

Customer Shopping Behavior Analysis

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





Dataset Overview

3,900

Total Purchases

Transactions
analyzed

18

Data Points

Features per
transaction

50

Locations

Geographic coverage

25

Products

Items tracked

Data Preparation & Cleaning

01

Data Loading

Imported dataset using pandas, explored structure with `df.info()` and `.describe()`

02

Missing Data

Imputed 37 missing Review Rating values using median by category

03

Feature Engineering

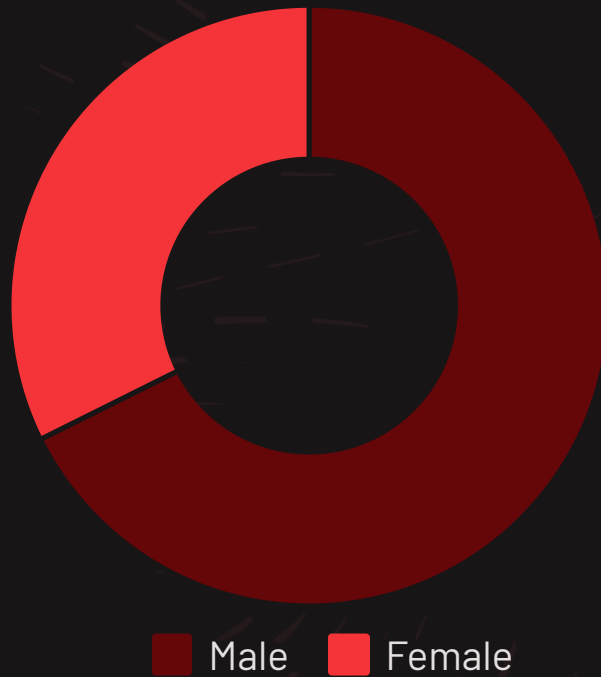
Created `age_group` bins and `purchase_frequency_days` columns

