



# Customer Shopping Behavior Analysis

Uncovering insights from 3,900 purchases to guide strategic business decisions through data-driven analysis of spending patterns, customer segments, and product preferences.

DATASET OVERVIEW

# The Data Behind the Insights

**3.9K**

## Total Purchases

Transactions analyzed  
across all categories

**18**

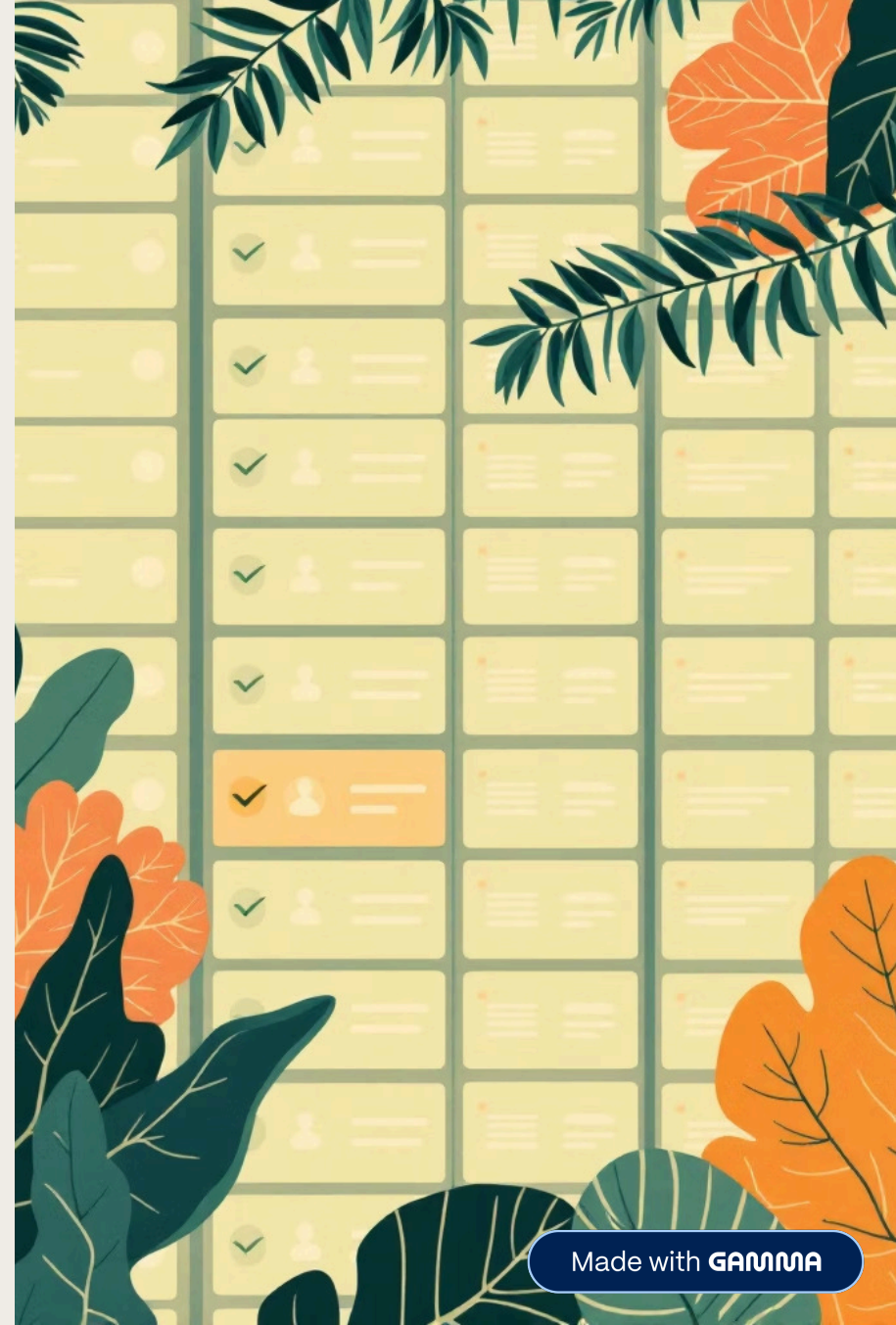
## Data Features

Comprehensive  
customer and purchase  
attributes

**50**

## Locations

Geographic diversity in  
customer base



An illustration of a workspace. On the left, a computer monitor displays a code editor with Python code. In front of the monitor is a keyboard. To the right of the monitor is a small orange speaker and a pen holder with pens. A yellow lamp hangs from above. Green leaves are visible in the corners.

