

# Customer Shopping Behavior Analysis

Analyzing 3,900 customer transactions to uncover spending patterns, preferences, and strategic insights across demographics and product categories.

# Understanding Our Data Foundation

3,900

## Total Purchases

Transactions analyzed across  
all categories

18

## Data Points

Comprehensive customer and  
purchase attributes

25

## Product Types

Diverse items across four  
major categories

50

## Locations

Geographic distribution of  
customer base

Dataset includes customer demographics, purchase details, shopping behavior, and subscription status with minimal missing data (37 values in Review Rating).

# Data Preparation & Engineering

01

## Data Loading & Exploration

Imported dataset using pandas and examined structure with summary statistics

02

## Missing Data Handling

Imputed 37 missing Review Rating values using median rating per product category

03

## Column Standardization

Renamed columns to snake\_case for improved readability and documentation

04

## Feature Engineering

Created age\_group bins and purchase\_frequency\_days columns for deeper analysis

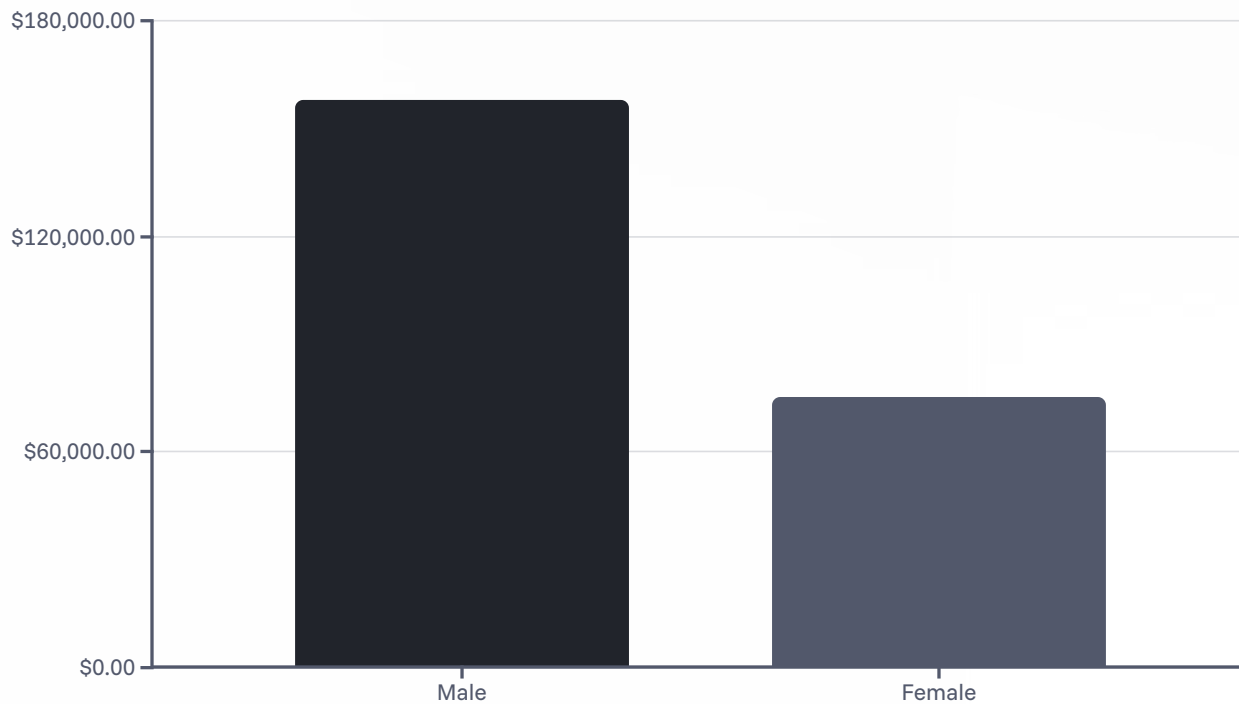
05

## Database Integration

Connected to PostgreSQL and loaded cleaned data for SQL analysis

KEY INSIGHT

# Revenue Gender Gap



**Male customers generate 2.1x more revenue** than female customers, representing a significant opportunity for targeted marketing strategies.

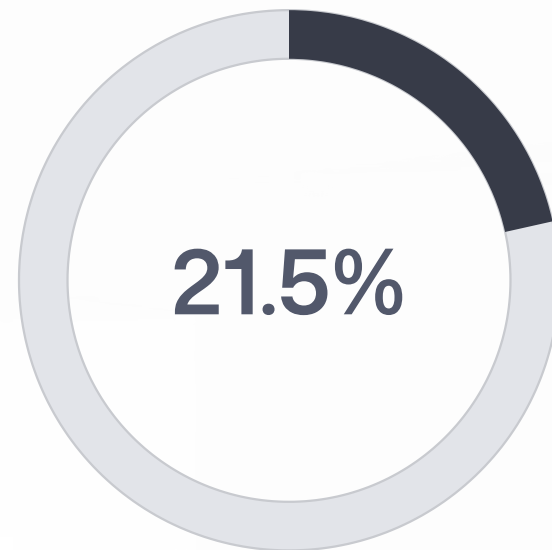
Total revenue: **\$233,081** across all transactions.

# Smart Discount Users



## High-Value Discount Shoppers

Customers who used discounts but still spent above average purchase amount



## Percentage of Total

These savvy shoppers represent quality-conscious buyers

These customers demonstrate that discounts don't necessarily mean lower-value purchases—they attract quality-conscious buyers willing to spend above average.

PRODUCT PERFORMANCE

# Top-Rated Products



Gloves

Highest customer satisfaction



Sandals

Strong summer performer



Boots

Quality footwear choice



Hat

Popular accessory item



Skirt

Top clothing category

Average review rating across all products: **3.75 stars**. These top performers consistently exceed customer expectations.

