



# Understanding Customer Shopping Behavior

Data-driven insights from 3,900 transactions to guide marketing, product development, and customer experience strategy

# Dataset Overview

## Scale

3,900 transactions analyzed across 18 key features

## Demographics

Age, gender, location, subscription status tracked

## Purchase Details

Category, amount, season, size, color, discounts

## Behavior Metrics

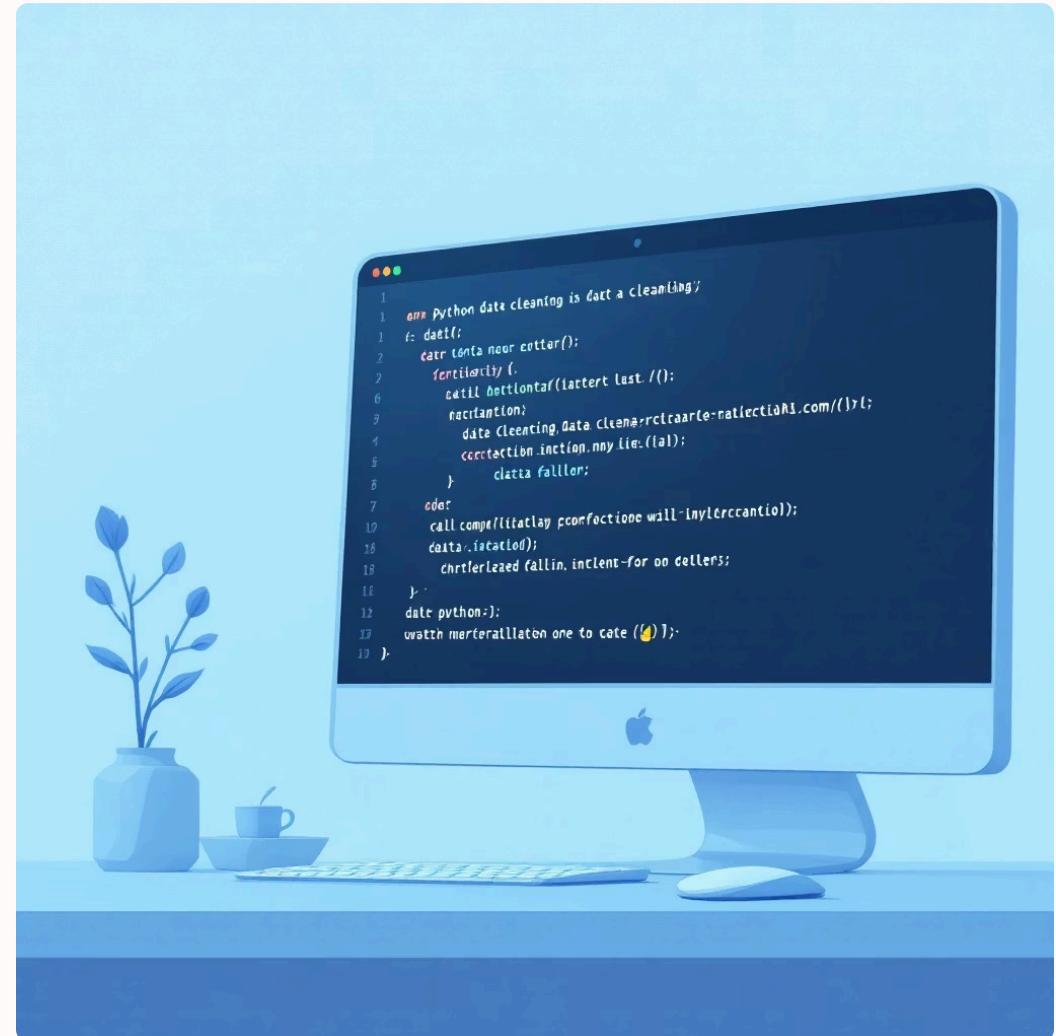
Frequency, ratings, shipping preferences, loyalty patterns



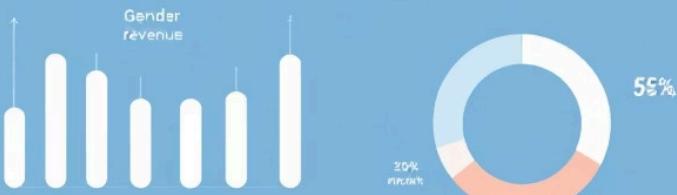
# Data Preparation & Cleaning

## Python Processing

- Loaded dataset with pandas
- Explored structure and statistics
- Imputed 37 missing review ratings using median
- Standardized columns to snake\_case
- Created age\_group and purchase\_frequency\_days features
- Removed redundant promo\_code\_used column



