

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

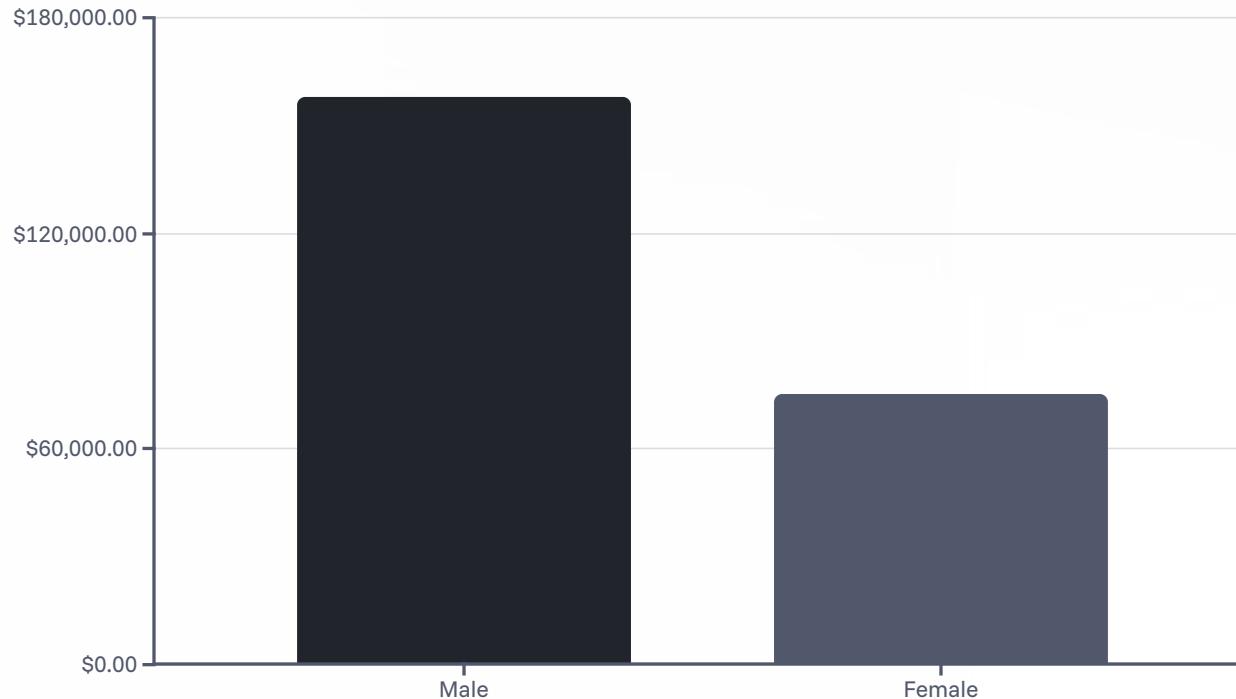
05

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.

