

Customer Shopping Behavior Analysis

Uncovering insights from 3,900 purchases to drive strategic business decisions





Dataset at a Glance

3,900

Total Purchases
Transactions analyzed across all categories

18

Data Points
Features tracked per customer

4

Product Categories
Clothing, Footwear, Accessories, Outerwear

50

Locations
Geographic coverage across regions

Data Preparation Journey

01

Data Loading & Exploration

Imported dataset using pandas, analyzed structure with df.info() and summary statistics

02

Cleaning & Standardization

Handled 37 missing review ratings, renamed columns to snake_case

03

Feature Engineering

Created age_group bins and purchase_frequency_days columns

04

Database Integration

Connected to PostgreSQL for advanced SQL analysis



Revenue Insights by Gender



Male Customers Drive Revenue

Male shoppers generate **\$157,890** compared to **\$75,191** from female customers

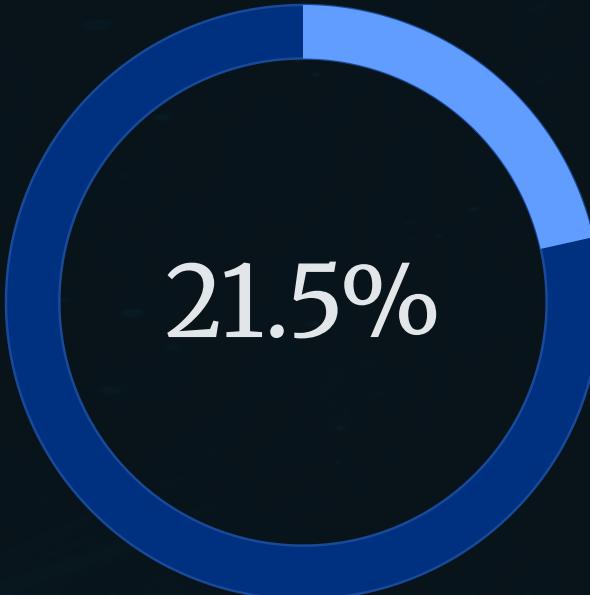
Represents a **2.1x** revenue difference

Smart Discount Users



High-Value Discount Shoppers

Customers who used discounts but spent above average



Percentage of Total

Strategic discount users maintain high purchase amounts

These customers prove discounts don't always mean lower revenue—they drive volume while maintaining spend levels

Product Performance Leaders



Gloves

Top rated: **3.86** stars



Sandals

Rating: **3.84** stars



Boots

Rating: **3.82** stars



Hat

Rating: **3.80** stars



Skirt

Rating: **3.78** stars

Customer Loyalty Breakdown



1 New

83 customers

2 Returning

701 customers

3 Loyal

3,116 customers

Loyalty Dominates

80% of customers are in the Loyal segment

Strong foundation of repeat buyers indicates successful retention

Opportunity: Convert 701 returning customers to loyal status

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Subscription vs. Non-Subscription

Subscribers

- 1,053 total customers
- Average spend: \$59.49
- Total revenue: \$62,645

Non-Subscribers

- 2,847 total customers
- Average spend: \$59.87
- Total revenue: \$170,436

Similar average spend, but non-subscribers drive **2.7x more total revenue** due to volume

Number of Customers

Average Purchase Amount

Average Review Rating

Gender

Female

Male

Category

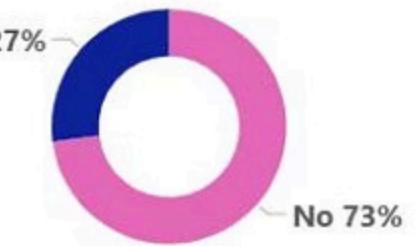
Accessories

Clothing

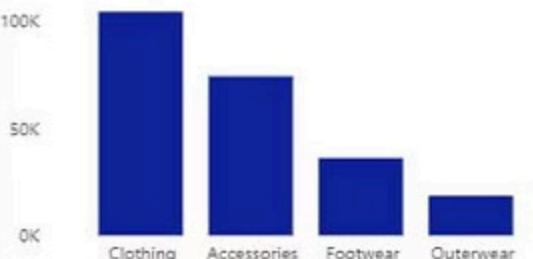
Footwear

Outerwear

% of Customers by Subscription Status



Revenue by Category



Sales by Category



Power BI Dashboard

Interactive visualization bringing all insights together for real-time business intelligence

Strategic Recommendations



Boost Subscriptions

Promote exclusive benefits to convert high-value non-subscribers



Loyalty Programs

Reward repeat buyers to move returning customers into loyal segment



Optimize Discounts

Balance sales boosts with margin control—839 smart users prove it works



Product Positioning

Highlight top-rated items like Gloves and Sandals in marketing campaigns



Targeted Marketing

Focus on high-revenue demographics and express shipping users