Connected to PostgreSQL for structured SQL analysis



Desmont (2022)

# Revenue Insights by Gender

**\$1.2M**

# Male Revenue

Slightly higher total spending

Both segments contribute significantly—balanced marketing approach recommended

**\$1.1M**

# Female Revenue

Strong purchasing power

# Discount Strategy Analysis

## Key Finding

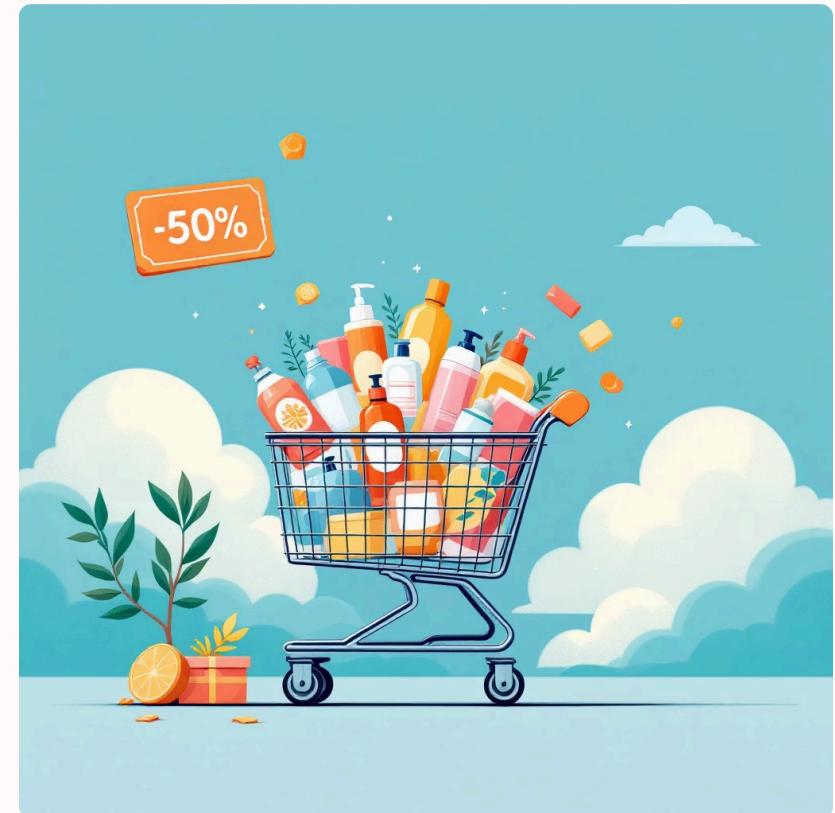
High-spending customers still use discounts—they're not just for budget shoppers

## Top Discount-Dependent Products

5 products show highest percentage of discounted purchases, indicating price sensitivity

