DATASET OVERVIEW

The Foundation

3,900
Total Purchases
Transactions analyzed

18
Data Points
Features per customer

$59.76
Avg Purchase
Per transaction

3.75
Avg Rating
Customer satisfaction

Customer Shopping Behavior Analysis

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

Data Preparation Journey

01

Data Loading

Imported dataset using pandas

02

Exploration

Structure check and summary statistics

03

Missing Data

Imputed Review Rating with median by category

04

Feature Engineering

Created age groups and purchase frequency metrics

05

Database Integration

Connected to PostgreSQL for SQL analysis

Revenue by Gender

Male　**Female**

Male customers drive 68% of total revenue

Significant opportunity to increase female customer engagement and spending

Top Products & Shipping Insights

Highest Rated

1. Gloves (3.86)
2. Sandals (3.84)
3. Boots (3.82)
4. Hat (3.80)
5. Skirt (3.78)

Shipping Comparison

Express: $60.48 avg
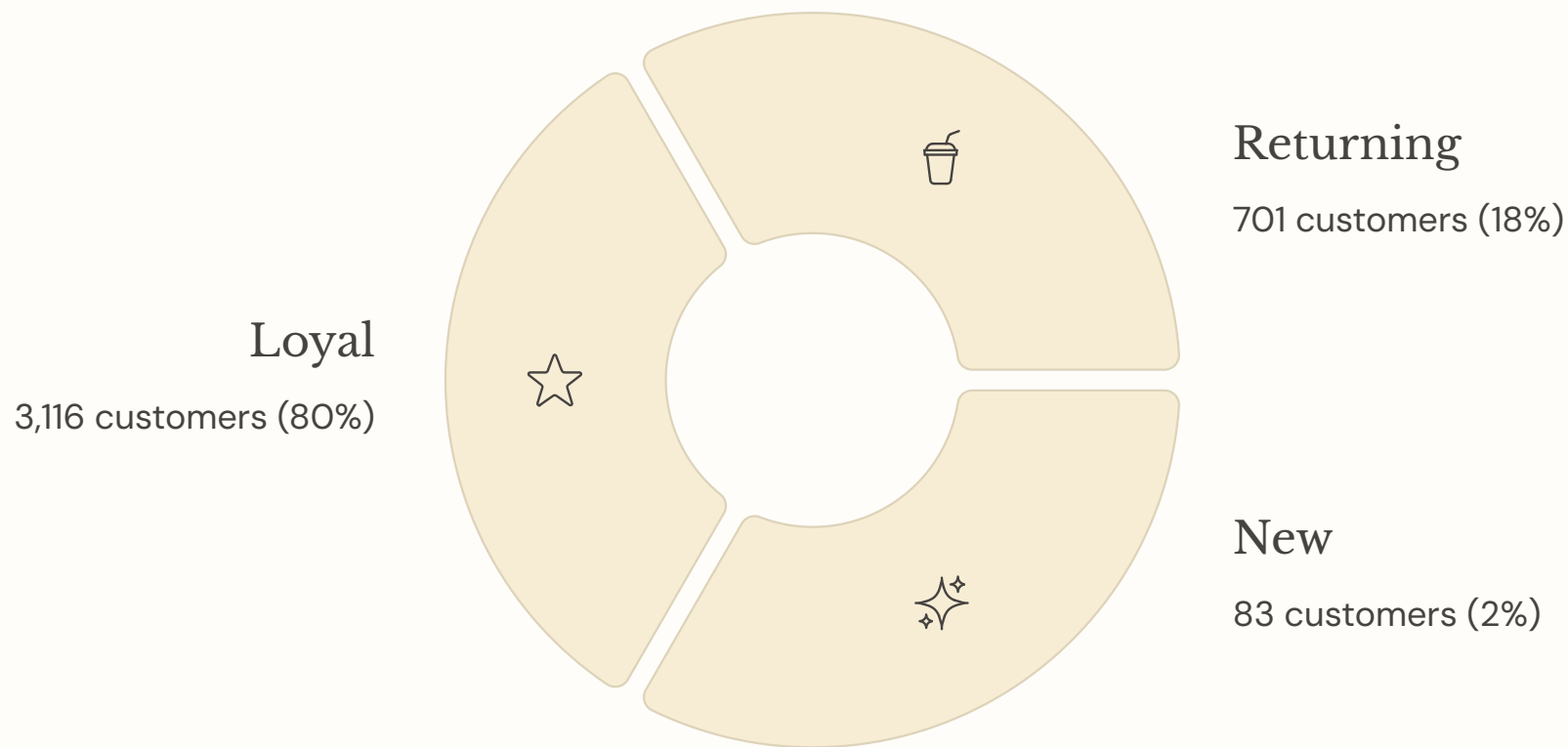
Standard: $58.46 avg

