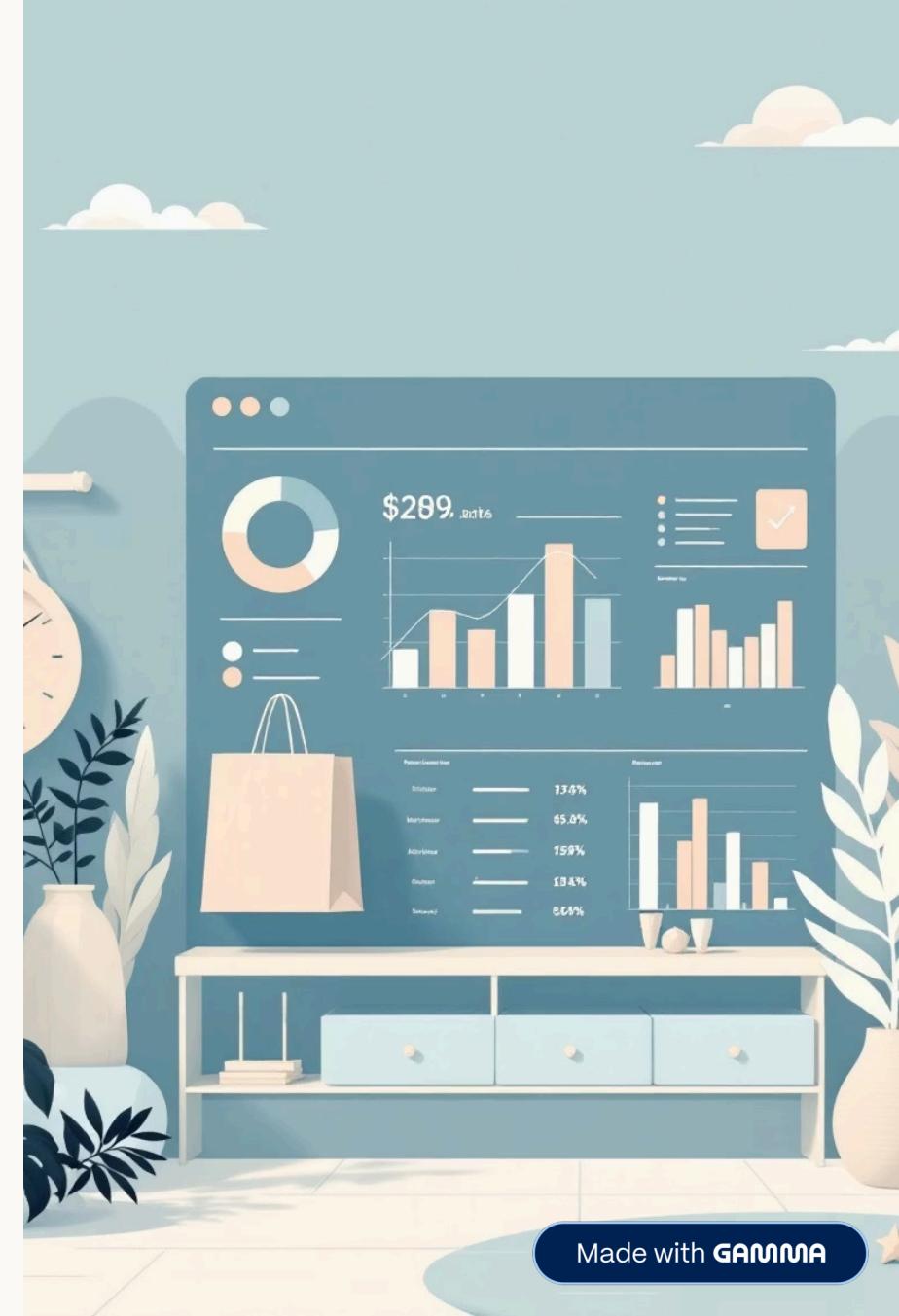


# Customer Shopping Behavior Analysis

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





# Dataset Overview

**3,900**

## Total Purchases

Transactions analyzed across all categories

**18**

## Data Columns

Comprehensive customer and purchase attributes

