



Customer Shopping Behavior Analysis

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



OVERVIEW

Project Scope

Dataset Size

3,900 purchases analyzed

18 key features tracked

Focus Areas

Spending patterns

Customer segments

Product preferences

Goal

Drive strategic business decisions through data insights

Dataset Overview

Customer Demographics

- Age, Gender, Location
- Subscription Status

3,900

Total Rows

Purchase Details

- Item, Category, Amount
- Season, Size, Color

18

Shopping Behavior

- Discounts & Promo Codes
- Previous Purchases
- Review Ratings
- Shipping Type

Key Features

37

Missing Values

Review Rating column only



PYTHON

Data Preparation & Cleaning

01

Data Loading

Imported dataset using pandas

02

Initial Exploration

Structure check and summary statistics

03

Missing Data Handling

Imputed Review Rating using median by category

04

Feature Engineering

Created age_group and purchase_frequency_days

05

Database Integration

Loaded cleaned data into PostgreSQL

Key Business Insights



Revenue by Gender

Male: \$157,890

Female: \$75,191



Top Rated Products

Gloves: 3.86

Sandals: 3.84

Boots: 3.82

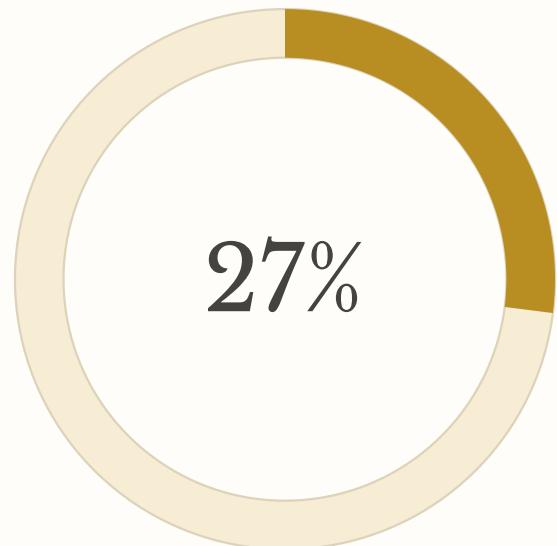


Shipping Preferences

Express: \$60.48 avg

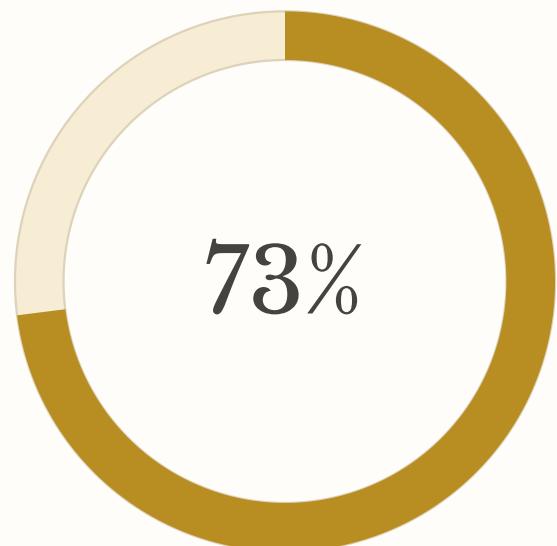
Standard: \$58.46 avg

Subscription Analysis



Subscribers

1,053 customers



Non-Subscribers

2,847 customers

Spending Comparison

Subscribers: \$59.49 average

Non-Subscribers: \$59.87 average

Total Revenue:

