



# Customer Shopping Behavior Analysis

Transforming 3,900 customer transactions into actionable insights for revenue growth and customer loyalty

## The Challenge

# Unlocking Hidden Value in Transaction Data

Retail organizations generate massive volumes of customer transaction data daily. Without structured analysis, this valuable information remains underutilized, leaving critical questions unanswered.

**Key challenges:** Understanding purchasing behavior, identifying high-value segments, evaluating product performance, and assessing discount effectiveness.





# Our Analytical Approach



## Data Preparation

Python for cleaning and feature engineering

## SQL Analysis

PostgreSQL for querying and segmentation

## Visualization

Power BI for interactive insights

# Dataset at a Glance

**3,900**

## Total Records

Customer transactions  
analyzed

**18**

## Data Columns

Comprehensive  
attributes tracked

**37**

## Missing Values

Review ratings  
imputed using  
median

Dataset includes demographics (age, gender, location), purchase details (item, category, amount, season), and behavioral attributes (discounts, frequency, ratings, shipping preferences).



# Key Performance Metrics

## Average Purchase

**\$59.76** per transaction with 3.75 average review rating

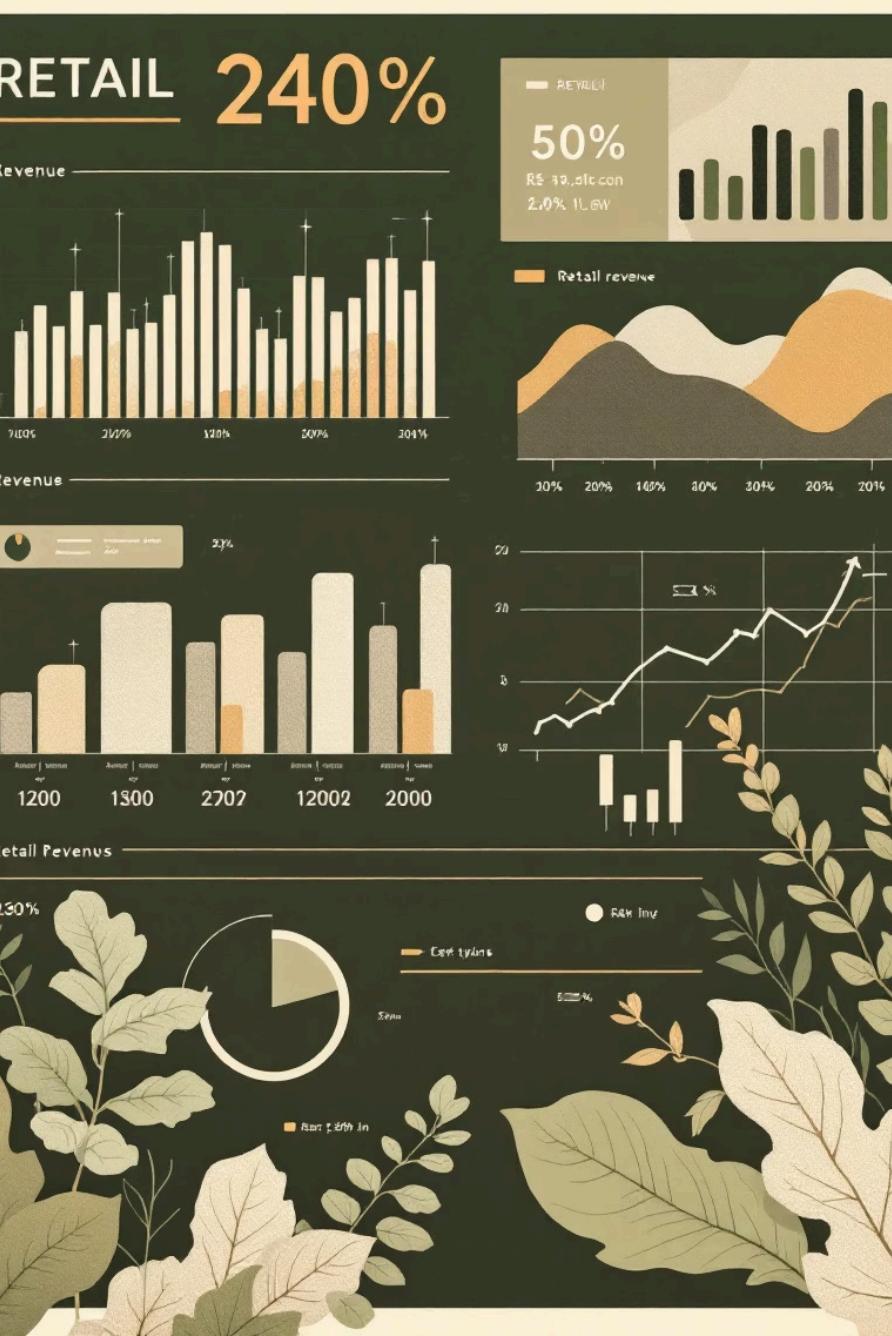
## Subscription Rate

**27%** subscribed (1,053 customers)

## Top Category

**Clothing** leads with \$104K revenue

# RETAIL 240%



# Revenue Distribution Insights

## By Category

Clothing: \$104K

Accessories: \$74K

Footwear: \$36K

Outerwear: \$19K

## By Age Group

Young Adult: \$62K

Middle-aged: \$59K

Adult: \$56K

Senior: \$56K

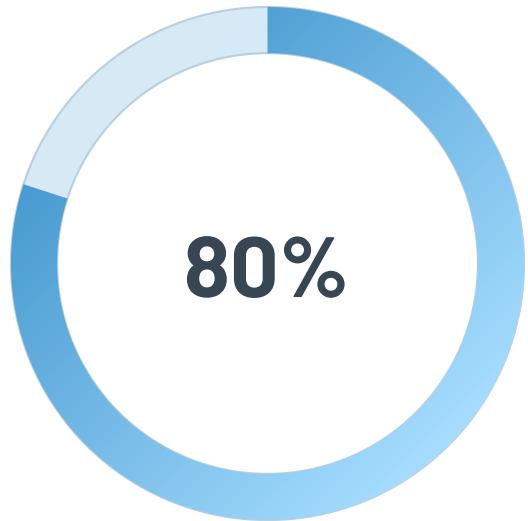
## By Gender

Male: \$157,890

Female: \$75,191

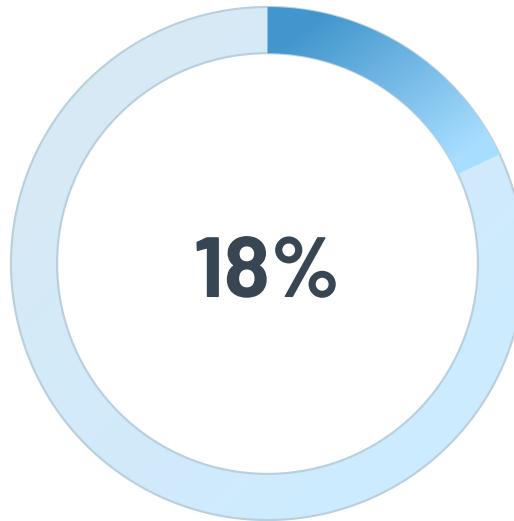
Male customers drive 68% of total revenue

# Customer Segmentation Analysis



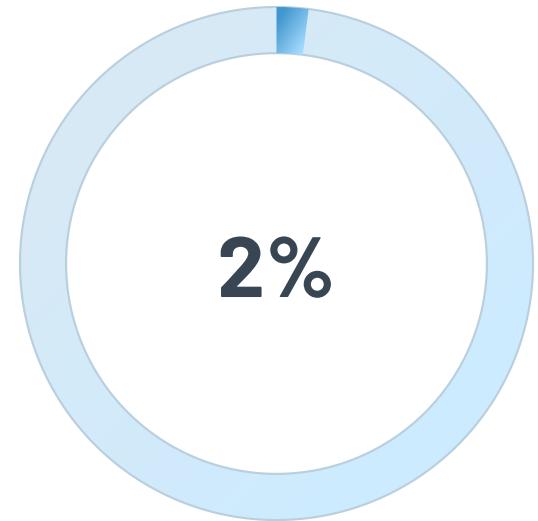
