

# 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.



# The Foundation: Our Data

**3,900**

**Total Purchases**

Comprehensive transactional records analyzed

**18**

**Data Features**

Key attributes tracked per transaction

**\$59.76**

**Avg Purchase**

Mean transaction value across all customers

**3.75**

**Avg Rating**

Customer satisfaction score out of 5

Dataset includes customer demographics, purchase details, shopping behavior patterns, and subscription status across various product categories and locations.

# Data Preparation Journey

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## 1 Data Loading & Exploration

Imported dataset using pandas and examined structure with info() and describe() functions

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## 3 Feature Engineering

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

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## 2 Missing Data Handling

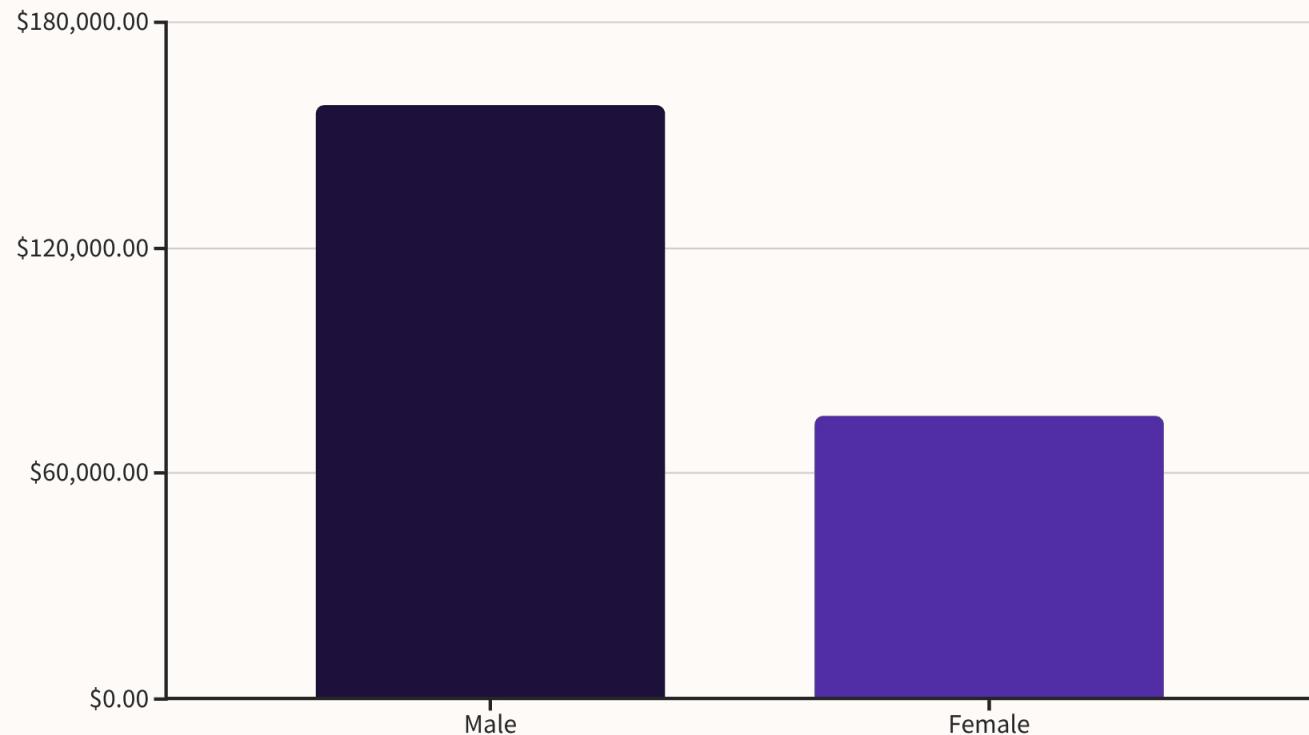
Imputed 37 missing Review Rating values using median rating per product category

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## 4 Database Integration

Connected to PostgreSQL and loaded cleaned data for SQL-based business analysis

# Revenue Insights by Demographics



## Gender Revenue Gap

Male customers generate **2.1x more revenue** than female customers, representing \$157,890 versus \$75,191 in total purchases.

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

# Customer Segmentation

## Analysis

**Loyal  
Customers**  
**3,116 customers**

Highest engagement with multiple repeat purchases

**Returning  
Customers**  
**701 customers**

Moderate engagement showing growth potential

**New  
Customers**  
**83 customers**

Fresh acquisitions requiring nurturing strategies

The majority of our customer base (80%) falls into the Loyal segment, indicating strong retention but highlighting the need to convert new and returning customers into loyal advocates.