Subscribers: \$62,645

Non-Subscribers: \$170,436

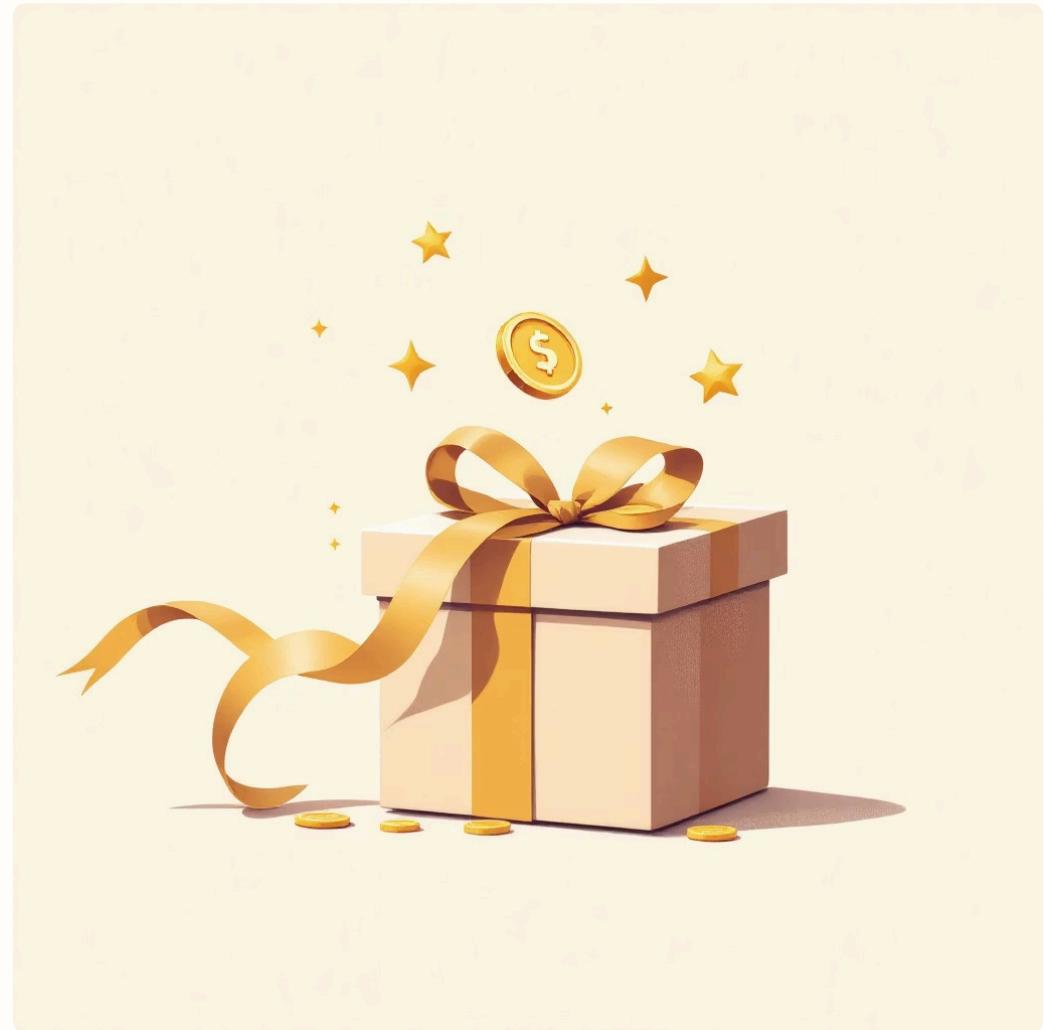
Customer Loyalty Distribution



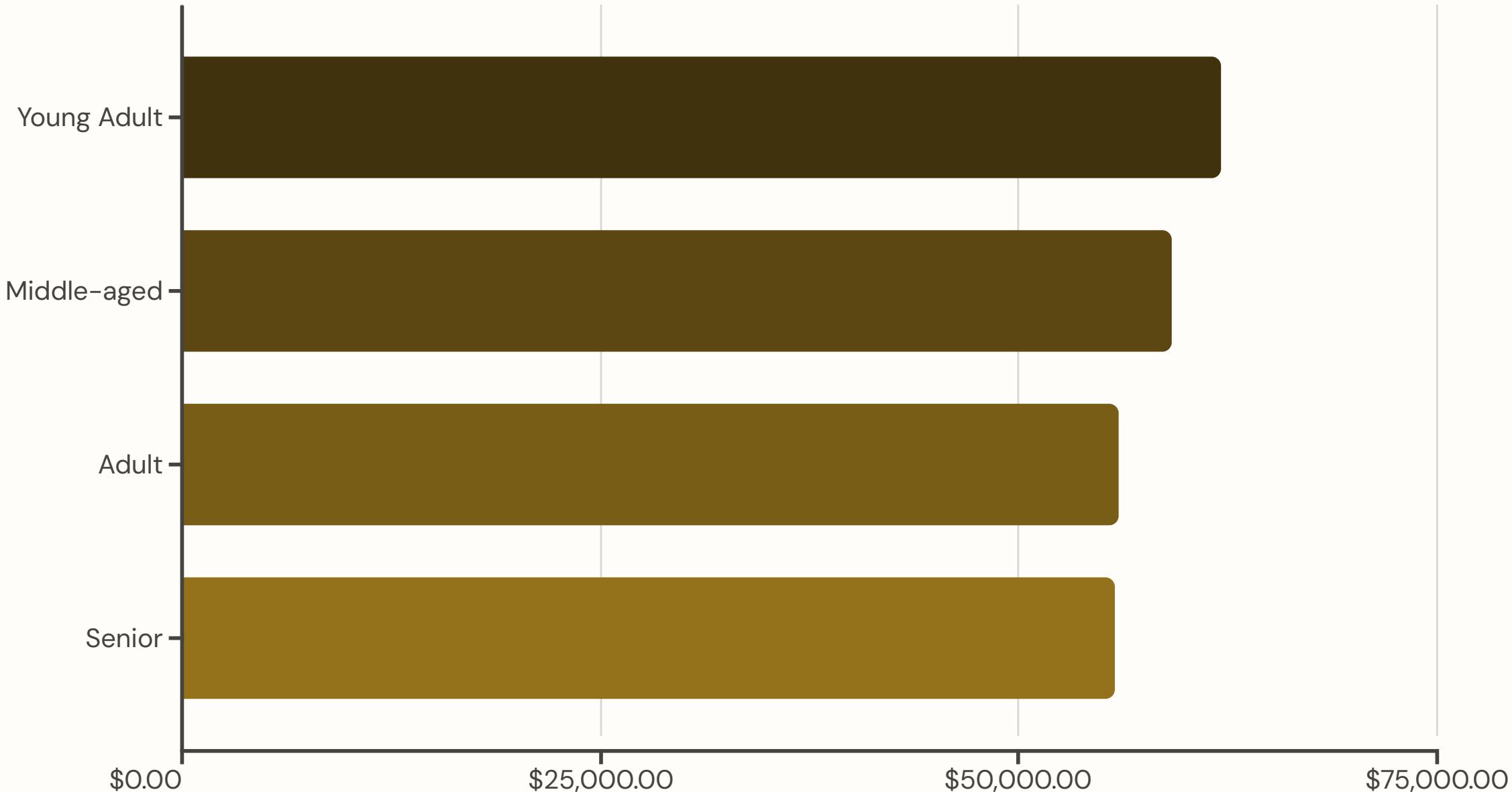
Repeat Buyers & Subscriptions

Customers with 5+ purchases:

- Subscribers: 958
- Non-subscribers: 2,518



Revenue by Age Group



Young adults drive highest revenue, followed closely by middle-aged customers. All segments show balanced contribution.

Interactive Dashboard

Key Metrics

3.9K customers

\$59.76 avg purchase

3.75 avg rating

Top Category

Clothing leads with \$100K revenue and 1,800 sales

Interactive Filters

