



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

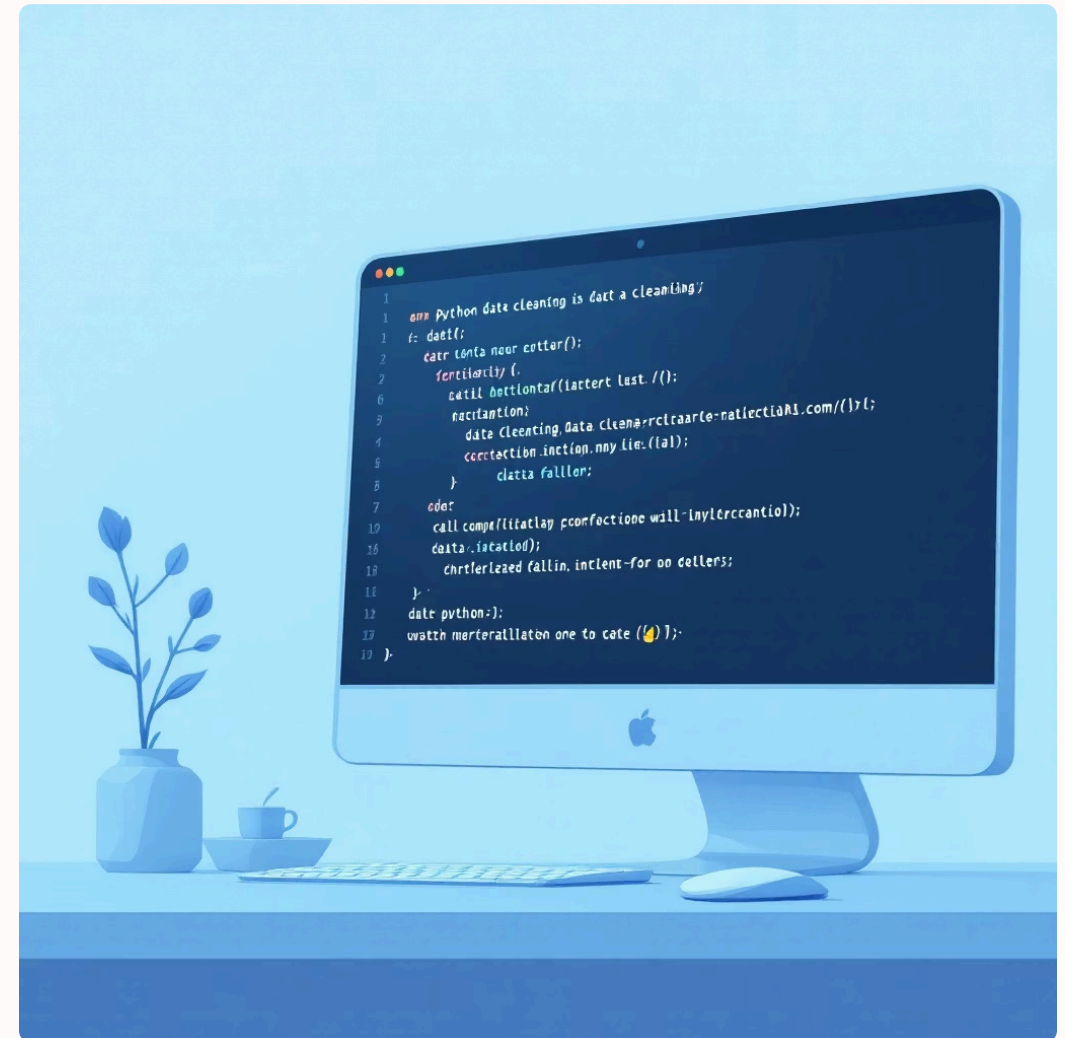
Frequency, ratings, shipping preferences, loyalty patterns