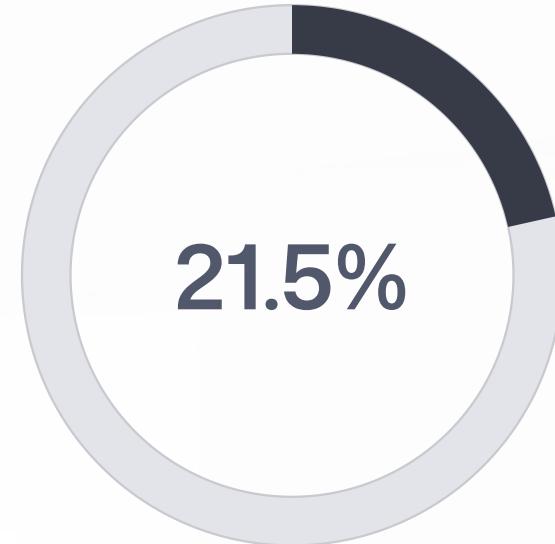
Smart Discount Users



High-Value Discount Shoppers

Customers who used discounts but still spent above average purchase amount

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



Percentage of Total

These savvy shoppers represent quality-conscious buyers

PRODUCT PERFORMANCE

Top-Rated Products

 3.9

Gloves

Highest customer satisfaction

 3.8

Sandals

Strong summer performer

 3.8

Boots

Quality footwear choice

 3.8

Hat

Popular accessory item

 3.8

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

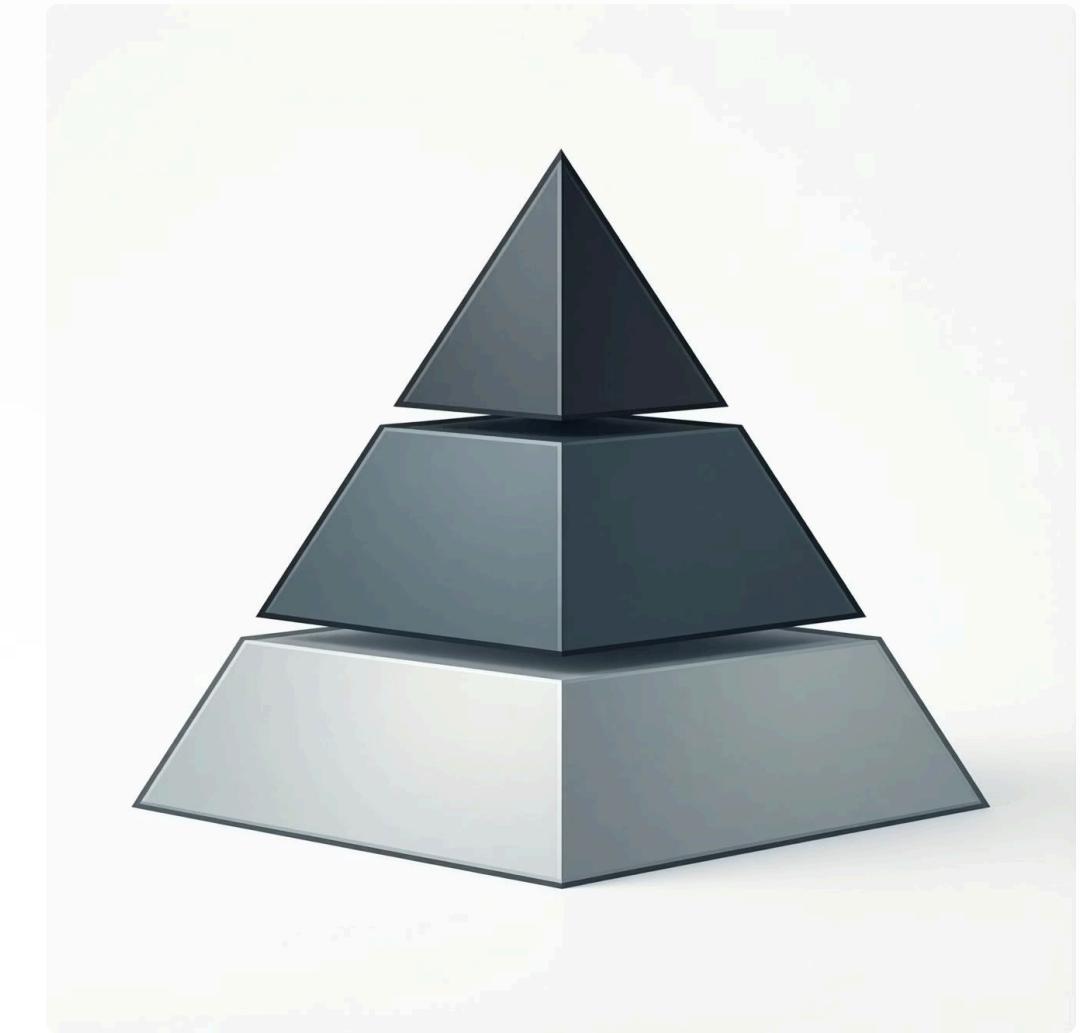
701 customers (18.0%)

