Customer Shopping Behavior Analysis
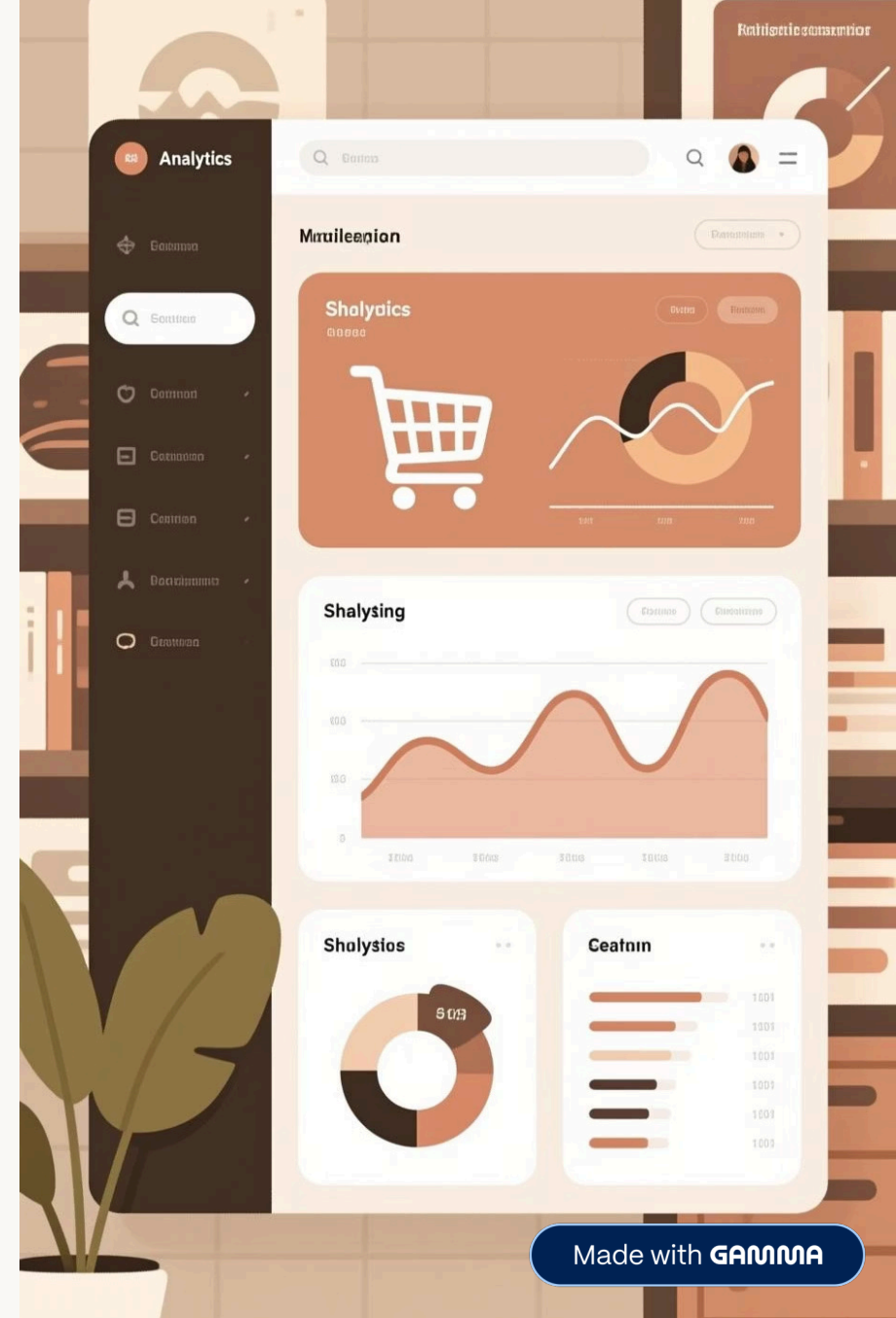
Uncovering insights from 3,900 purchases to drive strategic business decisions