# Data Preparation & Cleaning

01

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## Data Loading & Exploration

Imported dataset using pandas and analyzed structure with summary statistics

02

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## Missing Data Handling

Imputed 37 missing Review Rating values using median by product category

03

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## Feature Engineering

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

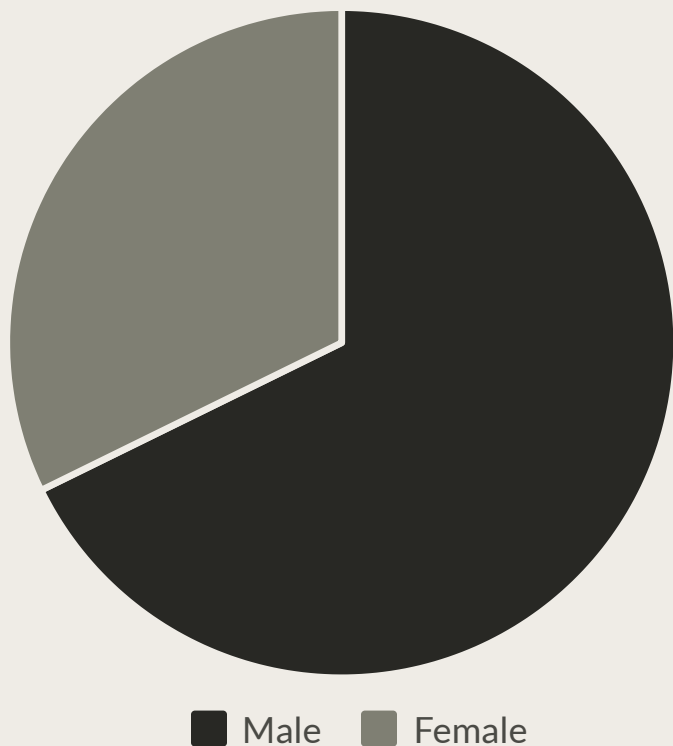
04

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## Database Integration

Connected to PostgreSQL and loaded cleaned data for SQL analysis

# Revenue Patterns by Gender



## Male Customers Drive Revenue

Male customers generated **\$157,890** in total revenue compared to **\$75,191** from female customers, representing a 2:1 revenue ratio.

This significant gap suggests opportunities for targeted marketing campaigns to increase female customer engagement and spending.



# Smart Discount Users

## High-Value Discount Shoppers

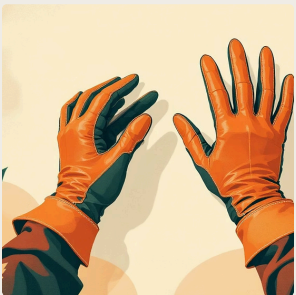
Identified 839 customers who used discounts but still spent above the average purchase amount of \$59.76.

These savvy shoppers represent a valuable segment—they're discount-conscious but willing to spend on quality products.

- ❏ Purchase amounts ranged from \$62 to \$97, showing these customers aren't just bargain hunters.