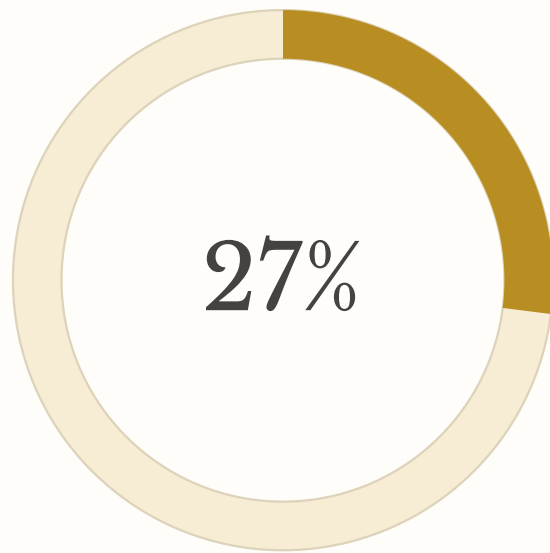Express users spend 3.5% more per order

Discount Leaders

1. Hat (50%)
2. Sneakers (49.66%)
3. Coat (49.07%)
4. Sweater (48.17%)
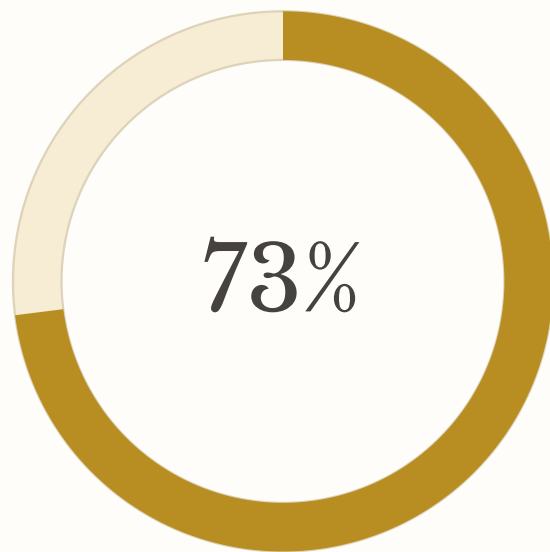5. Pants (47.37%)

Customer Segmentation

Returning

701 customers (18%)

Loyal

3,116 customers (80%)

New

83 customers (2%)