04

Database Integration

Connected to PostgreSQL for advanced SQL analysis

Revenue by Gender



Key Finding

Male customers generate **68%** of total revenue

Female segment represents significant growth opportunity

Top Products & Customer Ratings



Gloves

Rating: 3.86



Sandals

Rating: 3.84



Boots

Rating: 3.82



Hat

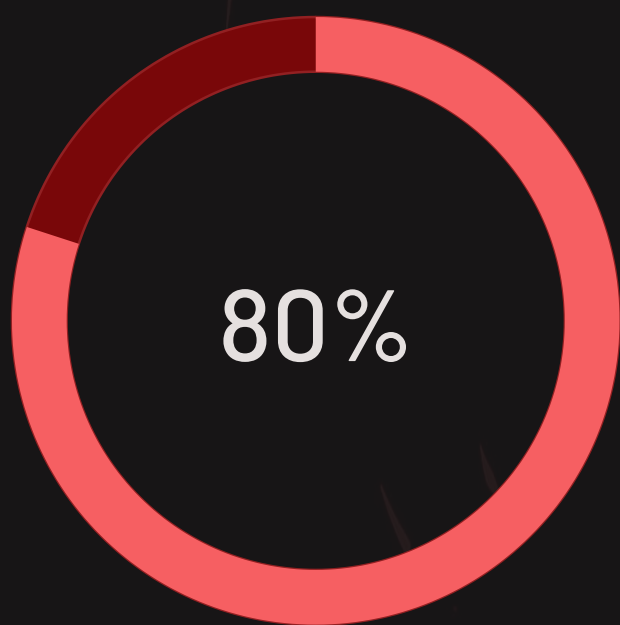
Rating: 3.80



Skirt

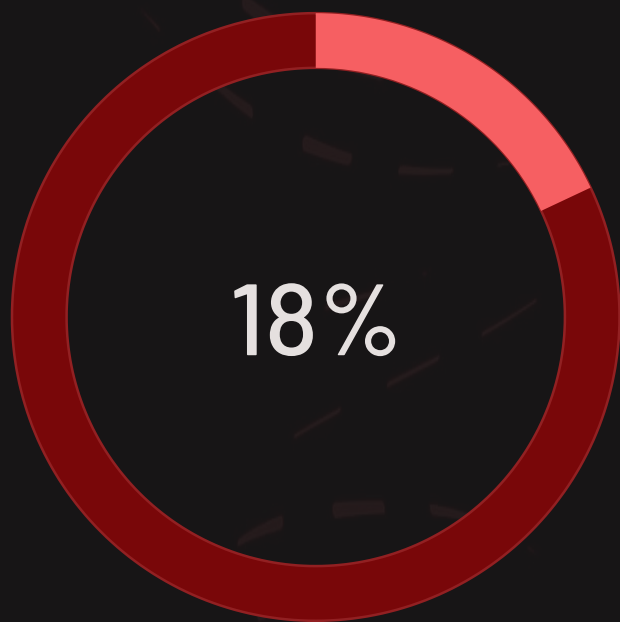
Rating: 3.78

Customer Segmentation Insights



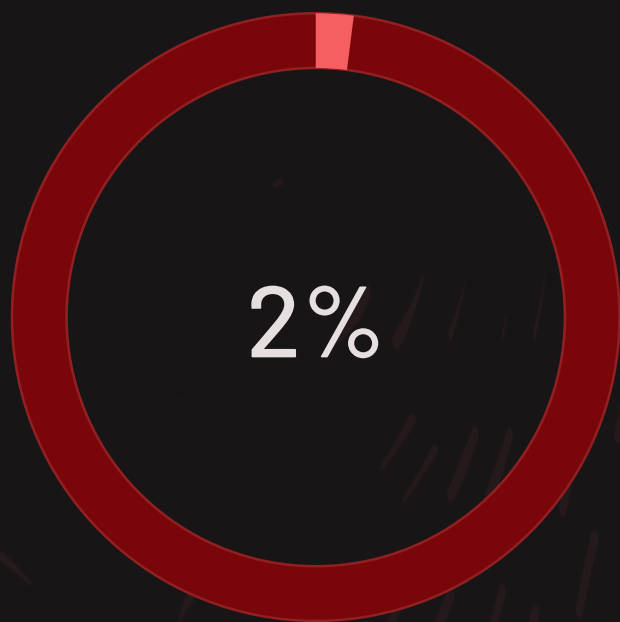
Loyal Customers

3,116 repeat buyers



Returning

701 customers



New

83 first-time buyers

Strong Loyalty Base

Majority of customers are repeat buyers, indicating strong retention

Focus on converting new customers into returning segment



Subscription vs. Non-Subscription

Subscribers

1,053 customers

Avg spend: **\$59.49**

Total revenue: **\$62,645**

Non-Subscribers

2,847 customers

Avg spend: **\$59.87**

Total revenue: **\$170,436**

Similar spending patterns, but **958 repeat buyers** with 5+ purchases are subscribers—opportunity to convert high-frequency shoppers



50%
OFF

Discount Strategy Analysis

High-Value Discount Users

839 customers used discounts but spent above average

Discounts drive volume without sacrificing quality buyers

Top Discount-Dependent Products

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

Customer Behavior Dashboard

K

customers

\$59.76

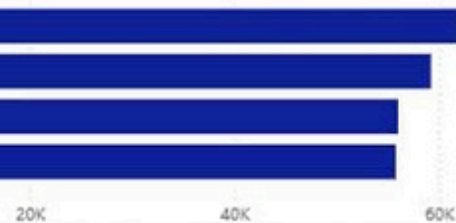
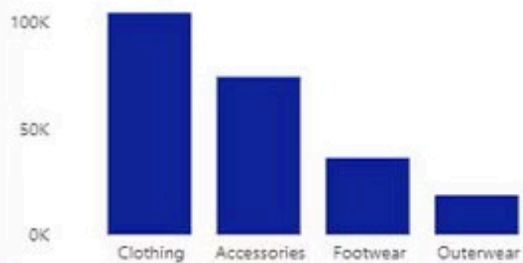
Average Purchase Amount

Description Status



No 73%

Revenue by Category



Sales by Age Group



Power BI Dashboard

Interactive visualization bringing all insights together for real-time decision making

Strategic Recommendations

Boost Subscriptions

Promote exclusive benefits to convert high-frequency shoppers

Loyalty Programs

Reward repeat buyers to strengthen retention

Review Discounts

Balance sales boosts with margin control

Targeted Marketing

Focus on high-revenue age groups and express shipping users