

# Customer Shopping Behavior Analysis

Project Report  
2023-2024 Transactional Data

November 19, 2025

## Project Overview

This report presents a comprehensive analysis of transactional data from 3,900 purchases. The goal is to uncover insights into spending patterns, customer segments, product preferences, and subscription behavior to guide strategic business decisions.

## 1 Dataset Overview

The dataset captures demographics (Age, Gender, Location), purchase details (Category, Amount, Season), and behavioral metrics.

- **Total Purchases:** 3,900
- **Variables Analyzed:** 18
- **Average Product Rating:** 3.75

*Note: Missing values in Review Ratings were imputed using category medians.*

## 2 Key Analytical Insights

### 2.1 Revenue by Gender

Male customers significantly outspend female customers in this dataset, contributing approximately 67% of total revenue.

Gender	Total Revenue	Contribution
Male	\$157,890	≈ 67%
Female	\$75,191	≈ 33%

### 2.2 Customer Segmentation

The customer base is heavily skewed towards loyal customers, suggesting strong retention but potentially slow acquisition of new users.

- **Loyal Customers:** 3,116
- **Returning Customers:** 701
- **New Customers:** 83

## 3 Detailed Financial Analysis

### 3.1 Revenue by Age Group

Young Adults are the leading contributors to revenue, though spending is relatively distributed across age groups.

Age Group	Total Revenue
Young Adult	\$62,143
Middle-aged	\$59,197
Adult	\$55,978
Senior	\$55,763

### 3.2 Shipping Analysis

Customers opting for Express Shipping tend to have a slightly higher average spend compared to Standard Shipping.

- **Express Shipping Avg Spend:** \$60.48
- **Standard Shipping Avg Spend:** \$58.46

## 4 Product Performance

The following items have the highest average customer ratings (above 3.7):

- **Gloves:** 3.86 \*
- **Sandals:** 3.84 \*
- **Boots:** 3.82 \*
- **Hat:** 3.80 \*

## 5 Strategic Recommendations

1. **Boost Subscriptions:** Only 27% of customers are subscribers. Promote exclusive benefits (e.g., free express shipping) to convert the 73% non-subscriber base, as subscribers show consistent recurring revenue.
2. **Enhance Loyalty Programs:** Capitalize on the large "Loyal" segment (3,116 customers). Implement tiered rewards to increase average order value (AOV) among this group.
3. **Targeted Marketing by Age:** Focus ad spend on "Young Adults" who are the top revenue contributors (\$62k). Tailor social media campaigns specifically to this demographic's preferences.
4. **Optimize Discount Strategy:** Certain items like Hats and Sneakers are highly discount-dependent ( $\approx 50\%$ ). Review margins on these items to ensure profitability despite high discount rates.