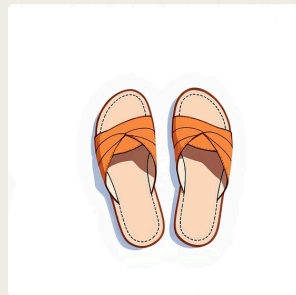


# Top-Rated Products



**Gloves**

Rating: 3.86 stars



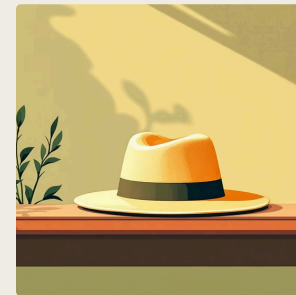
**Sandals**

Rating: 3.84 stars



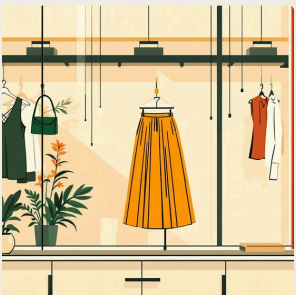
**Boots**

Rating: 3.82 stars



**Hat**

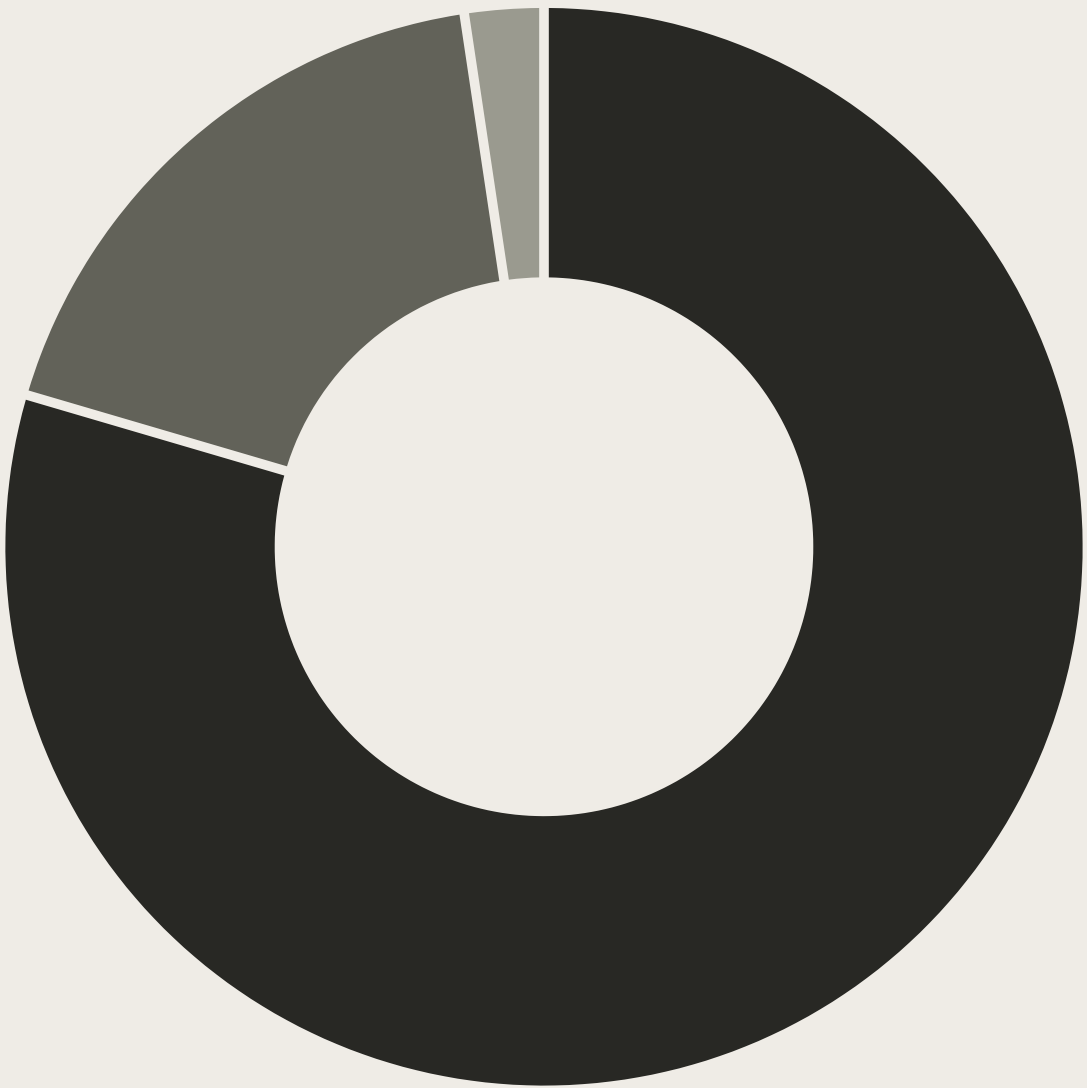
Rating: 3.80 stars



**Skirt**

Rating: 3.78 stars

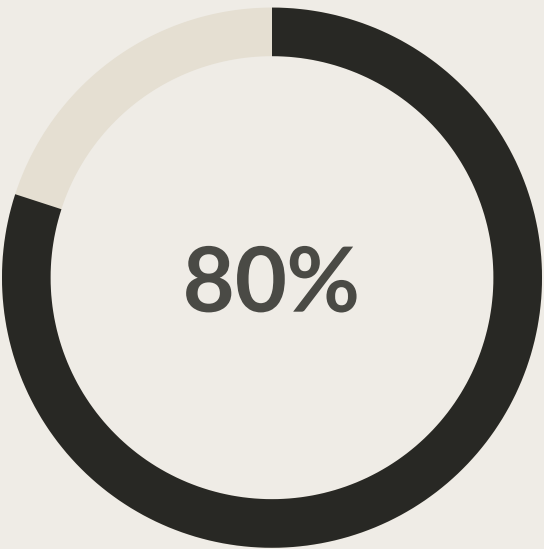
# Customer Segmentation Insights



■ Loyal

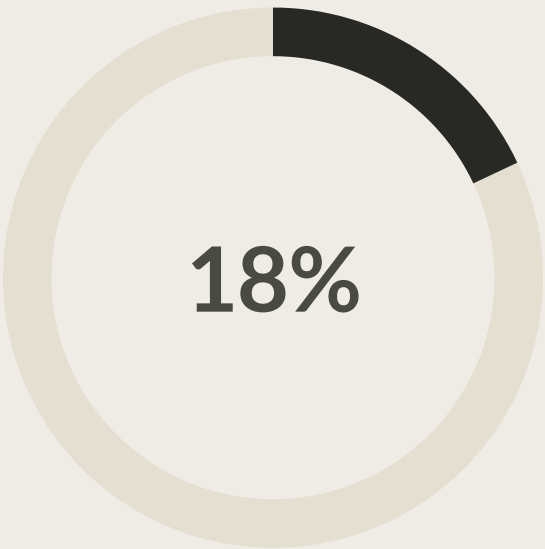
■ Returning

■ New



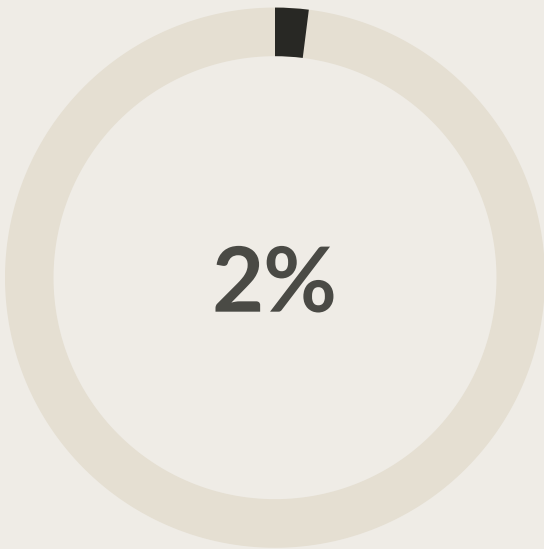
**Loyal Customers**

Strong retention base