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 ANALYSIS

Subscription Impact



Subscriber Base

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



Average Spend

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



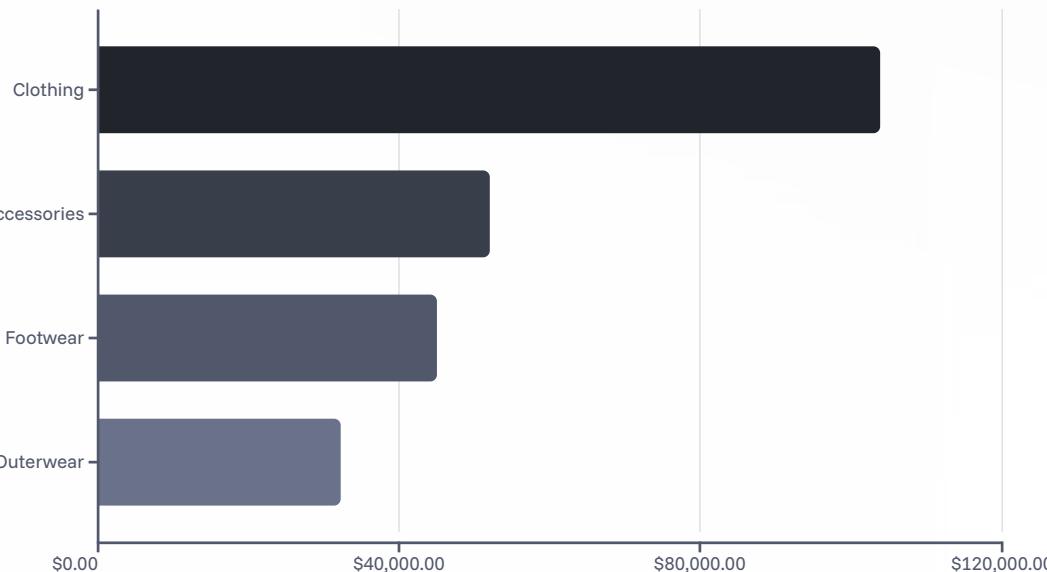
Repeat Buyer Correlation

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

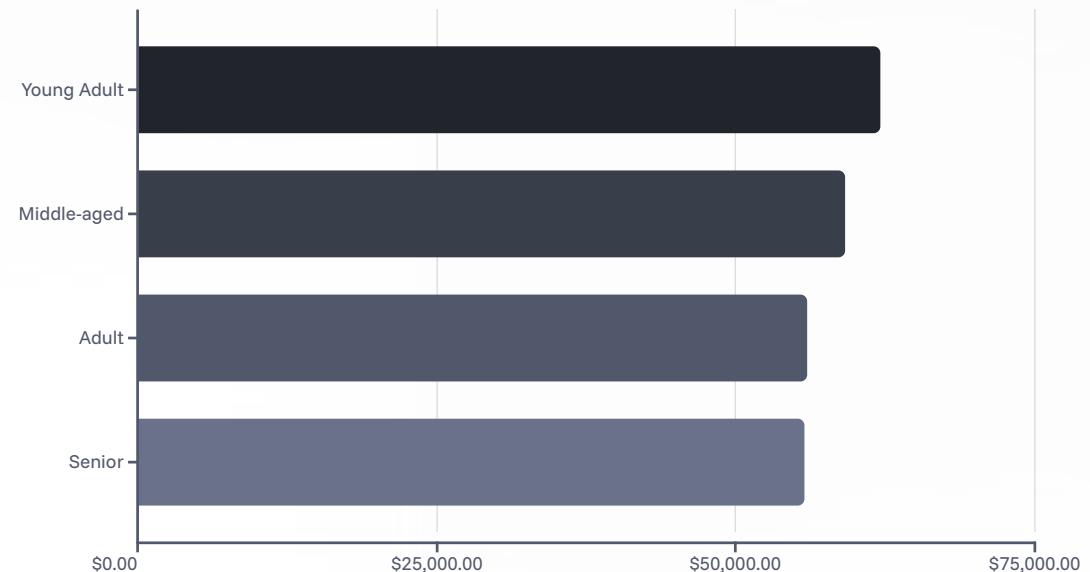
While subscribers show similar average spend, they demonstrate stronger repeat purchase behavior, indicating higher lifetime value potential.

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



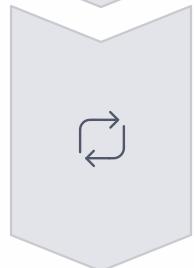
Target Male Segment

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.