Strong loyalty base presents opportunity to convert returning customers into loyal advocates
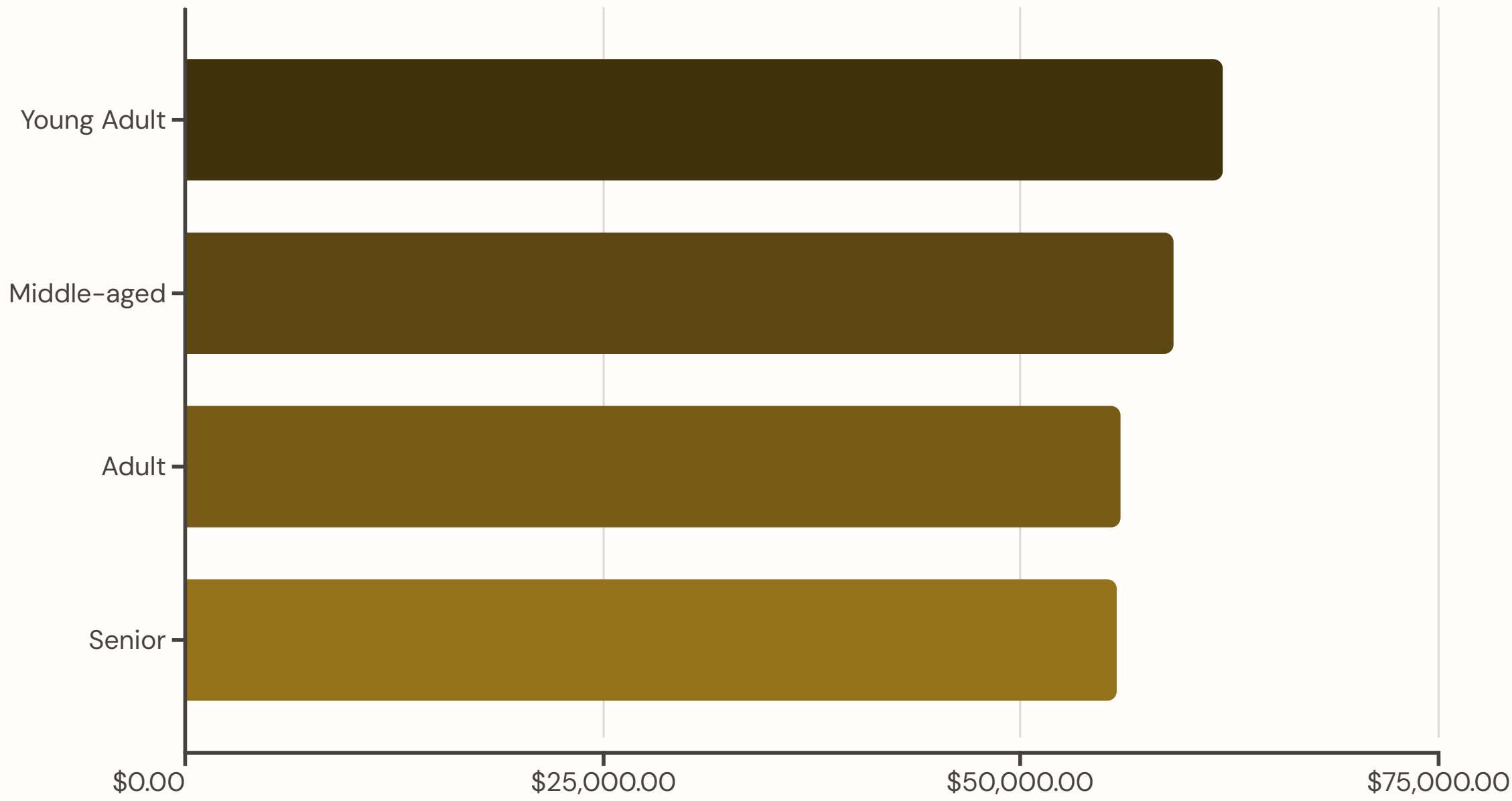
Subscribers vs Non-Subscribers