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

Revenue Insights by Gender

\$1.2M

Male Revenue

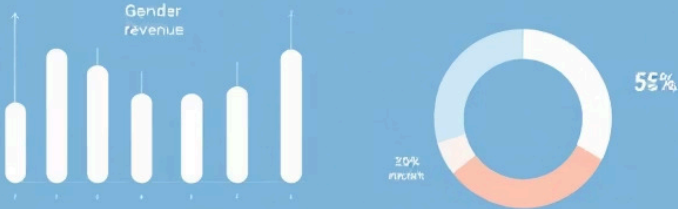
Slightly higher total spending

\$1.1M

Female Revenue

Strong purchasing power

Both segments contribute significantly—balanced marketing approach recommended



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

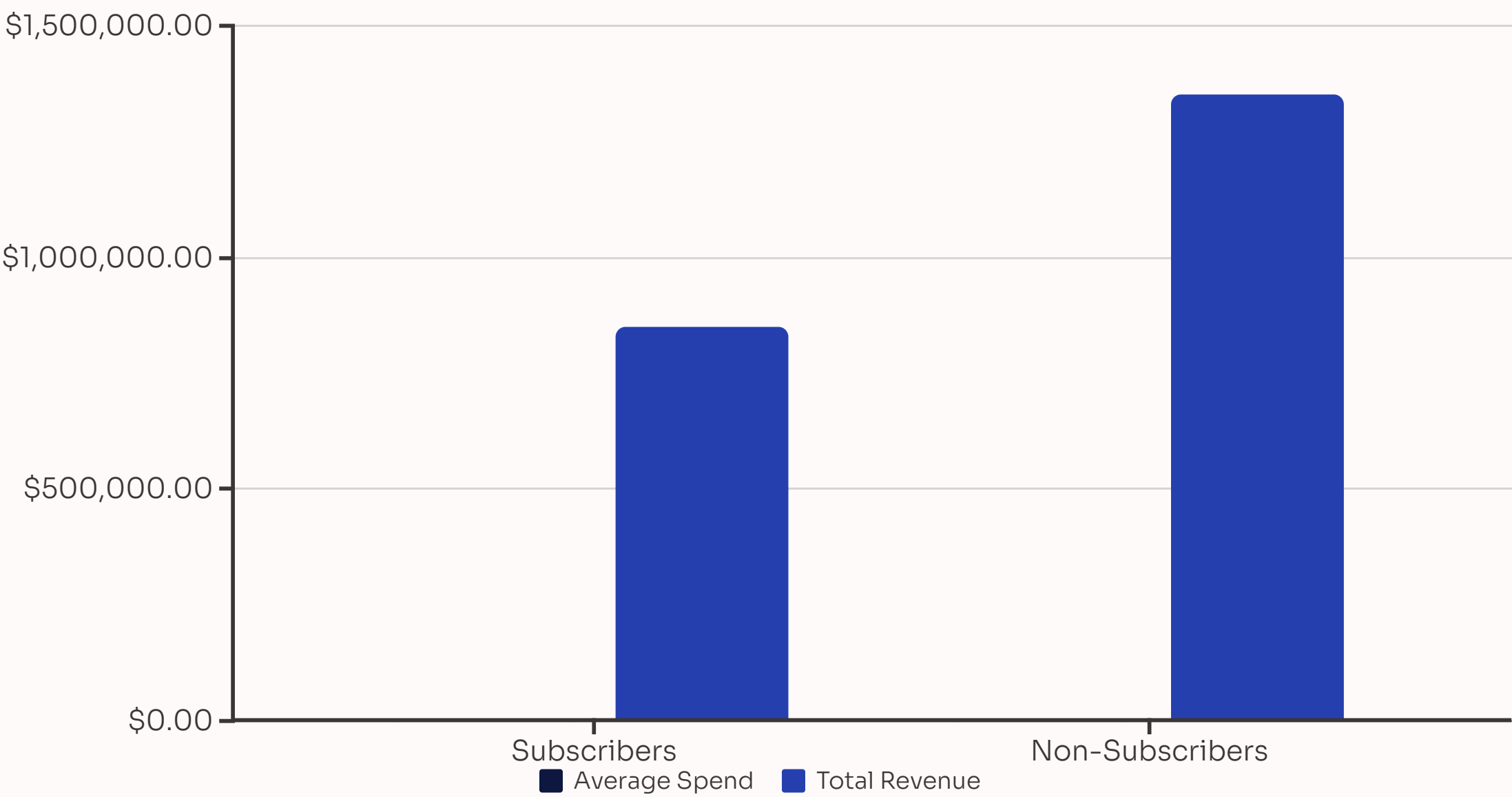