**50**

## Locations

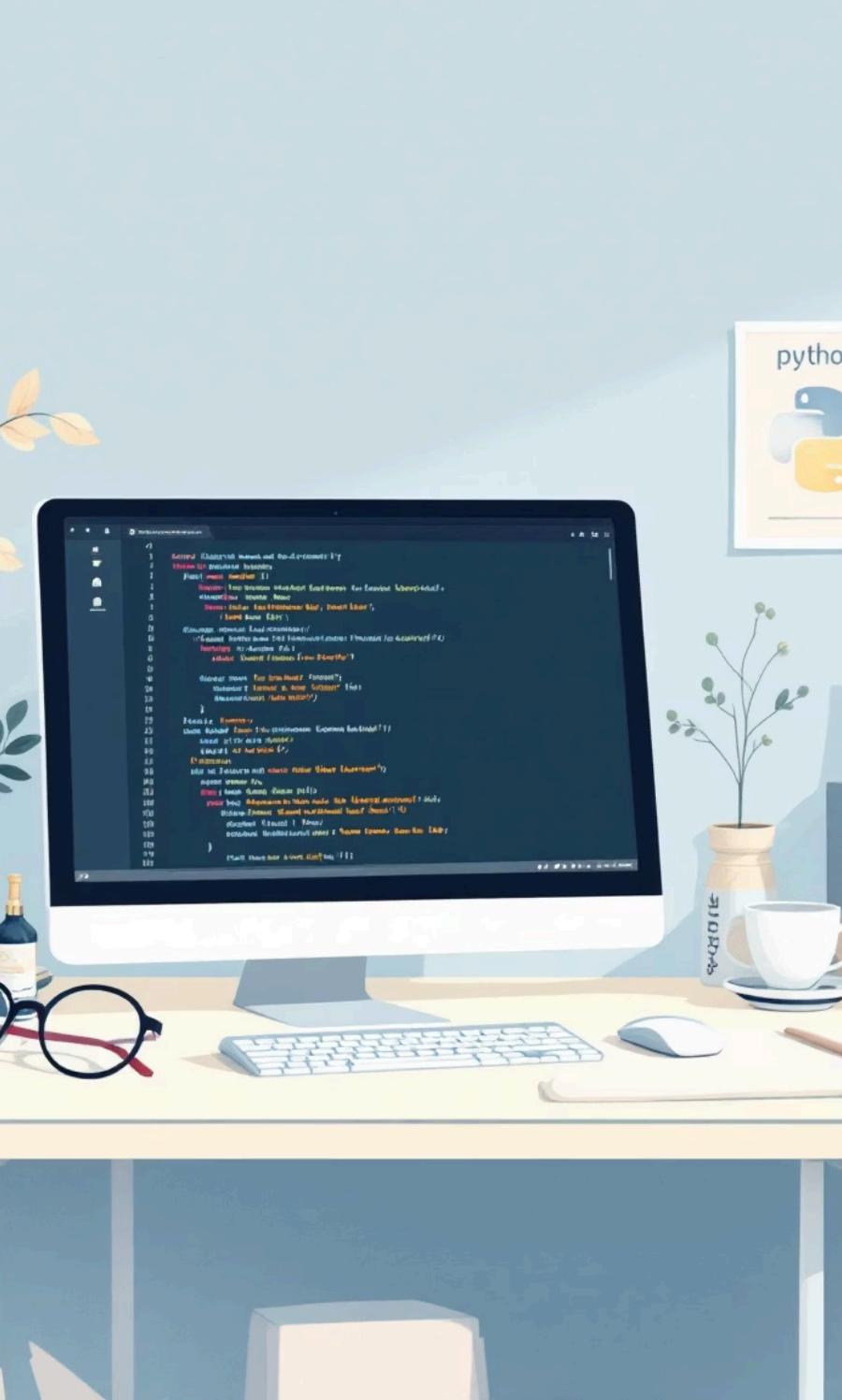
Geographic diversity in customer base

**25**

## Product Types

Diverse inventory across categories

# Data Preparation Journey



01

## Data Loading & Exploration

Imported dataset using pandas, analyzed structure with df.info() and summary statistics

