



# 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 Columns

Features tracked

50

Locations

Geographic coverage

25

Products

Items purchased

## Customer Demographics

- Age, Gender, Location
- Subscription Status

## Purchase Details

- Category, Amount, Season
- Size, Color preferences

## Shopping Behavior

- Discounts & Promo Codes
- Review Ratings, Shipping

# Data Preparation in Python

01

## Data Loading & Exploration

Imported dataset, checked structure with `df.info()` and summary statistics

02

## Missing Data Handling

Imputed 37 missing Review Ratings using median by product category

03

## Feature Engineering

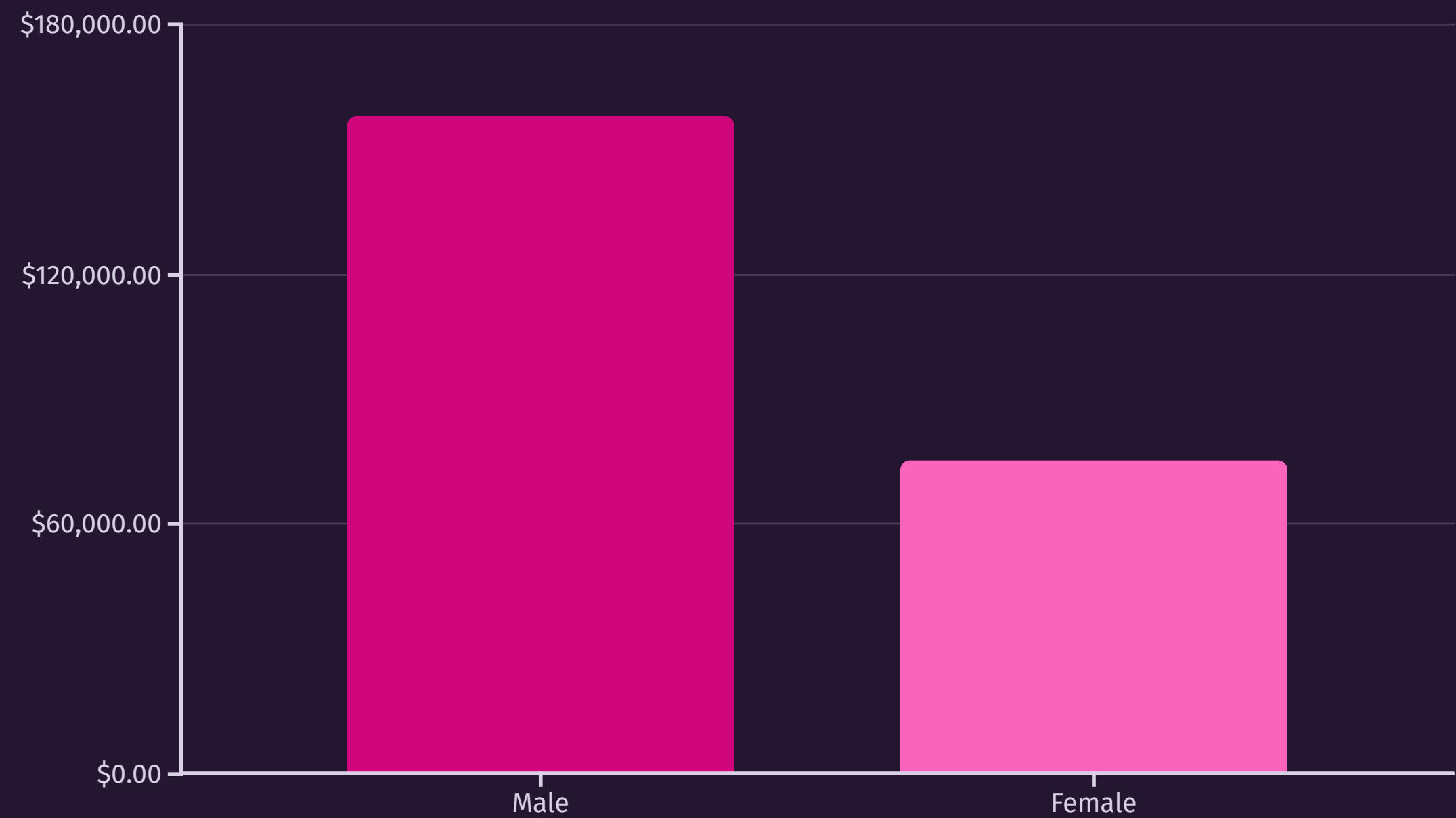
Created `age_group` bins and `purchase_frequency_days` columns

