Customer Shopping Behavior Analysis

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

Dataset Overview

3,900 Purchases

Transactions analyzed

18 Columns

Demographics, purchase details, and behavioral data are included in each record.

37 Missing Values

Identified within the 'Review Rating' column, indicating areas for data imputation or further investigation.

Data Preparation & Cleaning

01

Data Loading

Imported dataset using pandas

02

Initial Exploration

Checked structure and summary statistics

03

Missing Data

Imputed Review Rating using median by category

04

Feature Engineering

Created age groups and purchase frequency metrics

05
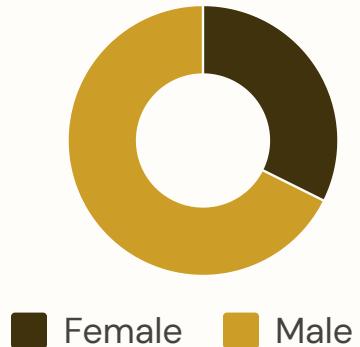
Database Integration

Loaded cleaned data into PostgreSQL

Revenue Insights by Demographics
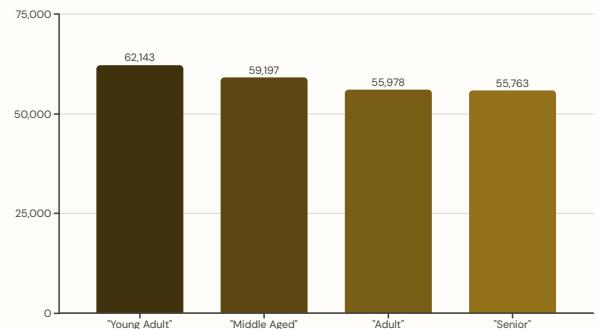
Gender Split

Compared total revenue generated by male vs. female customers
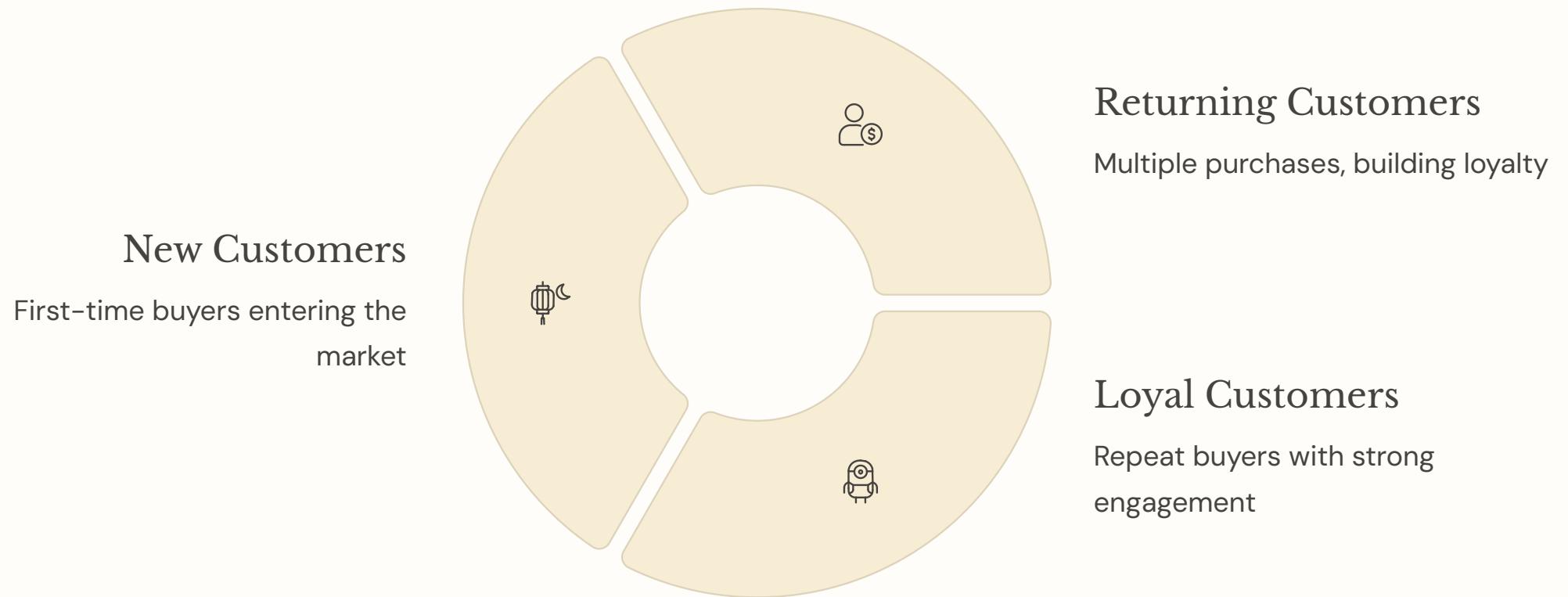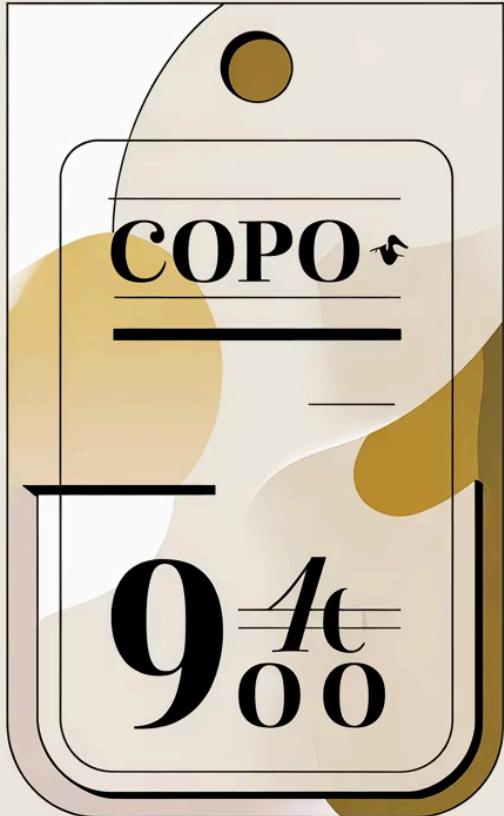
Age Groups

Revenue contribution varies significantly across age segments

■ Female ■ Male

62,143 — 59,197 — 55,978 — 55,763

"Young Adult" "Middle Aged" "Adult" "Senior"

75,000

50,000

25,000

0

Customer Segmentation Strategy

Returning Customers
Multiple purchases, building loyalty

New Customers
First-time buyers entering the market

Loyal Customers
Repeat buyers with strong engagement

Subscription & Discount Behavior

Subscribers vs. Non-Subscribers

Subscribers show higher average spend and total revenue contribution

High-Spending Discount Users

Identified customers using discounts while spending above average

Discount-Dependent Products

5 products with highest percentage of discounted purchases

Product Performance & Ratings

Top Rated Products

Highest average review ratings drive customer satisfaction

Top Products by Category

Most purchased items within each product category

Shipping & Purchase Patterns

Standard Shipping
Average purchase amount comparison

Express Shipping
Higher-value orders, premium customers

Interactive Power BI Dashboard

Comprehensive visual analytics platform presenting all key insights and metrics in real-time

Strategic Recommendations

1 **Boost Subscriptions**

Promote exclusive benefits for subscribers

2 **Loyalty Programs**

Reward repeat buyers to move into "Loyal" segment

3 **Review Discount Policy**

Balance sales boosts with margin control

4 **Targeted Marketing**

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