Subscription, Gender, Category, Shipping Type

Customer Behavior Dashboard



Customers

\$59.76

Average Purchase Amount

Subscription Status

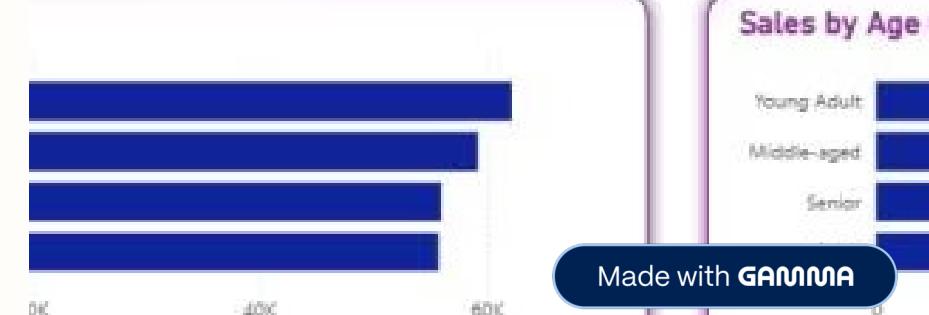


No 73%

Revenue by Category



Sales by Age



Strategic Action Plan



Boost Subscriptions

Promote exclusive benefits to convert 73% non-subscribers



Loyalty Programs

Reward repeat buyers to grow loyal segment



Review Discount Policy

Balance sales boosts with margin control



Product Positioning

Highlight top-rated items in campaigns



Targeted Marketing

Focus on high-revenue age groups and express shipping users