# Top-Performing Products

## Highest-Rated Items

1 Gloves

3.86 average rating

2 Sandals

3.84 average rating

3 Boots

3.82 average rating

4 Hat

3.80 average rating

5 Skirt

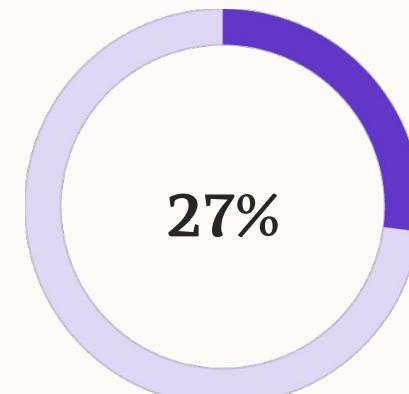
3.78 average rating



These top-rated products should be prominently featured in marketing campaigns and promotional materials to drive sales.

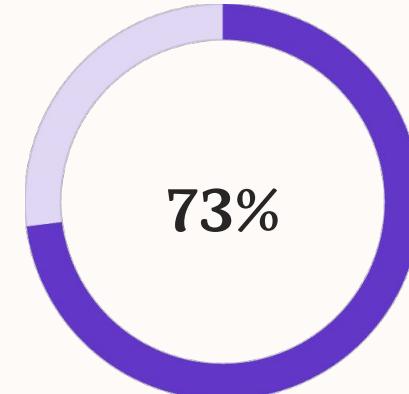
# Subscription & Discount Behavior

## Subscription Status



**Subscribers**

1,053 customers with subscriptions



**Non-Subscribers**

2,847 customers without subscriptions

Subscribers average **\$59.49** per purchase while non-subscribers average **\$59.87**, showing minimal spending difference.

## Discount Insights

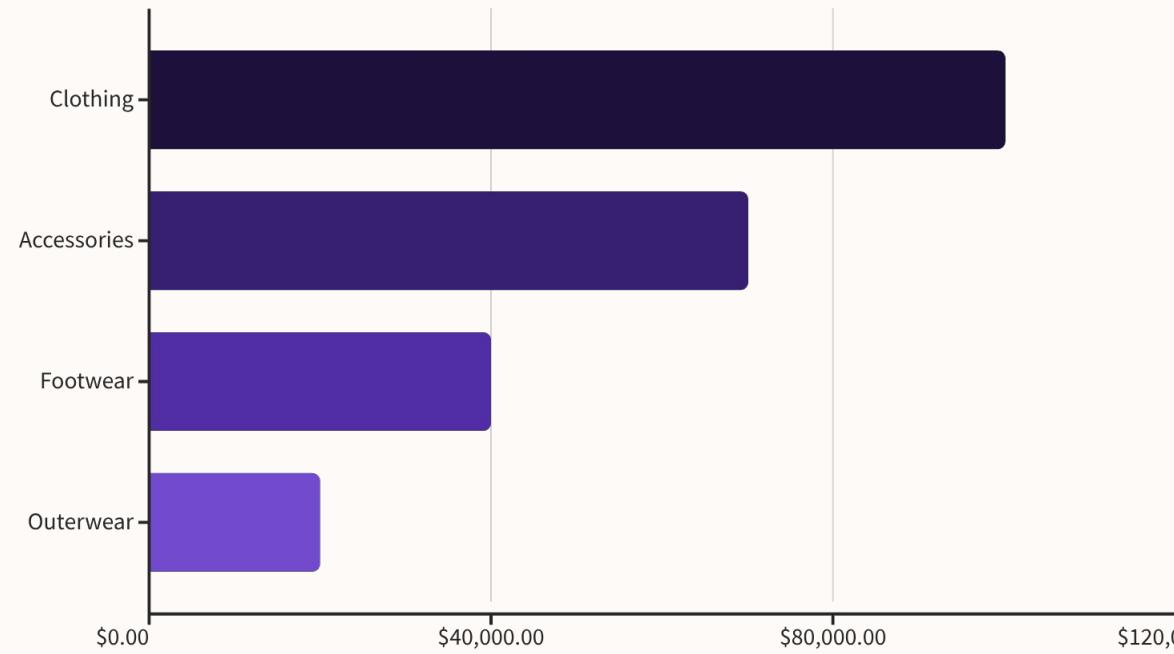
839 customers used discounts but still spent **above average**, indicating price-conscious yet high-value shoppers.

