

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

Features tracked per
customer

50

Locations

Geographic coverage

25

Products

Unique items
purchased

Data Preparation Journey

01

Data Loading

Imported dataset using pandas,
explored structure with df.info()

02

Cleaning

Imputed 37 missing review ratings
using category medians

03

Standardization

Renamed columns to snake_case for
consistency

04

Feature Engineering

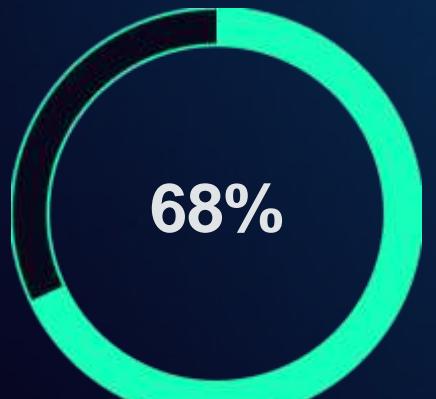
Created age_group and purchase_frequency_days columns

05

Database Integration

Connected to PostgreSQL for advanced SQL analysis

Key Customer Demographics



Male Customers

Dominant customer segment

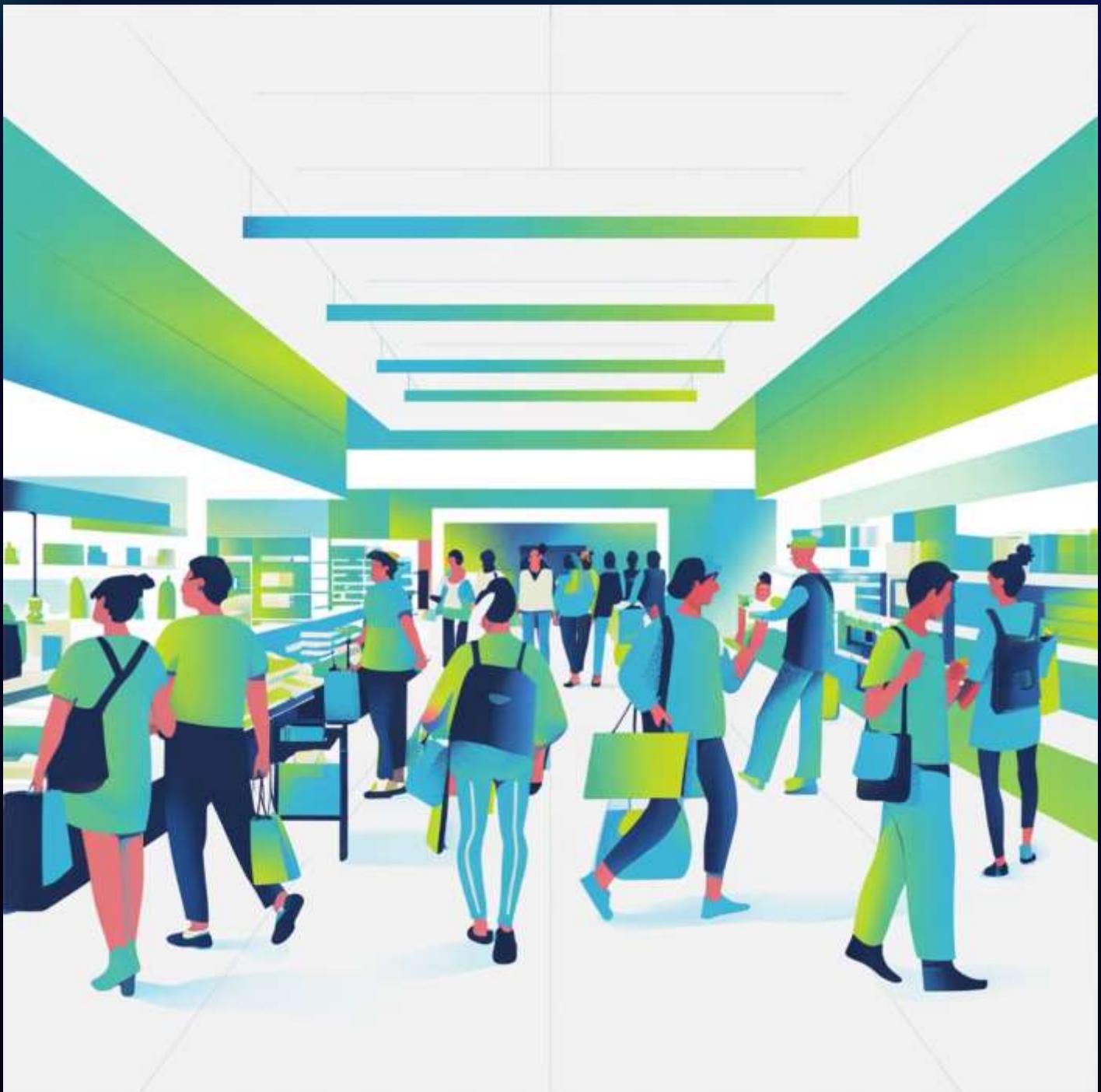


Average Age

Median customer age

Age Distribution

- Range: 18-70 years
- Standard deviation: 15.2 years
- Diverse age segments





Revenue Insights

Male Revenue

\$157,890

68% of total revenue

Female Revenue

\$75,191

32% of total revenue

Average Purchase

\$59.76

Range: \$20-\$100

Male customers drive majority of revenue, presenting opportunity for targeted female customer campaigns

Customer Segmentation



Subscription Status

- Non-subscribers: 2,847 (73%)
- Subscribers: 1,053 (27%)
- Similar avg spend: ~\$60

Repeat Buyer Insight

- Of customers with 5+ purchases:
- 958 are subscribers
 - 2,518 are not subscribed
 - Huge subscription opportunity



Top Performing Products

Highest Rated

1

Gloves - 3.86 rating

Followed by Sandals (3.84) and Boots (3.82)

Most Popular

2

Blouse, Jewelry, Pants

171 orders each across categories

Discount Leaders

3

Hat - 50% discount rate

Sneakers (49.66%) and Coat (49.07%) follow



Shopping Behavior Patterns

Shipping Preferences

Express: \$60.48 avg

Standard: \$58.46 avg

Express users spend 3.5% more

Discount Usage

839 customers used discounts but spent above average

Discounts drive volume without sacrificing value

Purchase Frequency

Most common: Every 3 Months

Average: 25 previous purchases per customer

Revenue by Age Group

Young Adult (18-30)

\$62,143 total revenue

Highest revenue segment - prime target for growth

Adult (31-44)

\$55,978 total revenue

Stable mid-range spending patterns

Middle-aged (45-57)

\$59,197 total revenue

Consistent purchasing behavior

Senior (58-70)

\$55,763 total revenue

Loyal customer base with steady spend

Strategic Recommendations



Boost Subscriptions

2,518 repeat buyers aren't subscribed
- promote exclusive benefits to convert



Loyalty Programs

Reward returning customers to accelerate movement into loyal segment



Optimize Discounts

Balance promotional sales with margin control - focus on strategic products



Targeted Marketing

Focus on young adults and express shipping users for maximum ROI



Product Positioning

Highlight top-rated items (Gloves, Sandals, Boots) in campaigns