04

## Database Integration

Connected to PostgreSQL and loaded cleaned data for SQL analysis

# Revenue Analysis by Gender



## Key Finding

Male customers generate **2.1x more revenue** than female customers

## Business Implication

Opportunity to expand female customer engagement and product offerings

# High-Value Discount Users

## 839 Customers

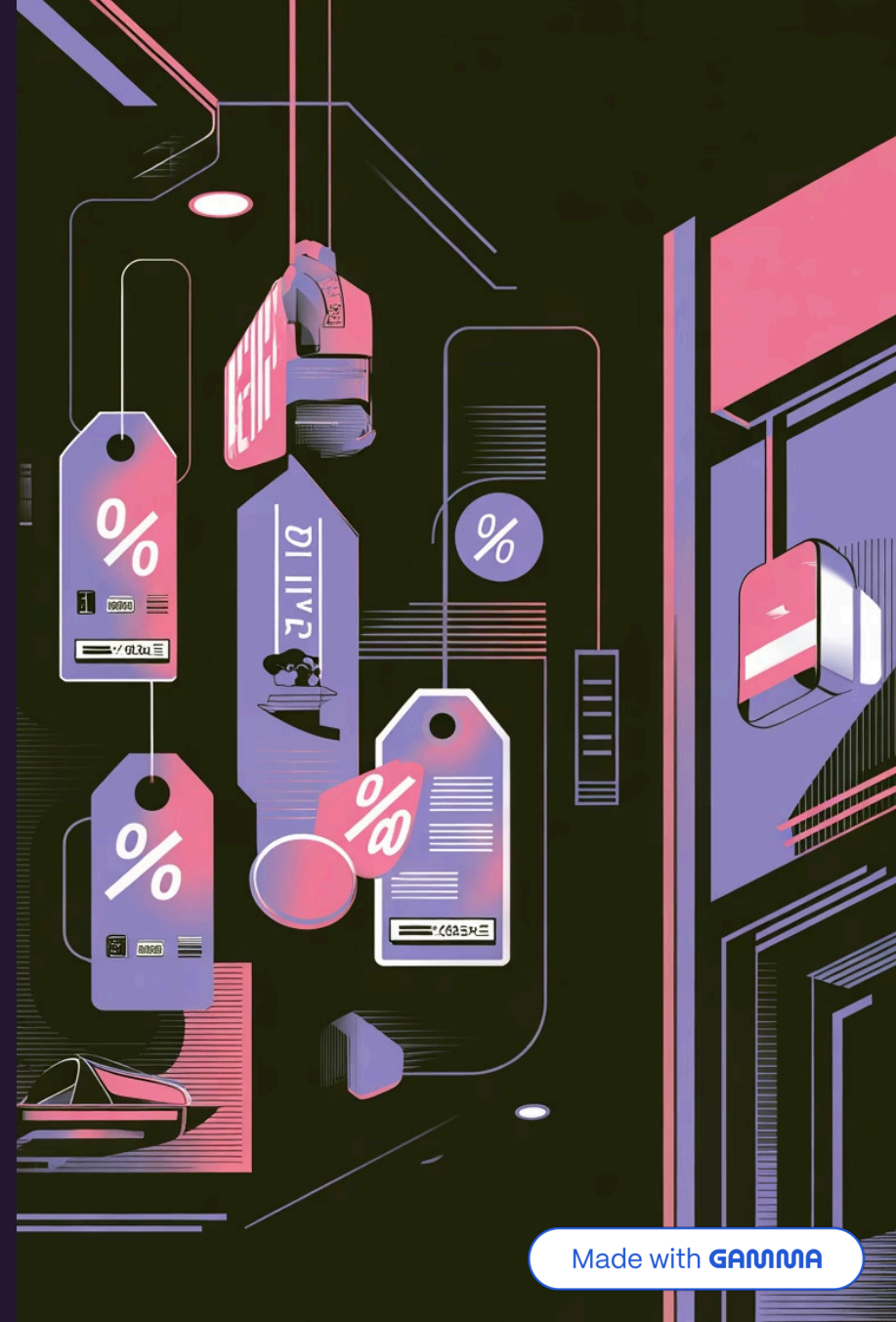
Used discounts but spent **above average**

