

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 Summary

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

Exploratory Data Analysis (Python)

01

Data Preparation

Loading, initial exploration, and missing data handling (median imputation).

03

Data Consistency

Verified and dropped redundant columns (e.g., promo_code_used).

02

Feature Engineering

Created age groups and purchase frequency. Standardized column names.

04

Database Integration

Loaded cleaned data into PostgreSQL for SQL analysis.

Data Analysis (SQL)

Key Insights

- Revenue by Gender: Male (\$157,890) vs. Female (\$75,191)
- High-Spending Discount Users identified
- Top 5 Products by Rating (e.g., Gloves, Sandals)
- Shipping Type Comparison: Express (\$60.48) vs. Standard (\$58.46)



SQL Analysis: Segmentation & Age

Customer Segmentation

- Loyal: 3116 customers
- Returning: 701 customers
- New: 83 customers

Revenue by Age Group

- Young Adult: \$62,143
- Middle-Aged: \$59,197
- Senior: \$55,763
- Adult: \$55,978

SQL Analysis: Product Categories

1

Accessories

- Jewelry (171 orders)
- Sunglasses (161 orders)
- Belt (161 orders)

2

Clothing

- Blouse (171 orders)
- Pants (171 orders)
- Shirt (169 orders)

3

Footwear

- Sandals (160 orders)
- Shoes (150 orders)
- Sneakers (145 orders)

4

Outerwear

- Jacket (163 orders)
- Coat (161 orders)

Customer Behavior Dashboard

\$59.76

Average Purchase Amount

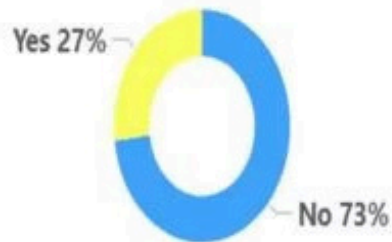
3.75

Average review Rating

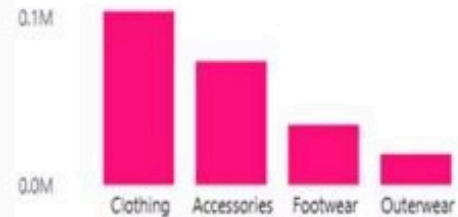
3.9K

Count of custo

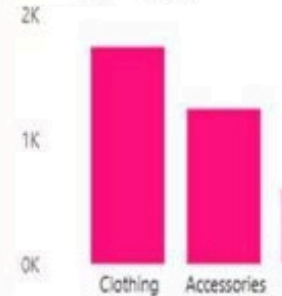
% of Customer by Subscription Status



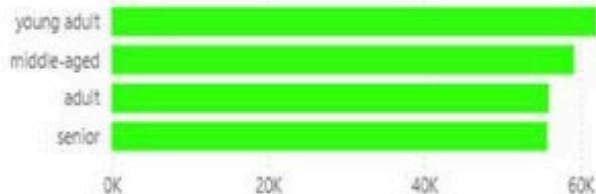
Revenue by Category



Sales by Category



Total revenue by Age_Group



Sum of customer_id by age_group



Interactive Dashboard (Power BI)

Visual presentation of insights for easy understanding and decision-making.

Key Business Recommendations

Boost Subscriptions

Promote exclusive benefits.

Customer Loyalty

Reward repeat buyers.

Review Discount Policy

Balance sales with margin.

Product Positioning

Highlight top-rated products.

Targeted Marketing

Focus on high-revenue age groups.