



Customer Shopping Behavior Analysis

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

Understanding Customer Patterns



This analysis examines transactional data from 3,900 purchases across multiple product categories. Our goal: uncover spending patterns, customer segments, product preferences, and subscription behavior to drive smarter business strategies.

Through Python, SQL, and Power BI, we transform raw data into actionable insights.

Dataset at a Glance

3,900 Rows

Complete purchase records

18 Columns

Rich feature set

Demographics

Age, gender, location data

Purchase Details

Items, amounts, seasons

Data Preparation & Cleaning

01

Data Loading

Imported dataset using pandas for initial exploration

02

Missing Data

Imputed 37 missing Review Ratings using category medians

03

Feature Engineering

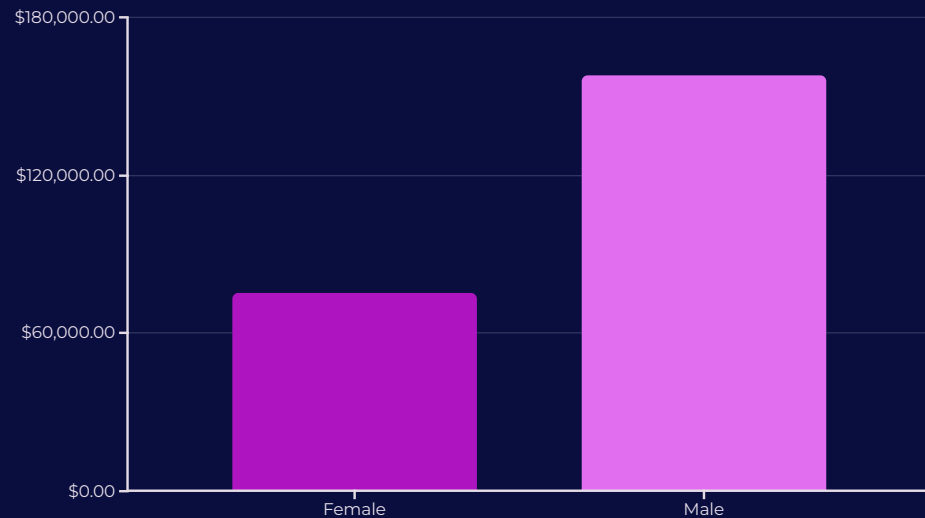
Created age_group and purchase_frequency_days columns

04

Database Integration

Connected to PostgreSQL for advanced SQL analysis

Revenue Insights by Gender



Male Customers Drive Revenue

Male customers generate more than double the revenue of female customers (\$157,890 vs \$75,191). This significant gap suggests opportunities for targeted marketing strategies.