## Smart Spenders

Discount-savvy yet high-value purchasers

## Strategic Insight

Discounts don't always mean lower revenue per customer



# Product Performance Insights

## Top 5 Products by Rating

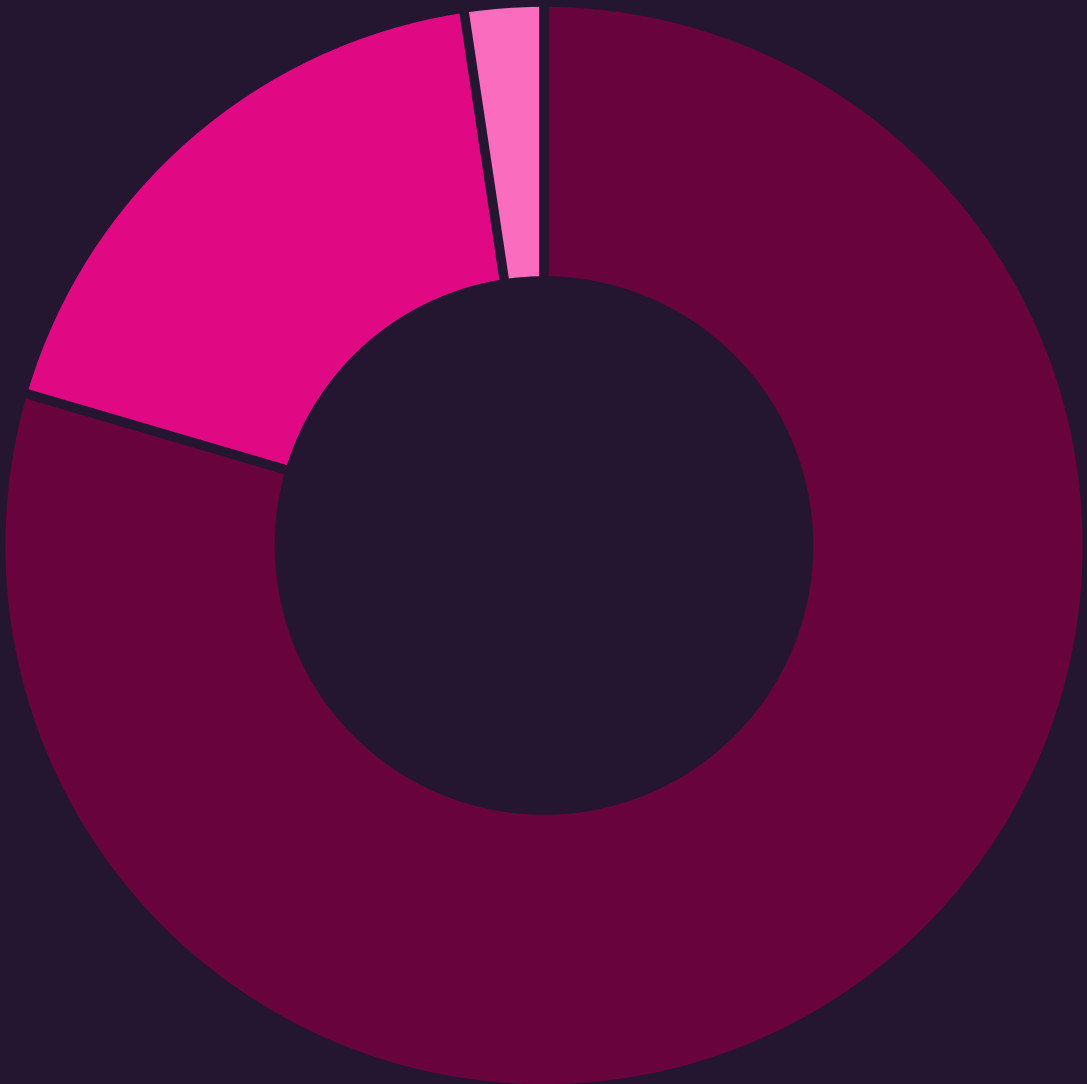
1. Gloves - 3.86
2. Sandals - 3.84
3. Boots - 3.82
4. Hat - 3.80
5. Skirt - 3.78