Similar spending patterns

Subscribers: $59.49 avg

Non-subscribers: $59.87 avg

Repeat buyers (>5 purchases): 958 subscribers vs 2,518 non–subscribers

27%

Subscribers

1,053 customers

73%

Non-Subscribers

2,847 customers

Made with GAMMA

Revenue by Age Group

Young adults lead revenue generation, followed closely by middle-aged customers. Relatively balanced distribution across all age groups.
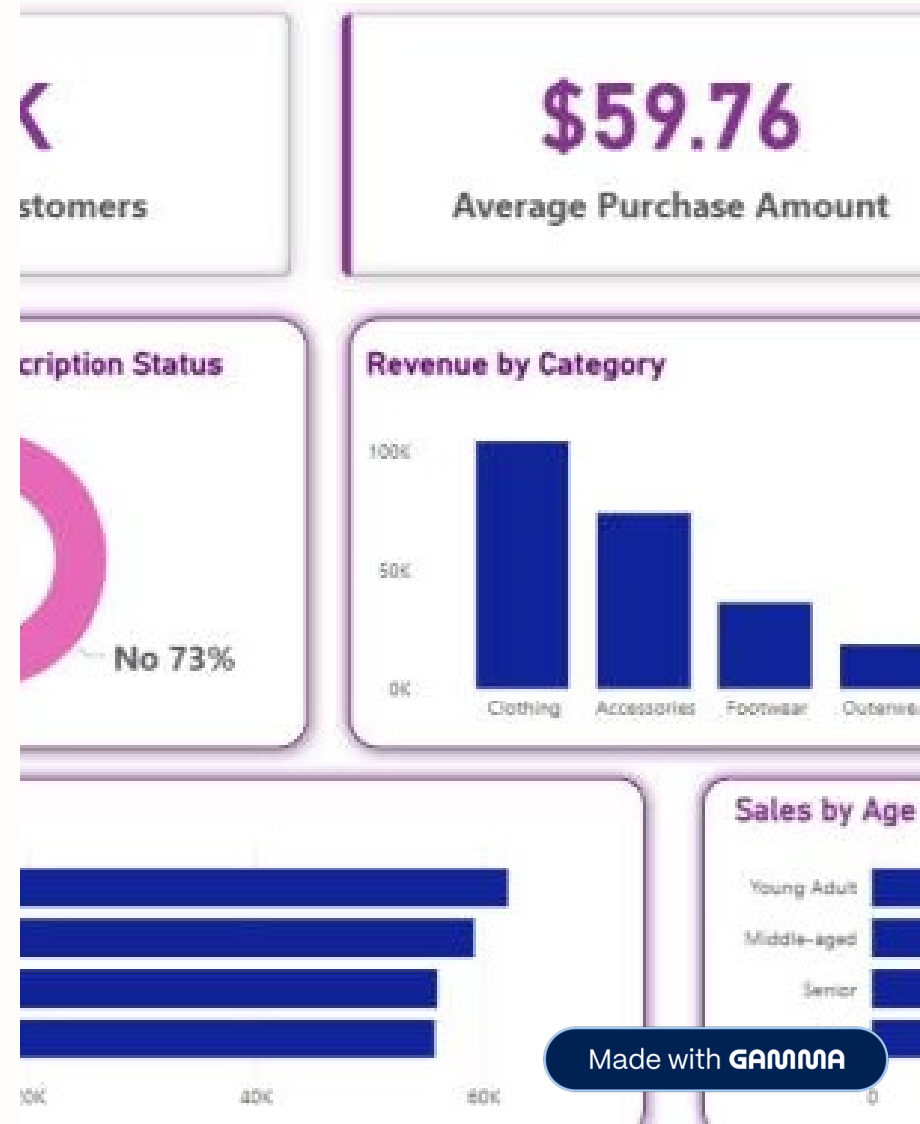
Visual Analytics Overview

Category Performance

Clothing dominates with $100K revenue and 1,800 sales

Interactive Filters

Gender, category, shipping type, and subscription status

Action Plan

Boost Subscriptions
Promote exclusive benefits to convert non-subscribers

Loyalty Programs
Reward repeat buyers to increase retention

Review Discount Policy
Balance sales growth with margin control

Targeted Marketing
Focus on high-revenue segments and express shipping users