

Customer Shopping Behavior Analysis

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



Dataset Overview

3,900

Total Purchases

Transactions analyzed
across all categories

18

Data Points

Comprehensive
customer and purchase
attributes

50

Locations

Geographic coverage
across diverse markets

25

Products

Items tracked across 4
major categories



Data Preparation Journey

01

Data Loading & Exploration

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

03

Feature Engineering

Created `age_group` bins and `purchase_frequency_days` for deeper insights

02

Cleaning & Standardization

Handled 37 missing review ratings, standardized columns to `snake_case` format

04

Database Integration

Connected to PostgreSQL for advanced SQL analysis and querying

Revenue by Gender



Male Customers Drive Revenue

Male shoppers generate **\$157,890** compared to **\$75,191** from female customers

This 68% male revenue share suggests opportunities for targeted female customer campaigns



Smart Discount Users



High-Value Discount Shoppers

839 customers used discounts while spending above average



Strategic Opportunity

These savvy shoppers balance value-seeking with premium purchases

Discount strategies can attract quality customers without sacrificing revenue

Product Performance Insights

Top-Rated Products

- **Gloves**

3.86 average rating

- **Sandals**

3.84 average rating

- **Boots**

3.82 average rating

- **Hat**

3.80 average rating

- **Skirt**

3.78 average rating

Discount-Dependent Items



Hat



Sneakers



Coat



Sweater



Pants



Shipping & Spending Patterns

Standard Shipping

Average purchase: **\$58.46**

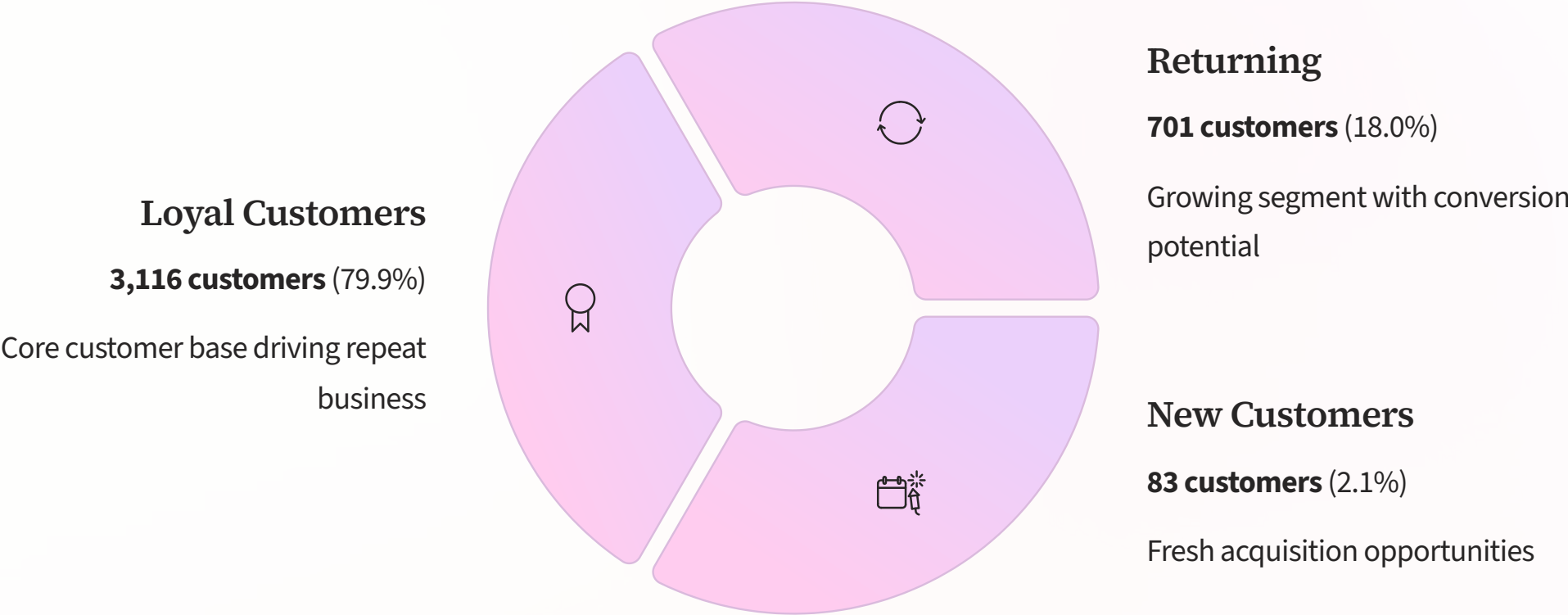
Most popular option for cost-conscious shoppers