## Most Discounted Products

1. Hat - 50% discount rate
2. Sneakers - 49.66%
3. Coat - 49.07%
4. Sweater - 48.17%
5. Pants - 47.37%



# Customer Segmentation



■ Loyal

■ Returning

■ New

## Loyal Customers

80% of customer base - foundation of business

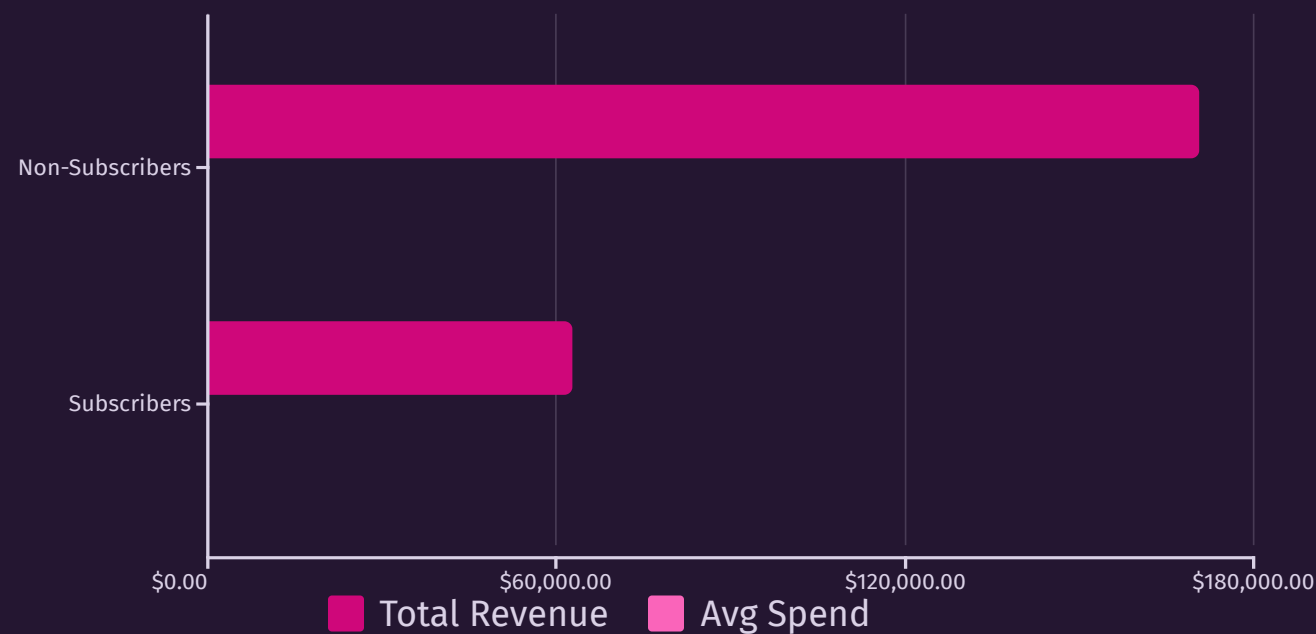
## Returning Buyers

18% showing repeat purchase behavior

## New Customers

2% - opportunity for growth and conversion

# Subscription Impact Analysis



## Key Finding

**2,847** non-subscribers vs **1,053** subscribers

Similar average spend, but subscribers represent untapped loyalty potential



# Customer Behavior Dashboard

## subscription status

No

Yes

## Gender

Female

Male

## Category

Accessories

Clothing

Footwear

## Shipping Type

2-Day Shipping

Express

Free Shipping

3.9K

Number of customers

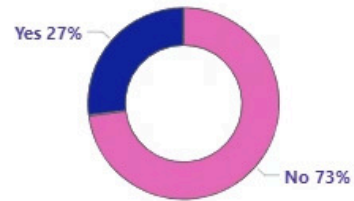
\$59.76

Average purchase amount

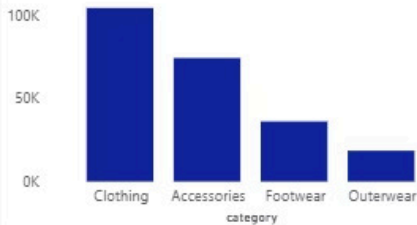
3.75

Average Review Ratings

## % of customers by subscription status



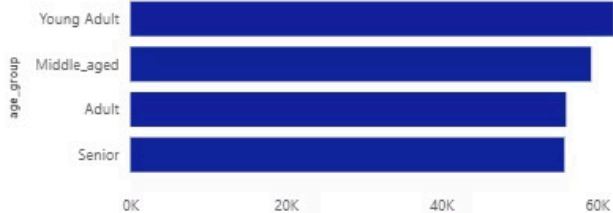
## Revenue by category



## Sales by category



## Revenue by age\_group



## Revenue by age\_group



# Strategic Recommendations



## Boost Subscriptions

Promote exclusive benefits to convert non-subscribers



## Loyalty Programs

Reward repeat buyers to strengthen loyal segment



## Review Discount Policy

Balance sales growth with margin control



## Targeted Marketing

Focus on high-revenue age groups and express shipping users



## Product Positioning

Highlight top-rated products in campaigns