

# Customer Shopping Behavior Analysis

Uncovering insights from transactional data to guide strategic business decisions.



# Project Overview



## Analyze 3,900 Purchases

Transactional data across diverse product categories.



## Uncover Key Insights

Spending patterns, customer segments, product preferences, and subscription behavior.



## Guide Decisions

Inform strategic business choices with data-driven findings.

# Dataset Summary: Key Features

**Rows:** 3,900

**Columns:** 18

- Customer demographics (Age, Gender, Location, Subscription Status)
- Purchase details (Item, Category, Amount, Season, Size, Color)
- Shopping behavior (Discount, Promo Code, Previous Purchases, Frequency, Review Rating, Shipping Type)



❏ Missing Data: 37 values in Review Rating column.

# Exploratory Data Analysis in Python

01

## Data Loading & Exploration

Imported dataset, checked structure and summary statistics.

02

## Missing Data Handling

Imputed missing Review Rating values using median per category.

03

## Column Standardization

Renamed columns to snake\_case for readability.

04

## Feature Engineering

Created age\_group and purchase\_frequency\_days columns.

05

## Database Integration

Loaded cleaned data into PostgreSQL for SQL analysis.

# Key Business Insights from SQL Analysis

1

## Revenue by Gender

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

2

## High-Spending Discount Users

Identified customers using discounts but spending above average.

3

## Top 5 Products by Rating

Gloves, Sandals, Boots, Hat, Skirt.

4

## Shipping Type Comparison

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

# Subscription & Discount Dynamics

## Subscribers vs. Non-Subscribers

Yes	1053	59.49	62645
No	2847	59.87	170436

## Discount-Dependent Products

Top 5 products with highest percentage of discounted purchases:

- Hat (50.00%)
- Sneakers (49.66%)
- Coat (49.07%)
- Sweater (48.17%)
- Pants (47.37%)





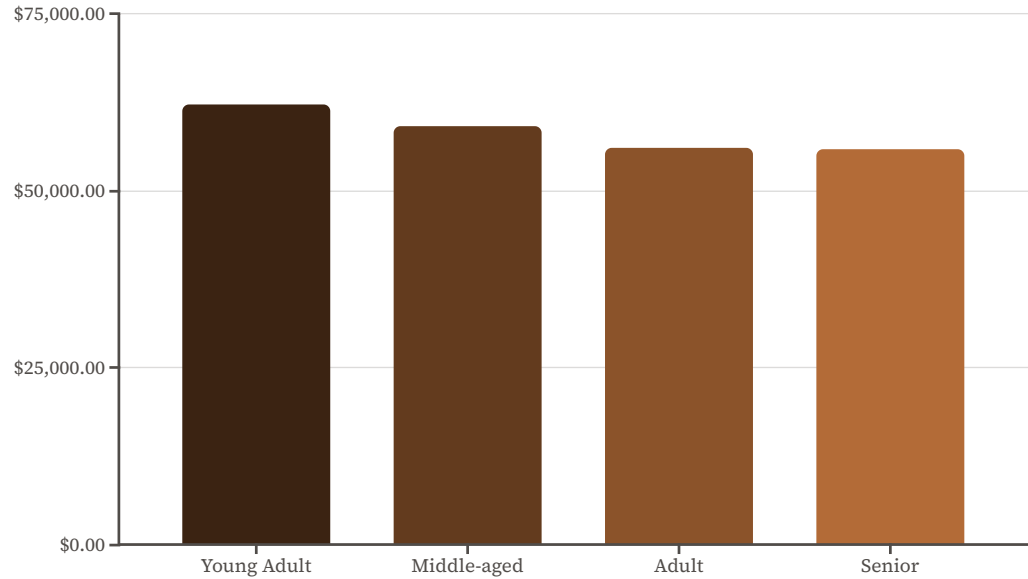
# Customer Segmentation & Age Group Revenue

## Customer Segments

Loyal	3116
Returning	701
New	83



## Revenue by Age Group



# Top Products Per Category

## Accessories

Jewelry (171), Sunglasses (161), Belt (161)

## Clothing

Blouse (171), Pants (171), Shirt (169)

## Footwear

Sandals (160), Shoes (150), Speakers (145)





# Interactive Dashboard in Power BI

Visualizing customer behavior for actionable insights.



Customers



Avg. Purchase



Avg. Review

# Business Recommendations



## Boost Subscriptions

Promote exclusive benefits to increase subscriber base.



## Customer Loyalty Programs

Reward repeat buyers to foster loyalty and move them to "Loyal" segment.



## Review Discount Policy

Balance sales boosts with margin control for sustainable growth.



## Targeted Marketing

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