02

## Missing Data Handling

Imputed 37 missing Review Rating values using median rating per category

03

## Feature Engineering

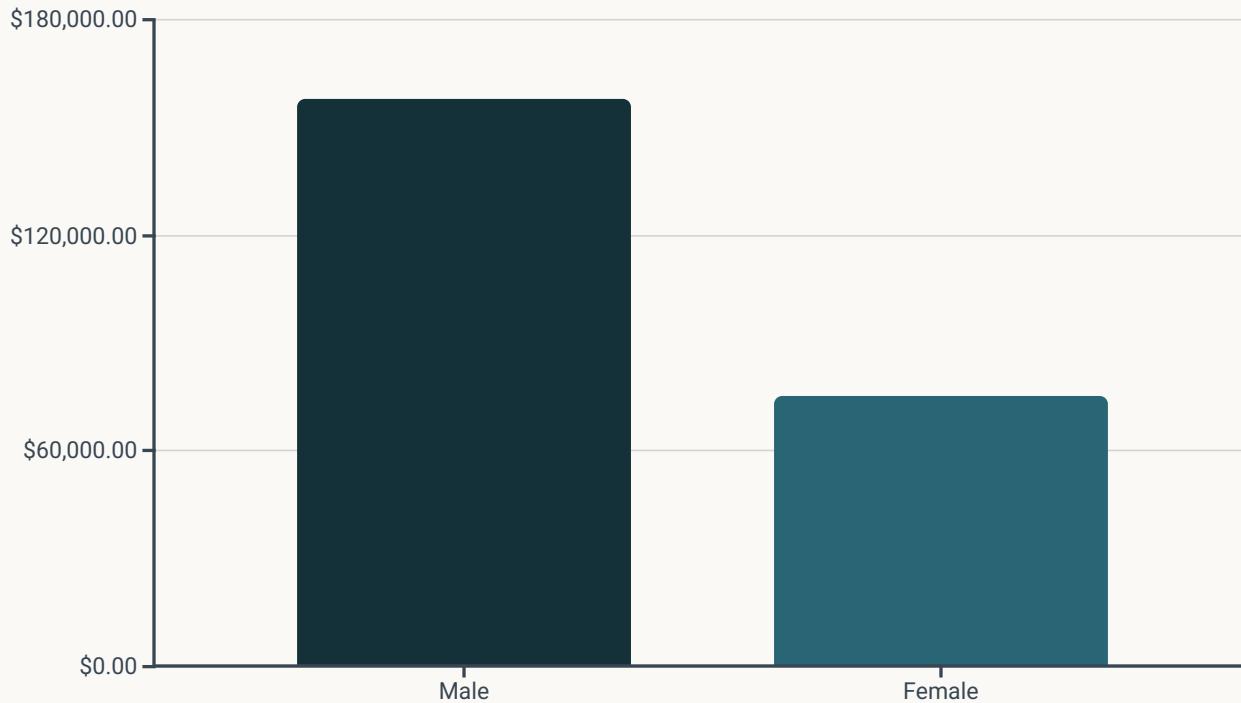
Created age\_group bins and purchase\_frequency\_days for deeper insights