958 repeat buyers (>5 purchases) are subscribers, suggesting subscription programs effectively retain loyal customers.



alamy  
Image ID: 2YF277A  
www.alamy.com

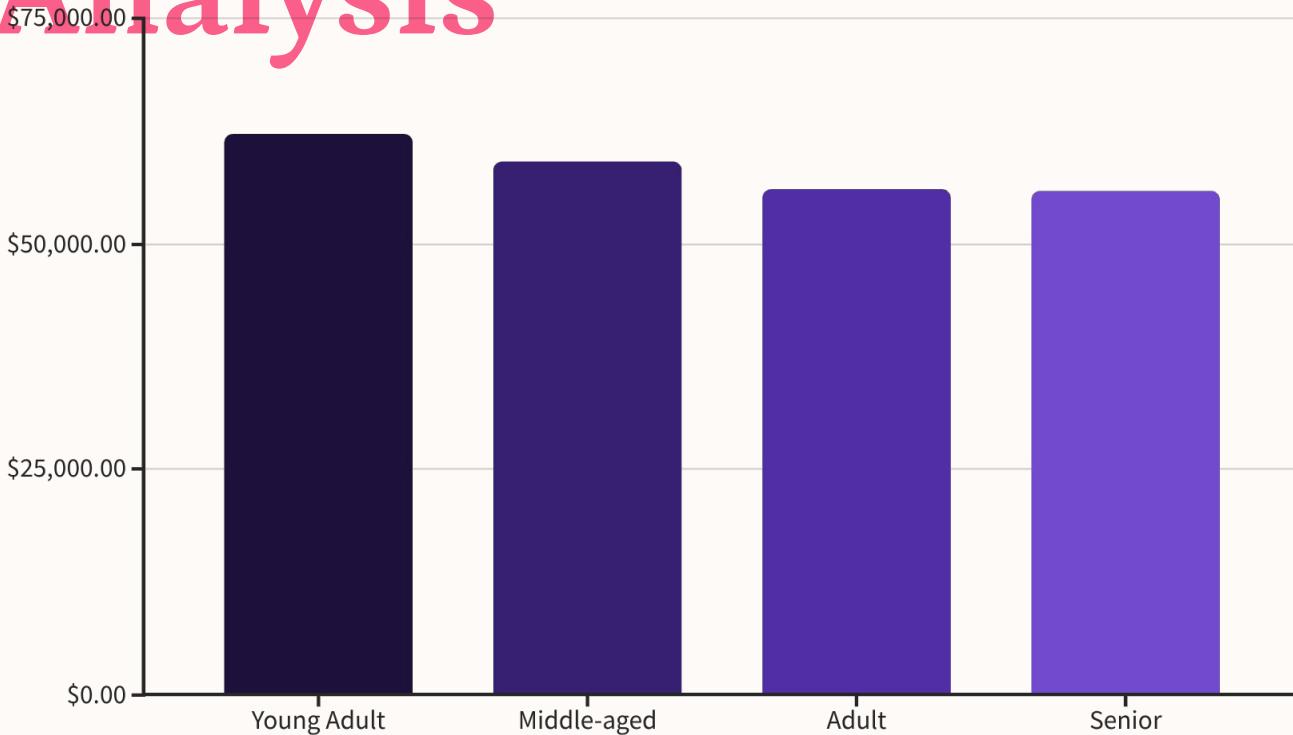
# Revenue Distribution Across Categories



## Category Performance

Clothing dominates revenue at **\$100K**, representing 43% of total sales. Accessories follow at \$70K, while Footwear and Outerwear contribute \$40K and \$20K respectively. Top products per category: Blouse (Clothing), Jewelry (Accessories), Sandals (Footwear), and Jacket (Outerwear) lead their segments.

# Age Group Revenue Analysis



## Generational Spending

Young Adults lead revenue generation at \$62,143, followed closely by Middle-aged customers at \$59,197. Revenue distribution is relatively balanced across age groups.

Express shipping users show higher average purchases (\$60.48) versus Standard (\$58.46), suggesting premium service attracts higher spenders.

# Strategic Recommendations

## 1 Boost Subscriptions

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

## 2 Loyalty Programs

Reward repeat buyers to accelerate movement from Returning to Loyal segment

## 3 Review Discount Policy

Balance promotional sales boosts with margin control for sustainable profitability

## 4 Product Positioning

Highlight top-rated items (Gloves, Sandals, Boots) in marketing campaigns

## 5 Targeted Marketing

Focus efforts on high-revenue Young Adults and express-shipping premium customers