

Business Recommendations

Boost Subscriptions

Incentivize new sign-ups.

Develop Loyalty Programs

Reward repeat buyers.

Prioritize High-Revenue Categories

Focus marketing efforts.

Target High-Spending Age Groups

Tailor campaigns.

Balance Discounts & Margins

Optimize profitability.