**Loyal Customers**

3,116 customers with 10+ purchases



**Returning**

701 customers with 2-10 purchases



**New Customers**

83 first-time buyers

**Key Finding:** 839 customers used discounts yet spent above average (\$59.76), indicating discount effectiveness doesn't compromise spending power.

Express shipping customers spend \$2 more on average (\$60.48 vs \$58.46) than standard shipping users.





# Product Performance Highlights

1

## Top-Rated Products

Gloves (3.86), Sandals (3.84),  
Boots (3.82), Hat (3.80), Skirt  
(3.78)

2

## Most Discounted

Hat (50%), Sneakers (49.66%),  
Coat (49.07%), Sweater (48.17%),  
Pants (47.37%)

3

## Category Leaders

Clothing: Blouse & Pants (171 orders each). Accessories: Jewelry (171 orders). Footwear: Sandals (160 orders)

# Strategic Recommendations

01

## Boost Subscriptions

73% are non-subscribers. Promote exclusive benefits and personalized offers to convert this segment.

02

## Loyalty Programs

Convert 701 returning customers into loyal customers through rewards and engagement initiatives.

03

## Optimize Discounts

Balance revenue growth with profitability. Target high-value customers who spend above average even with discounts.

04

## Focus Marketing

Prioritize Clothing and Accessories categories. Target Young Adult and Middle-aged segments with tailored campaigns.

05

## Shipping Incentives

Promote express shipping to high-revenue age groups to increase average order value.

# Driving Growth Through Data



## Key Takeaways

- Loyal customers represent 80% of the base—nurture them
- Subscription adoption at 27% offers significant growth potential
- Clothing and Accessories drive 76% of revenue
- Strategic discounting maintains profitability while driving volume

**Next Steps:** Implement targeted campaigns, launch enhanced loyalty programs, and optimize subscription offerings to maximize customer lifetime value.