**Returning Buyers**

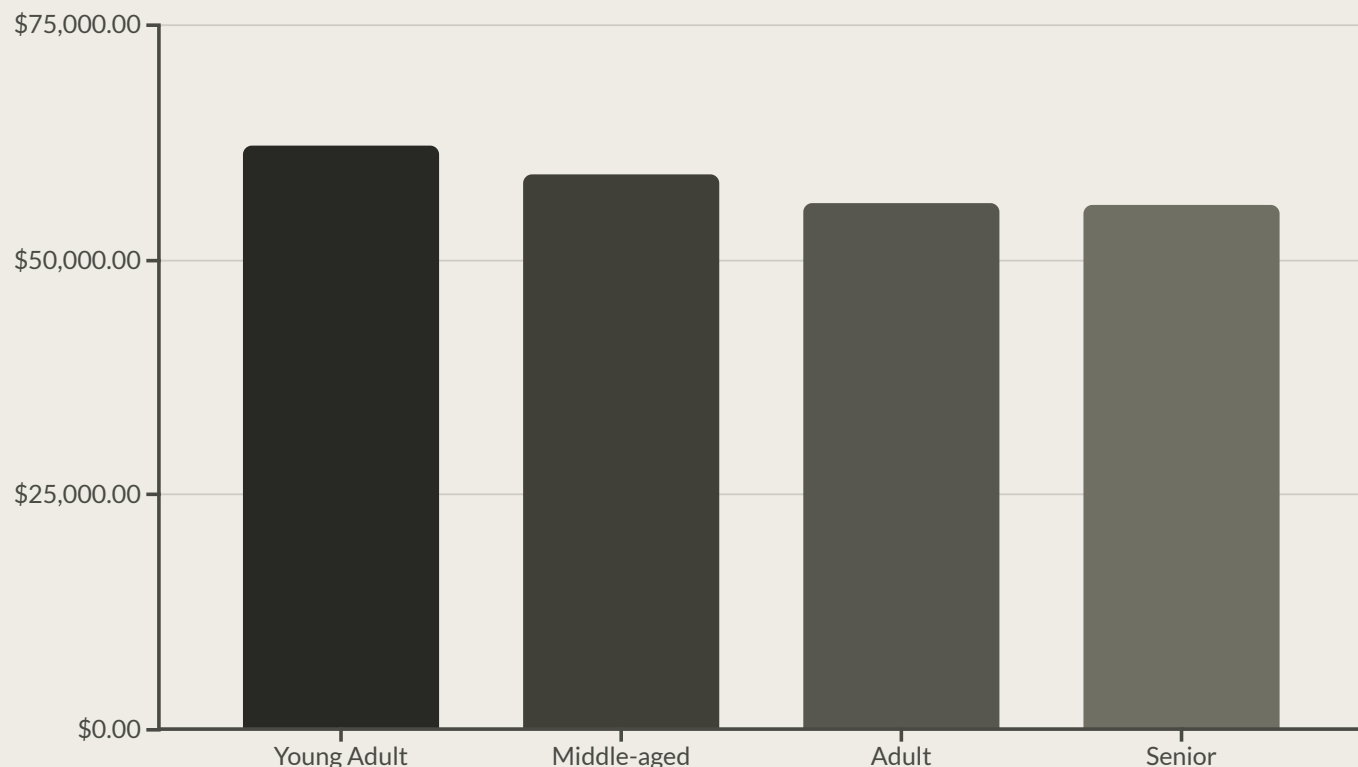
Growth opportunity



**New Customers**

Acquisition focus needed

# Revenue by Age Group & Category



## Balanced Revenue Distribution

Young adults lead with \$62,143 in revenue, but all age groups contribute relatively evenly, ranging from \$55,763 to \$62,143.

Clothing dominates category revenue at \$100K, followed by Accessories at \$70K. This balanced demographic spread suggests broad market appeal.





# Subscription Status Analysis

## Subscribers

1,053 customers (27%)

Avg spend: \$59.49

Total revenue: \$62,645

## Non-Subscribers

2,847 customers (73%)

Avg spend: \$59.87

Total revenue: \$170,436

## Key Finding

Similar spending patterns between groups, but **958 repeat buyers** (>5 purchases) are subscribers—loyalty correlation exists.

# Strategic Recommendations



## Boost Subscriptions

Promote exclusive benefits to convert the 73% non-subscriber base



## Loyalty Programs

Reward repeat buyers to move returning customers into loyal segment



## Targeted Marketing

Focus on high-revenue young adults and express-shipping users



## Product Positioning

Highlight top-rated items like gloves and sandals in campaigns