# Customer Loyalty Segments

## Loyal Customers

**3,116 customers (79.9%)**

Strong repeat purchase behavior

## Returning

**701 customers (18.0%)**

Growing engagement

## New

**83 customers (2.1%)**

Fresh acquisition



The majority of our customer base demonstrates strong loyalty, with nearly 80% classified as loyal customers based on purchase history.

# Subscription Impact



## Subscriber Base

**1,053 subscribers** (27%) vs 2,847 non-subscribers (73%)



## Average Spend

Subscribers: **\$59.49** | Non-subscribers: **\$59.87**



## Repeat Buyer Correlation

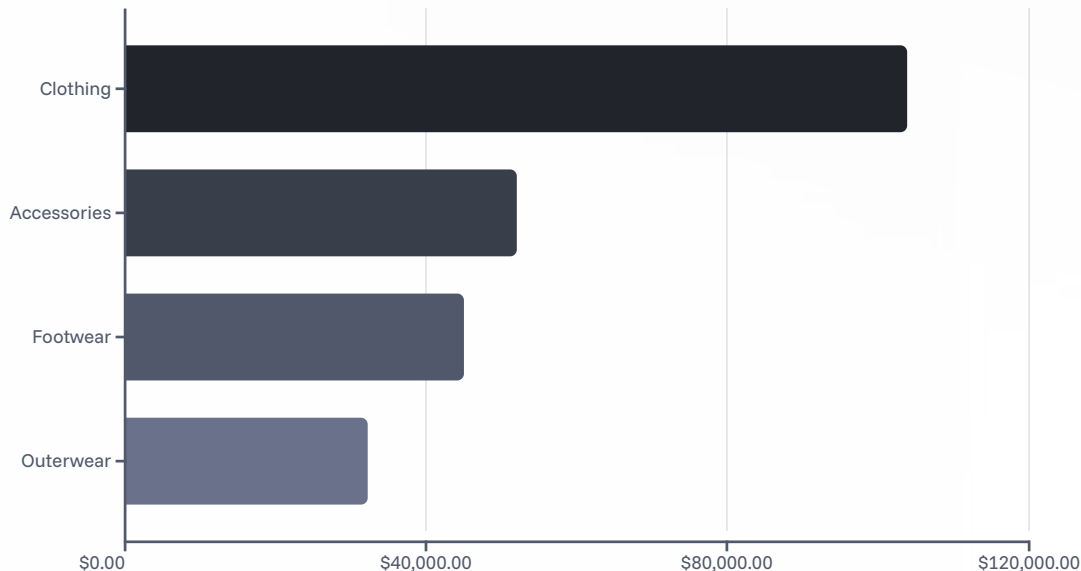
**958 subscribers** have 5+ purchases vs 2,518 non-subscribers

While subscribers show similar average spend, they demonstrate stronger repeat purchase behavior, indicating higher lifetime value potential.

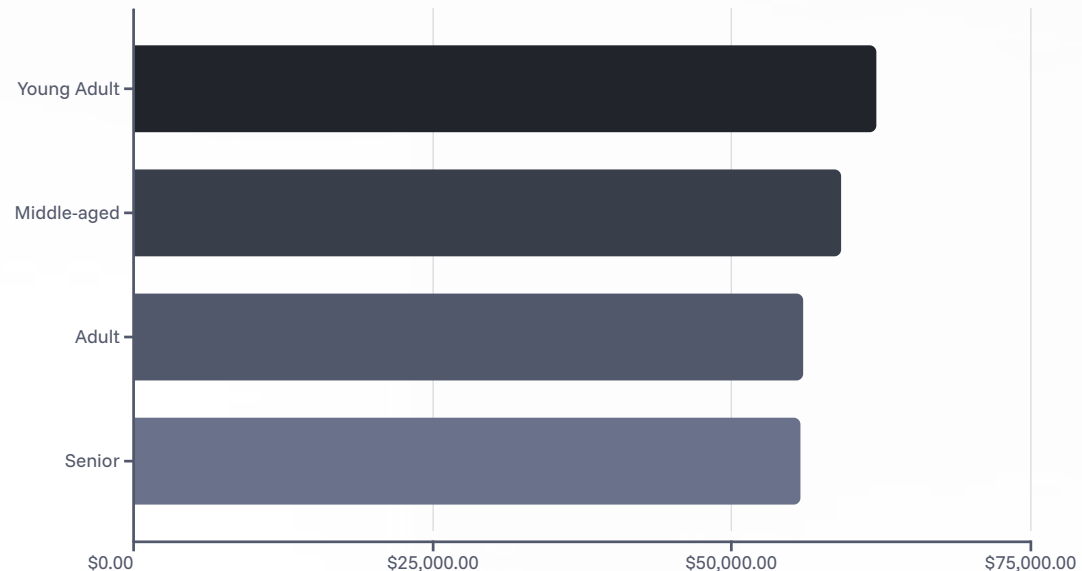


# Revenue Distribution Insights

By Category



By Age Group



Clothing dominates revenue at 44.5%, while age groups show relatively balanced contribution with young adults leading slightly.

# Key Takeaways & Next Steps



## Target Male Segment

Develop campaigns to maintain male customer dominance while growing female engagement



## Optimize Discounts

Focus promotions on high-value items—839 customers prove discounts attract quality buyers



## Boost Subscriptions

Convert loyal customers to subscribers to increase lifetime value and retention

With 79.9% loyal customers and balanced age demographics, focus on subscription conversion and category-specific marketing to maximize revenue growth.