Express Shipping

Average purchase: **\$60.48**

Premium customers willing to pay more for speed

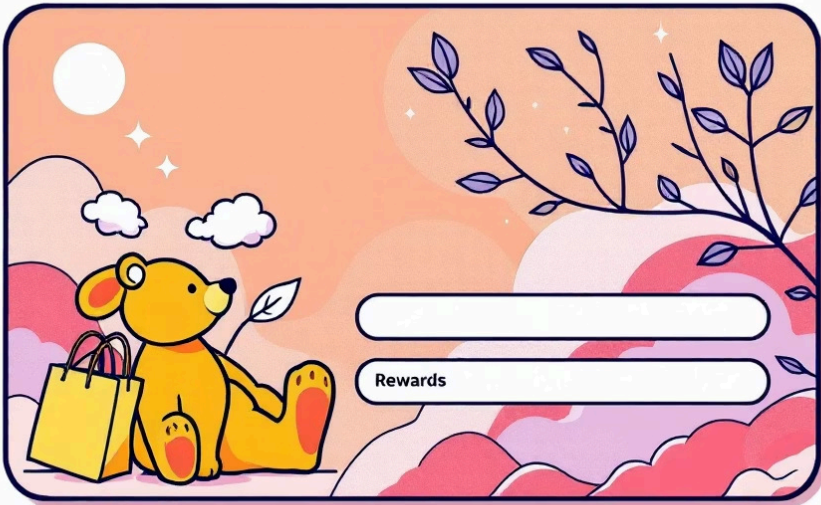
Customer Segmentation



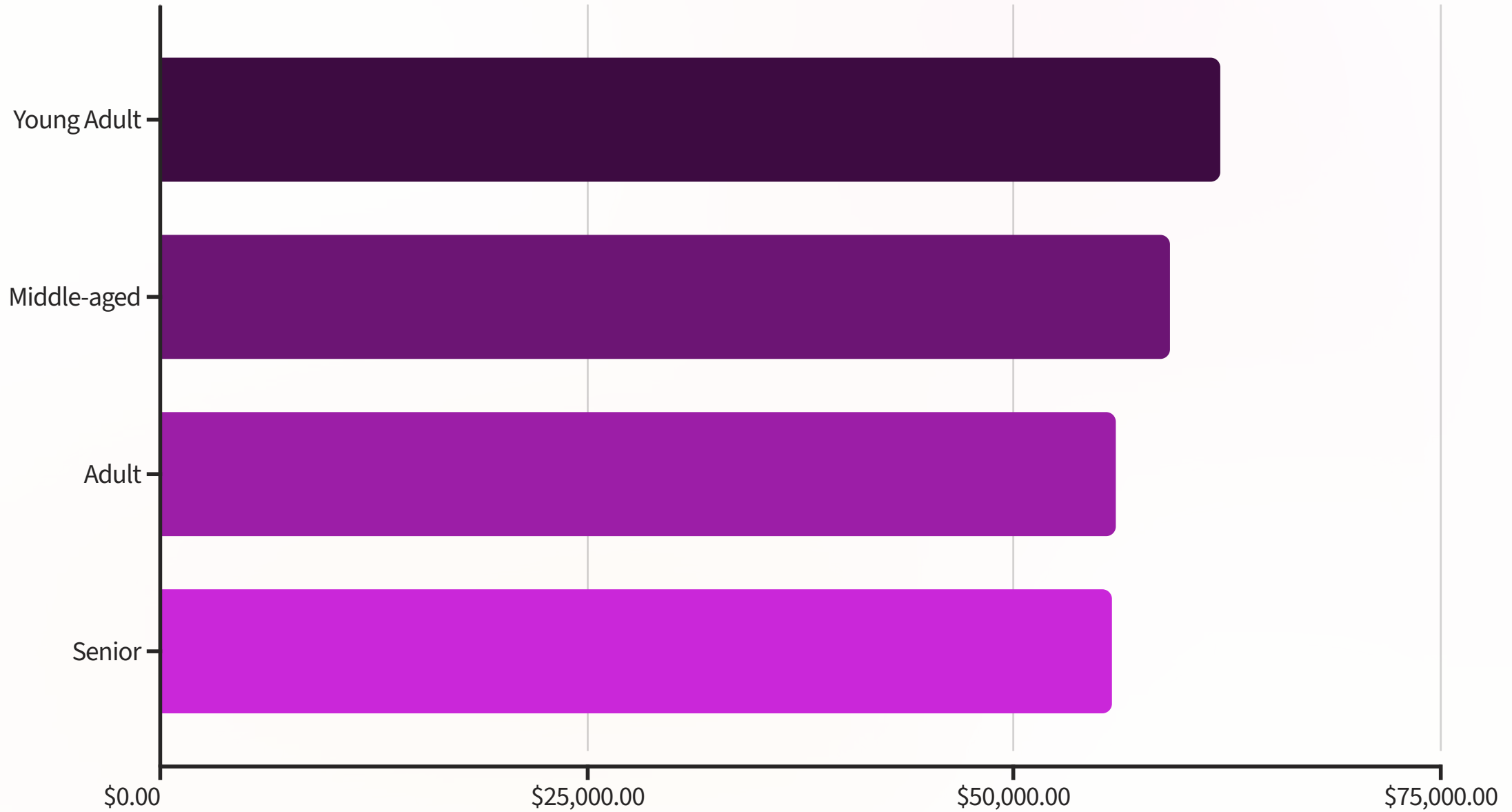
Subscription Impact

Subscribers: **1,053** customers, \$59.49 avg spend

Non-subscribers: **2,847** customers, \$59.87 avg spend



Revenue by Age Demographics



Young adults lead revenue generation, but all age groups contribute relatively evenly

Strategic Recommendations

Boost Subscriptions

Promote exclusive benefits to convert non-subscribers

Loyalty Programs

Reward repeat buyers to strengthen loyal segment

Optimize Discounts

Balance promotional sales with healthy margins

Product Positioning

Highlight top-rated items in marketing campaigns

Targeted Marketing

Focus on high-revenue age groups and express shipping users