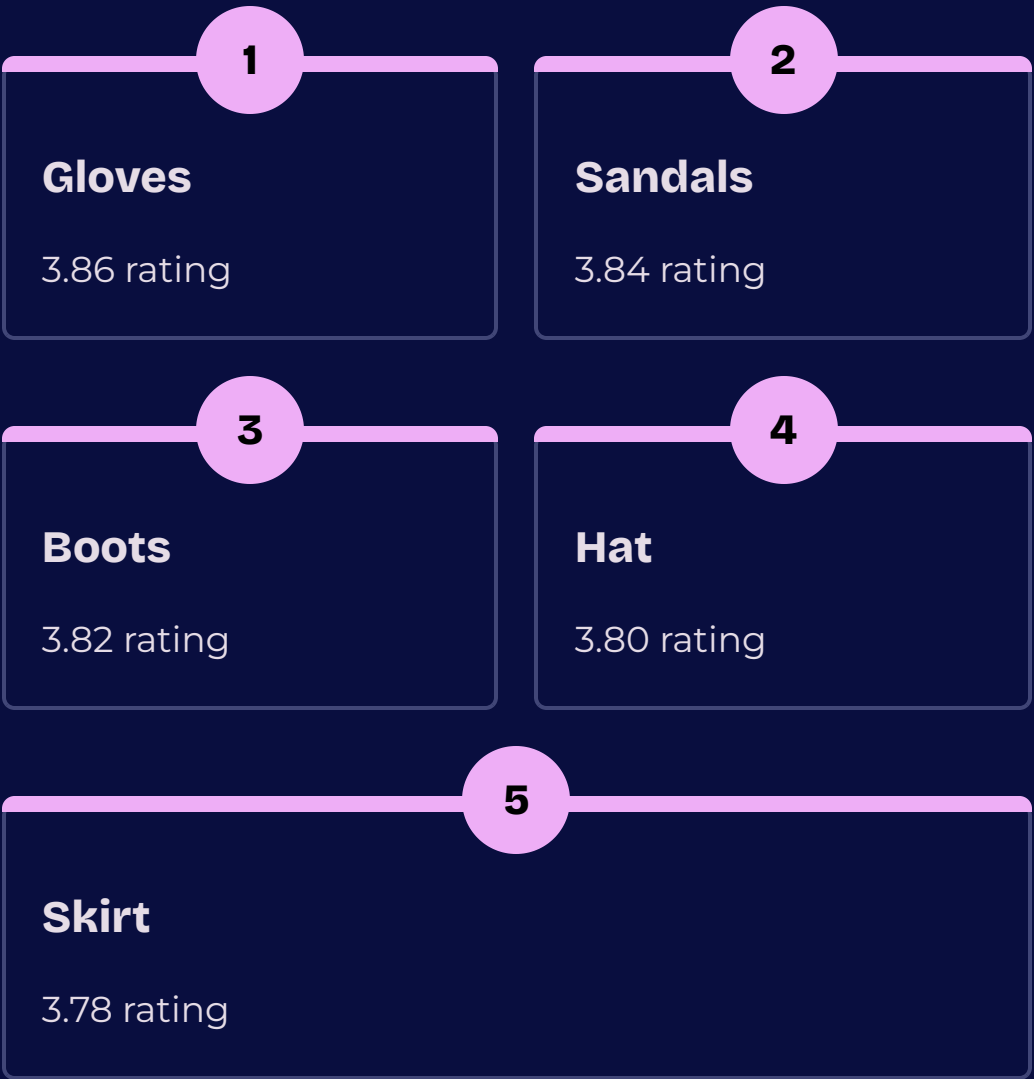
Consider developing campaigns specifically designed to increase engagement and spending among female shoppers.

Top-Rated Products

Customer Favorites

Review ratings reveal which products resonate most with customers. Gloves lead with 3.86 stars, followed closely by Sandals and Boots.

These high-performing items should be featured prominently in marketing campaigns and inventory planning.



Customer Segmentation



The vast majority of customers (80%) fall into the Loyal segment, demonstrating strong retention. However, the small New customer base (83) signals a need for improved acquisition strategies.