04

## Database Integration

Connected to PostgreSQL for advanced SQL analysis

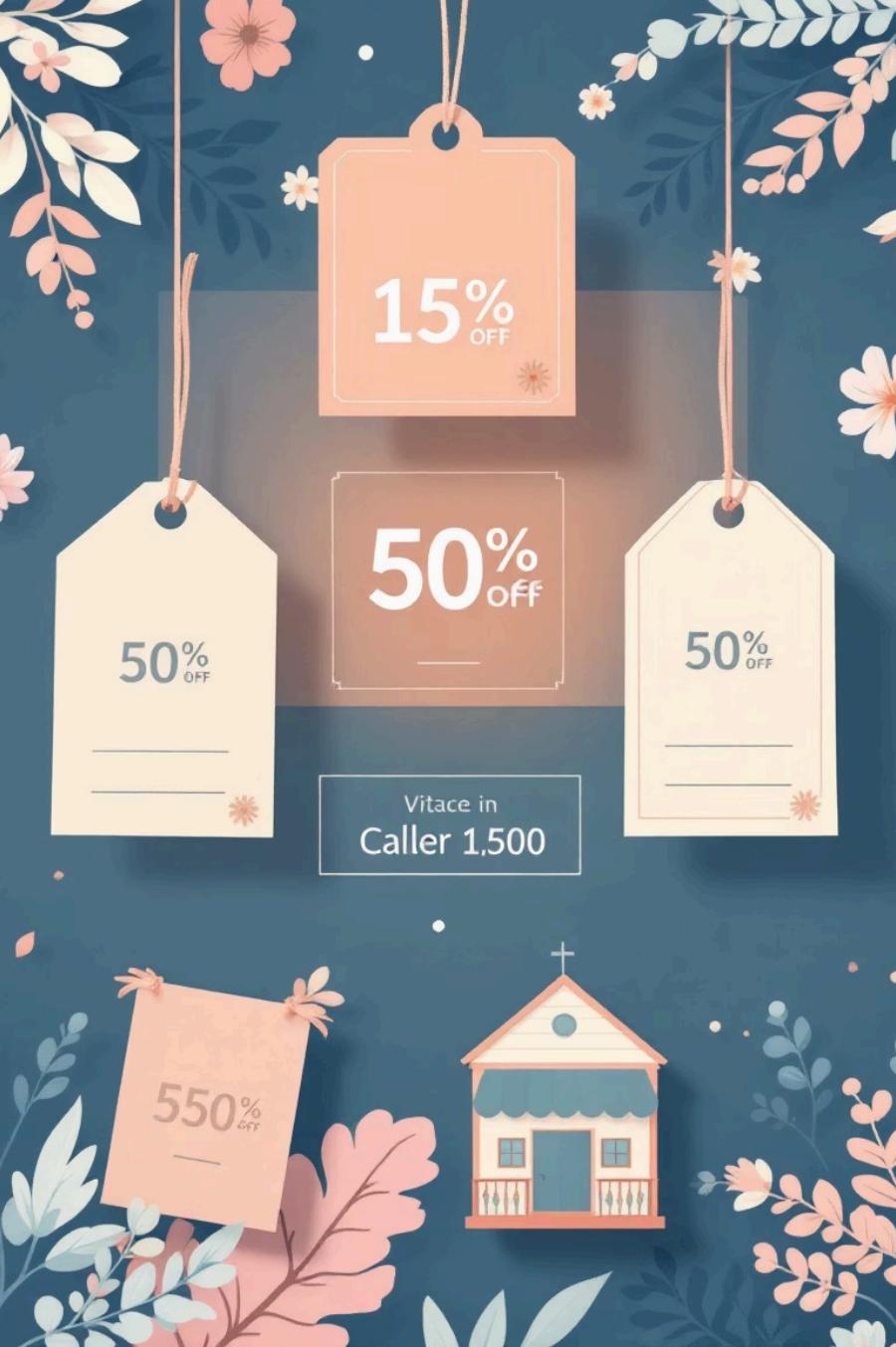
# Revenue Insights by Gender



## Key Finding

Male customers generate **2.1x more revenue** than female customers

Total revenue: \$233,081



# Smart Discount Users

## High-Value Discount Shoppers

**839 customers** used discounts but spent above average

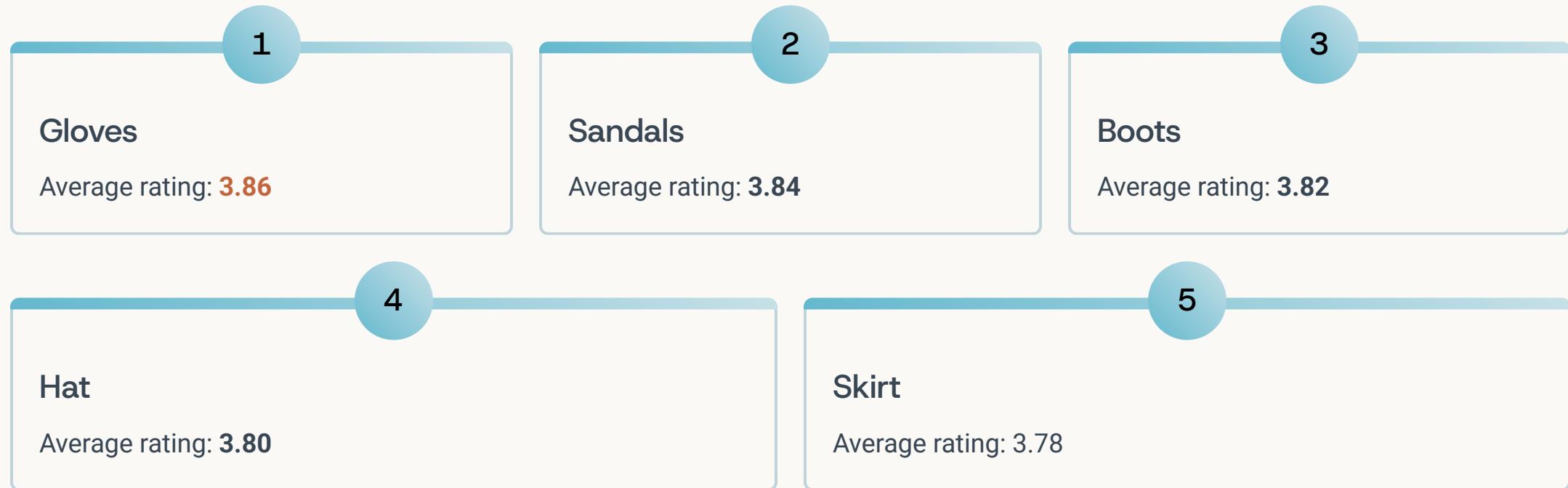
## Strategic Opportunity

These buyers prove discounts don't always reduce basket size

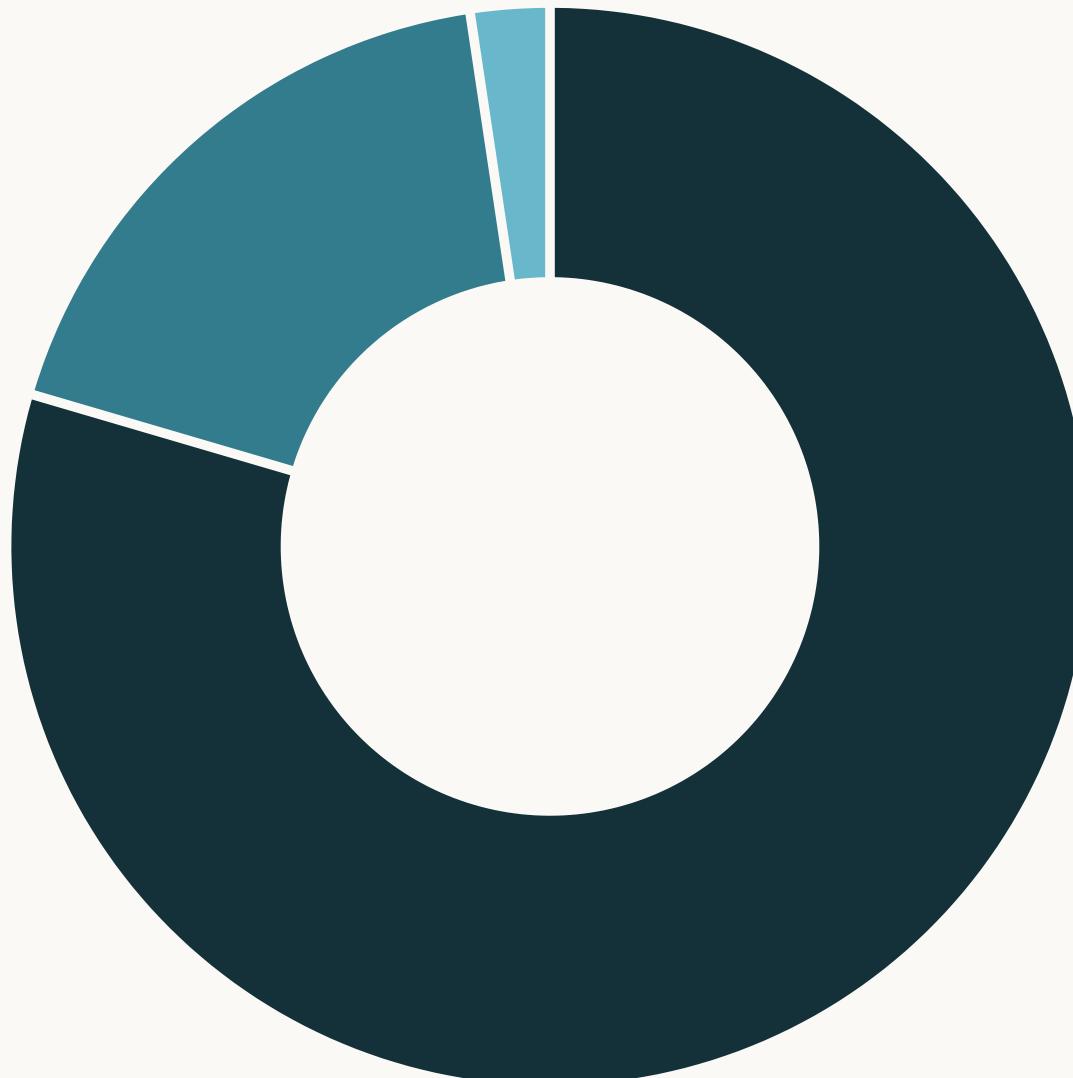
## Margin Balance

Optimize discount strategy to maintain profitability

# Top-Rated Products



# Customer Segmentation Analysis



■ Loyal