## Shipping Preferences

Express shipping users spend more on average than standard shipping customers



# Product Performance Leaders

## Top-Rated Items

5 products achieved highest average review ratings

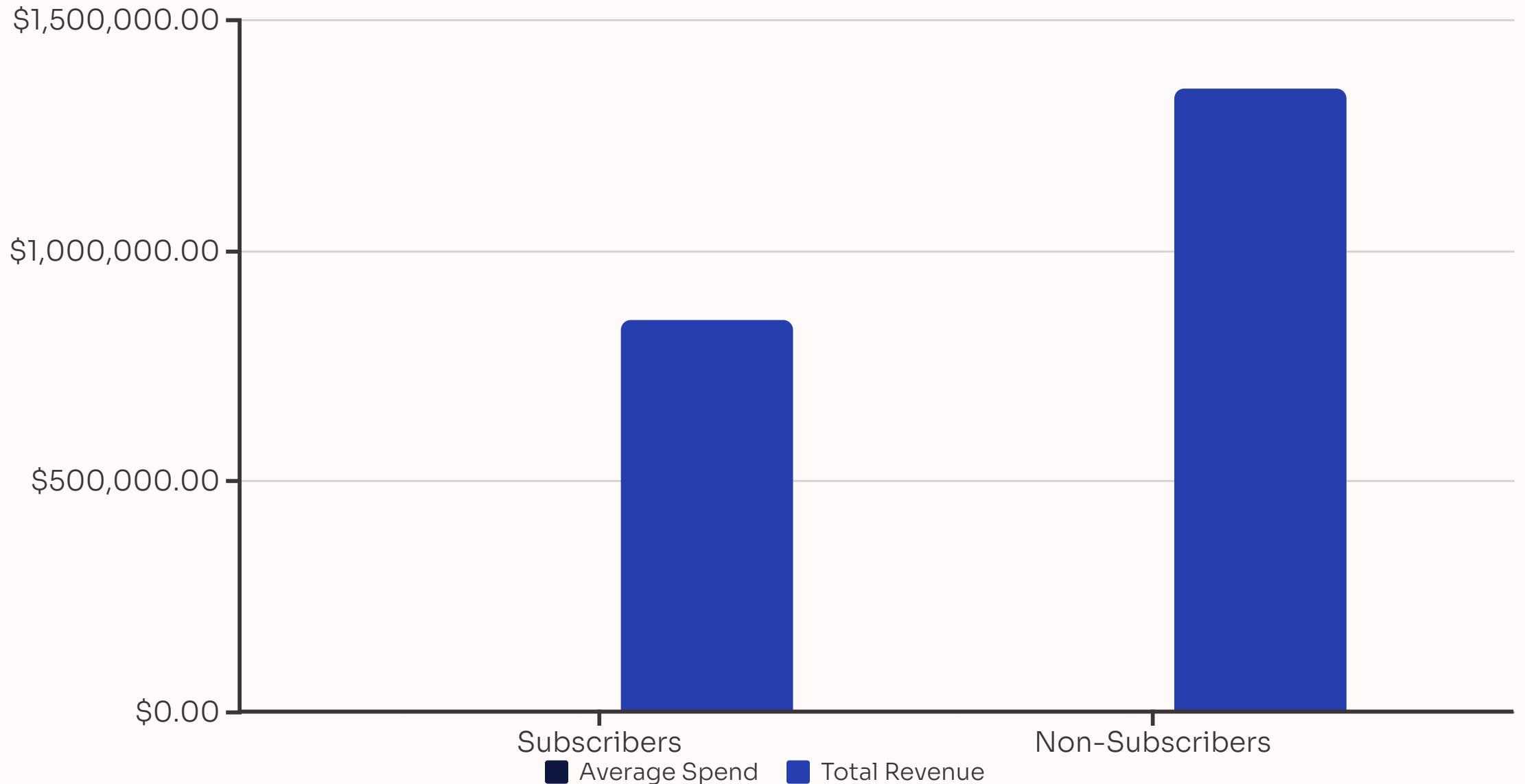
## Category Leaders

Top 3 most purchased products identified per category

## Customer Favorites

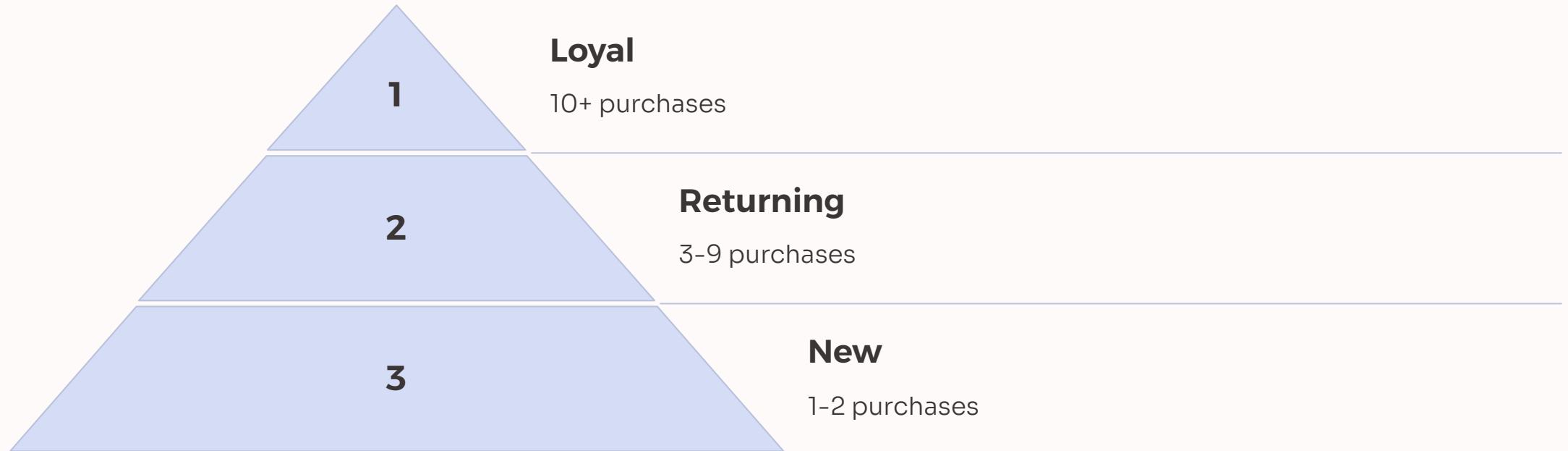
Highlight these in marketing campaigns

# Subscription Impact



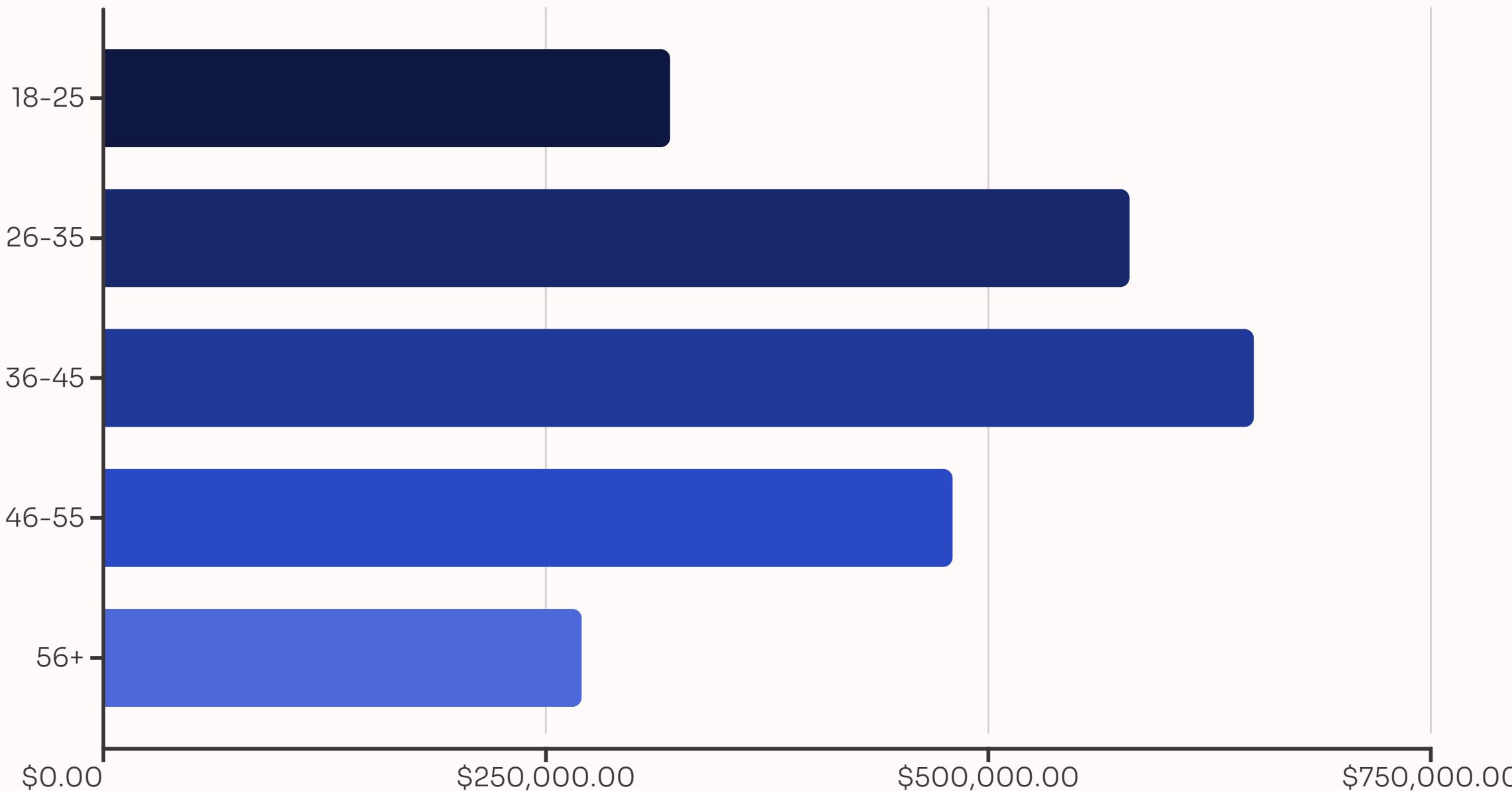
Subscribers spend more per transaction—opportunity to convert non-subscribers with exclusive benefits

# Customer Segmentation



Customers with >5 purchases show higher subscription rates—loyalty drives engagement

# Age Group Revenue Contribution



36-45 age group generates highest revenue—prioritize targeted campaigns for this demographic

# Strategic Recommendations

1

## Boost Subscriptions

Promote exclusive benefits and perks for subscribers

2

## Loyalty Programs

Reward repeat buyers to move them into "Loyal" segment

3

## Review Discount Policy

Balance sales growth with margin control

4

## Product Positioning

Highlight top-rated and best-selling items in campaigns

5

## Targeted Marketing

Focus on high-revenue age groups and express-shipping users