3.1K

Loyal Customers

Strong retention base

701

Returning

Growth opportunity

83

New Customers

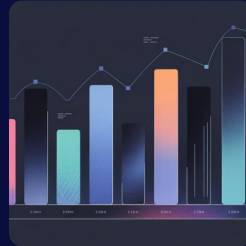
Acquisition focus needed

Power BI Dashboard



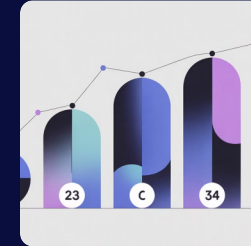
Subscription Status

27% subscribed, 73% non-subscribers



Category Performance

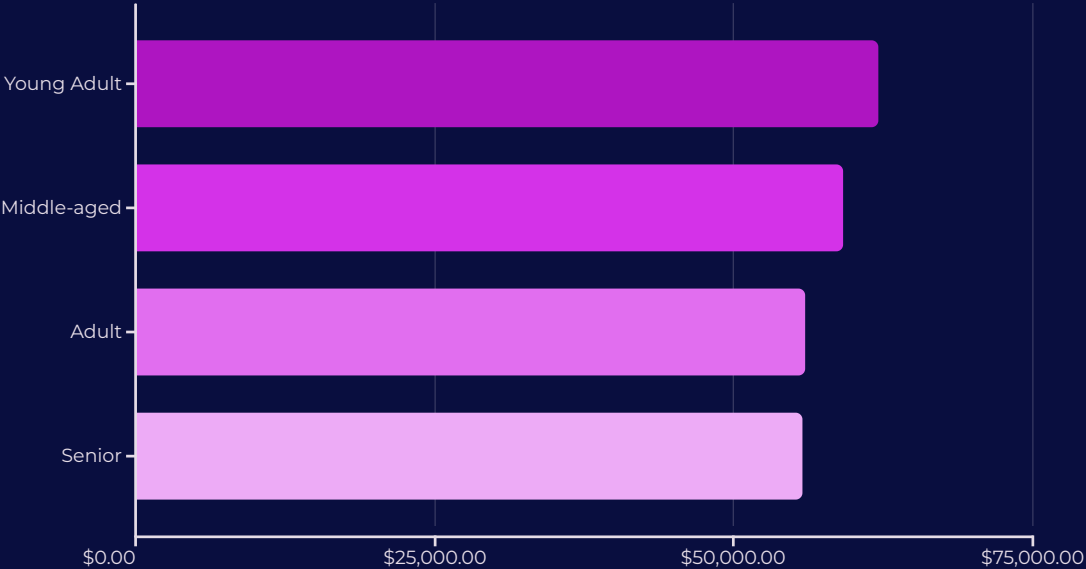
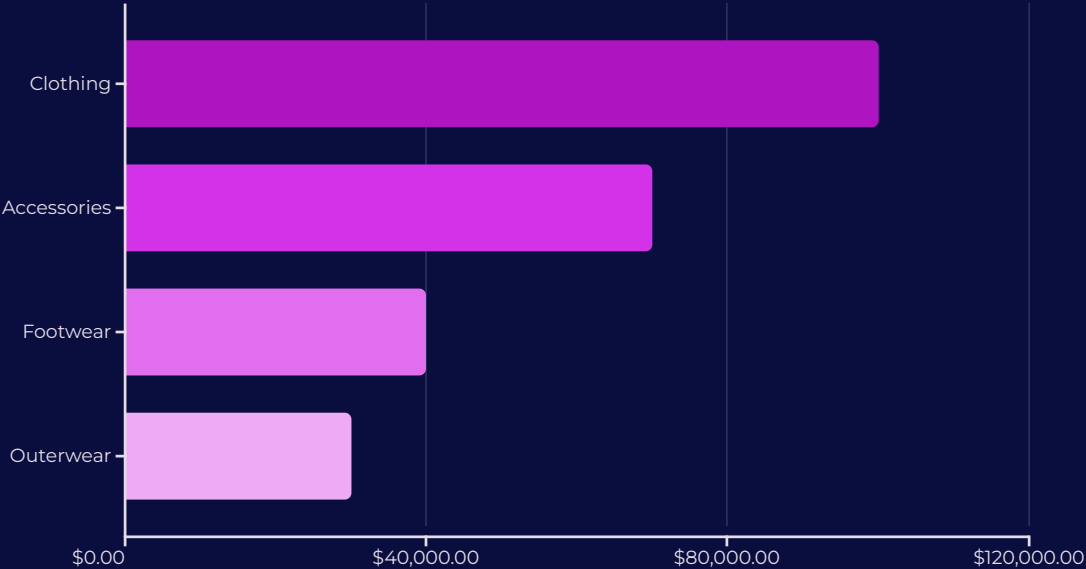
Clothing leads at \$100K revenue



Age Group Insights

Young Adults generate highest revenue

Revenue by Category & Age

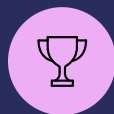


Strategic Action Plan



Boost Subscriptions

Promote exclusive benefits to convert the 73% non-subscribers



Loyalty Programs

Reward repeat buyers to strengthen the Loyal segment



Review Discounts

Balance promotional sales with healthy profit margins



Product Positioning

Feature top-rated items in marketing campaigns



Targeted Marketing

Focus on high-revenue age groups and express shipping users