

# Customer Shopping Behavior Analysis

Uncovering insights from transactional data to guide strategic business decisions.



# Project Overview

## Data Source

3,900 purchases across categories.

## Goal

Uncover spending patterns, segments, preferences.

## Impact

Guide strategic business decisions.



# Dataset Summary

## Key Features

- Customer demographics
- Purchase details
- Shopping behavior

## Data Points

- Rows: 3,900
- Columns: 18
- Missing Data: 37 values in Review Rating





# Exploratory Data Analysis (Python)

01

## Data Loading & Exploration

Imported dataset, checked structure and summary statistics.

02

## Data Cleaning

Handled missing values, standardized column names.

03

## Feature Engineering

Created age groups, purchase frequency.

04

## Database Integration

Loaded cleaned data to PostgreSQL for SQL analysis.



# Data Analysis (SQL)

Structured analysis in PostgreSQL for key business questions.

1

## Revenue by Gender

Female: \$75,191, Male: \$157,890

2

## High-Spending Discount Users

839 customers spent above average with discounts.

3

## Top 5 Products by Rating

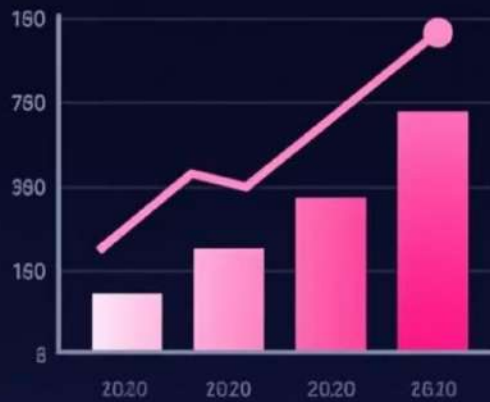
Gloves, Sandals, Boots, Hat, Skirt.

4

## Shipping Type Comparison

Express: \$60.48 avg, Standard: \$58.46 avg.

# SQL Insights: Customer Behavior



Loyal vs



Loyal vs

New Customers



## Subscribers vs. Non-Subscribers

Non-subscribers higher total revenue (\$170,436).



## Discount-Dependent Products

Hat (50%), Sneakers (49.66%), Coat (49.07%).



## Customer Segmentation

Loyal: 3116, Returning: 701, New: 83.



# SQL Insights: Product & Age

## Top 3 Products per Category

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

## Repeat Buyers & Subscriptions

2518 non-subscribers, 958 subscribers among repeat buyers.

## Revenue by Age Group

Young Adult: \$62,143, Middle-aged: \$59,197.



# Power BI Dashboard

Interactive dashboard for visual insights.

## Customer Behavior Dashboard

3.9K

Number of Customers

\$59.76

Average Purchase Amount

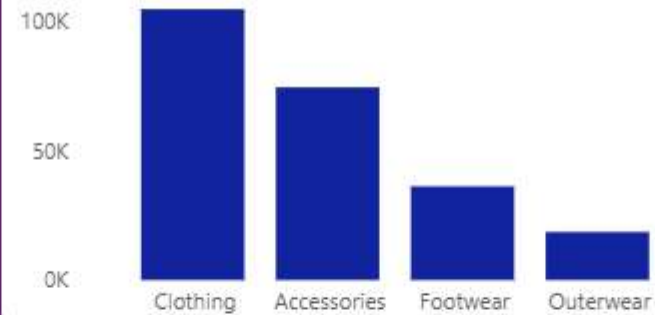
3.75

Average Review Rating

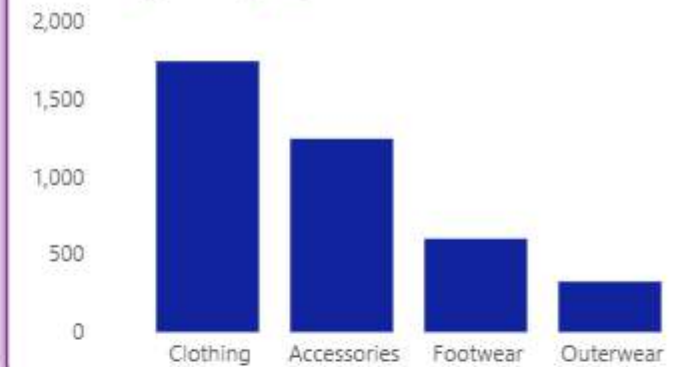
% of Customers by Subscription Status



Revenue by Category



Sales by Category



Revenue by Age Group



Sales by Age Group





# Dashboard Key Metrics & Filters

## Key Metrics

- 3.9K Customers
- \$59.76 Avg. Purchase Amount
- 3.75 Avg. Review Rating

## Filters

- Subscription Status
- Gender
- Category
- Shipping Type

### Subscription Status

☐ No

☐ Yes

### Gender

☐ Female

☐ Male

### Category

### Shipping Type

- ☐ 2-Day Shipping
- ☐ Express
- ☐ Free Shipping
- ☐ Next Day Air
- ☐ Standard
- ☐ Store Pickup

# Business Recommendations

## → Boost Subscriptions

Promote exclusive benefits.

## → Customer Loyalty Programs

Reward repeat buyers.

## → Review Discount Policy

Balance sales with margin control.

## → Product Positioning

Highlight top-rated products.

## → Targeted Marketing

Focus on high-revenue age groups.