■ Returning

■ New



Loyal Customers Dominate

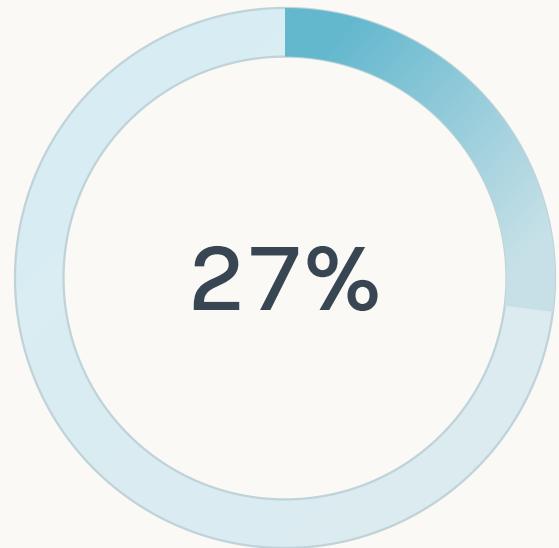
80% of customer base classified as loyal with repeat purchases



Growth Opportunity

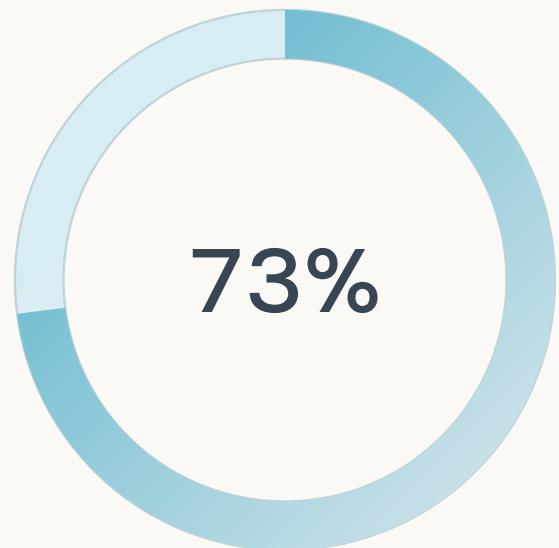
Convert returning buyers into loyal segment through targeted programs

# Subscription Impact



Subscription Rate

1,053 subscribers out of 3,900 customers



Non-Subscribers

2,847 customers without subscriptions

## Revenue Comparison

- Subscribers: \$62,645 total revenue
- Non-subscribers: \$170,436 total revenue
- Average spend nearly identical: ~\$59.50

Repeat buyers with 5+ purchases show higher subscription rates

# Customer Behavior Dashboard

K

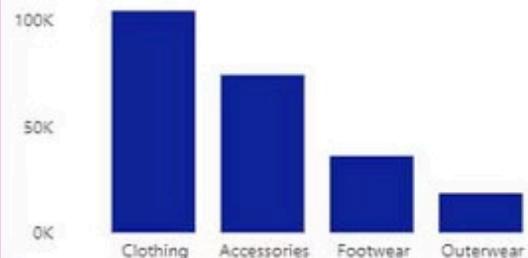
customers

\$59.76

Average Purchase Amount

Subscription Status

Revenue by Category



No 73%

Sales by Age Group



20K

40K

60K

## Interactive Dashboard

Comprehensive Power BI dashboard visualizing all key metrics and customer insights

# Strategic Recommendations



## Boost Subscriptions

Promote exclusive benefits to convert non-subscribers



## Loyalty Programs

Reward repeat buyers to strengthen loyal segment



## Optimize Discounts

Balance sales growth with margin control



## Highlight Top Products

Feature best-rated items in marketing campaigns



## Targeted Marketing

Focus on high-revenue age groups and express shipping users