Category Leaders

Top 3 most purchased products identified per category

Customer Favorites

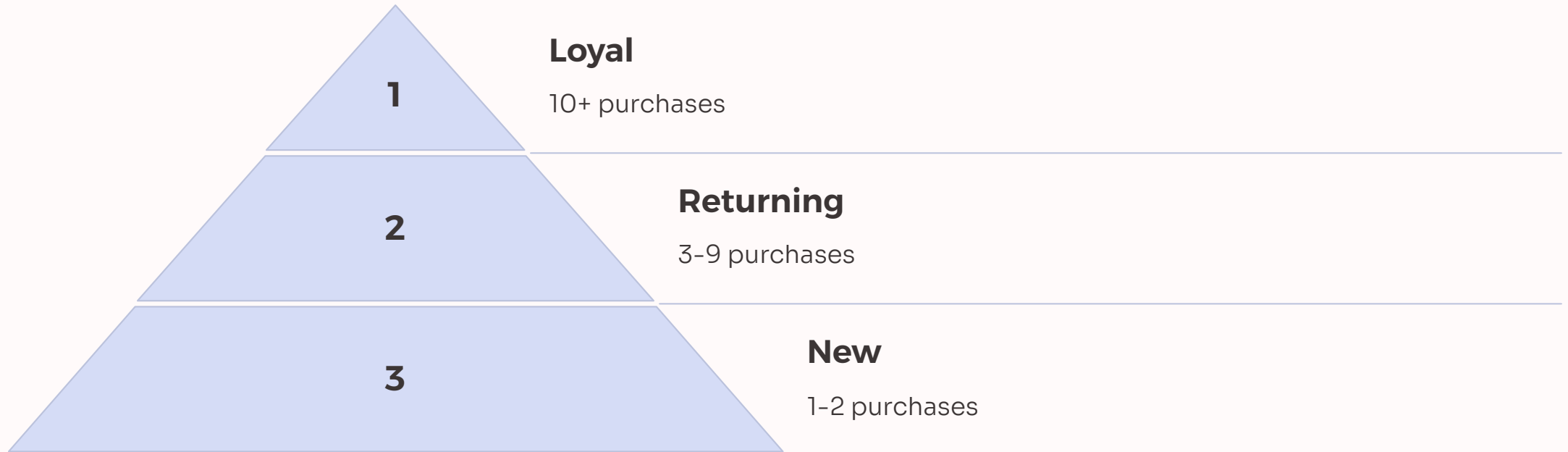
Highlight these in marketing campaigns

Subscription Impact



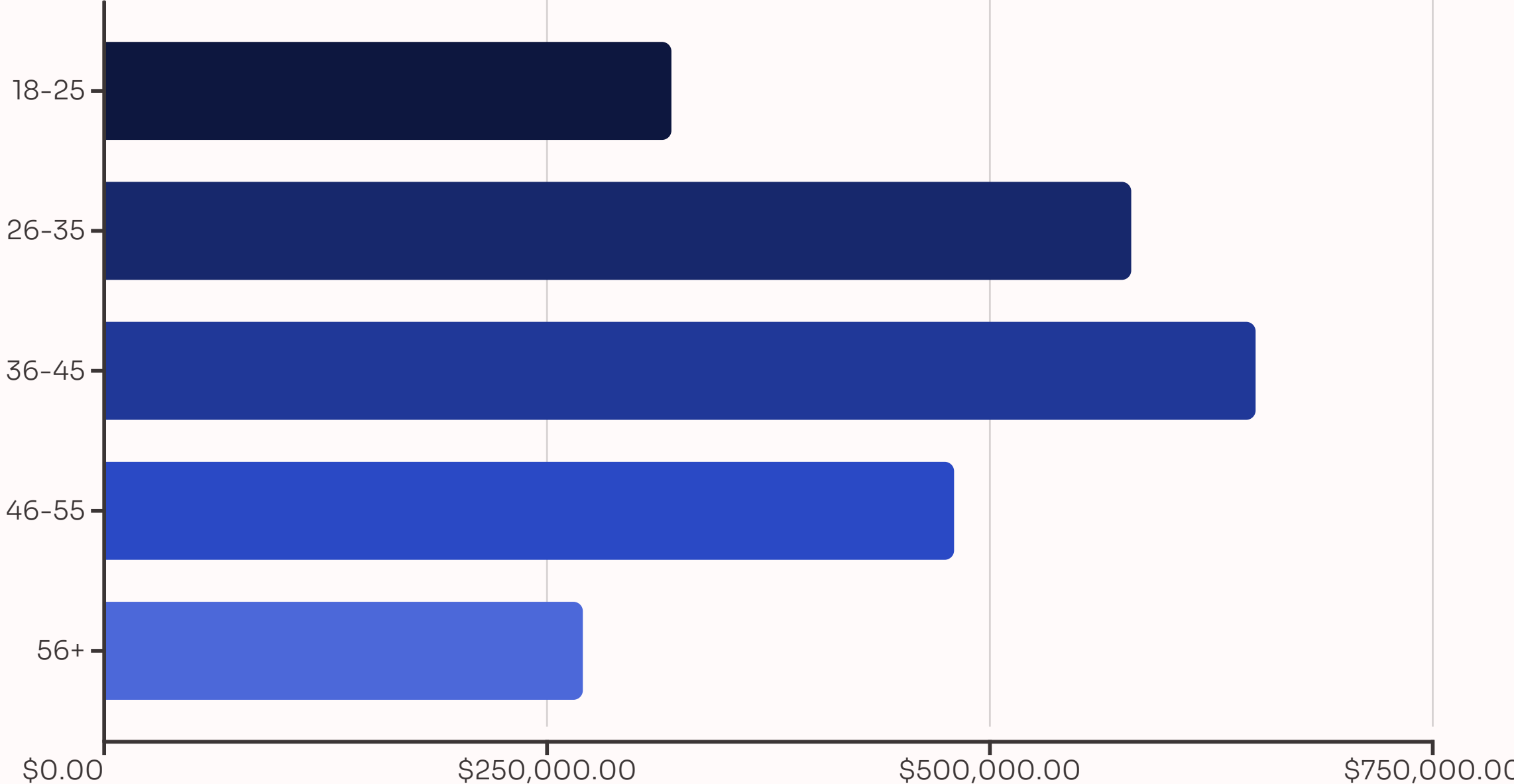
Subscribers spend more per transaction—opportunity to convert non-subscribers with exclusive benefits

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