Dataset Overview

3,900
Total Purchases
Transactions analyzed across all categories

18
Data Points
Customer demographics, purchase details, behavior metrics

50
Locations
Geographic distribution of customer base

25
Products
Items tracked across 4 major categories

Data Preparation & Cleaning

01

Data Loading

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

02

Missing Data Handling

Imputed 37 missing Review Rating values using median rating per category

03

Feature Engineering

Created age_group bins and purchase_frequency_days columns for deeper analysis

04

Database Integration

Connected to PostgreSQL and loaded cleaned data for SQL analysis

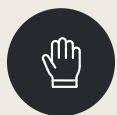# Revenue by Gender
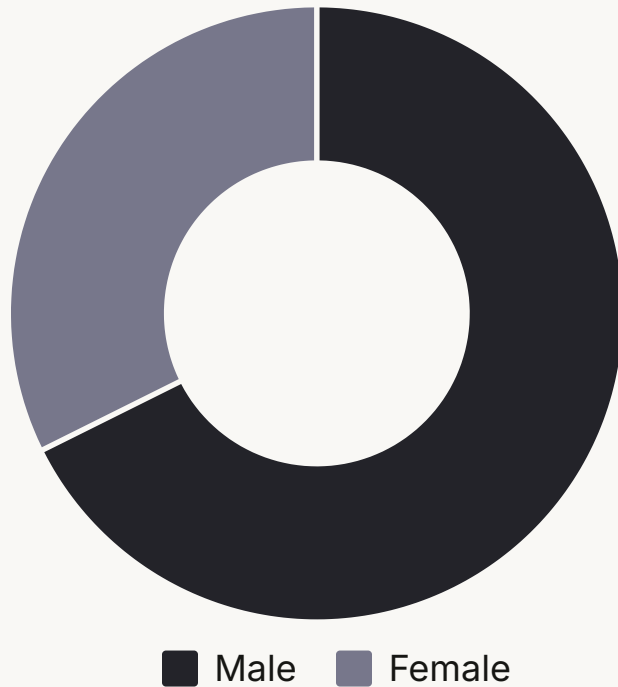
Male ■ Female ■

Key Insight

Male customers generate **68% of total revenue**, more than double female customer spending.

Consider targeted campaigns to increase female customer engagement and spending.

Top Products & Customer Ratings

Gloves

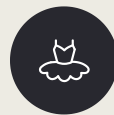Highest rated: 3.86 stars

Sandals

Second best: 3.84 stars

Boots

Strong performer: 3.82 stars

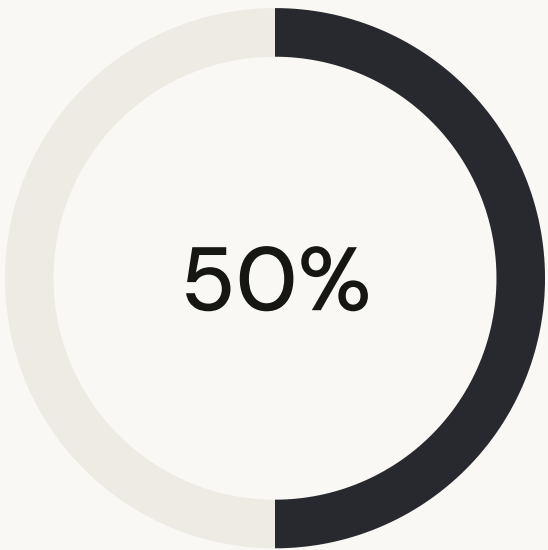**Hat**

Popular choice: 3.80 stars

Skirt

Top five: 3.78 stars

Shipping & Spending Patterns

Express Shipping Premium

Express shipping customers spend **$60.48** on average vs. **$58.46** for standard shipping.
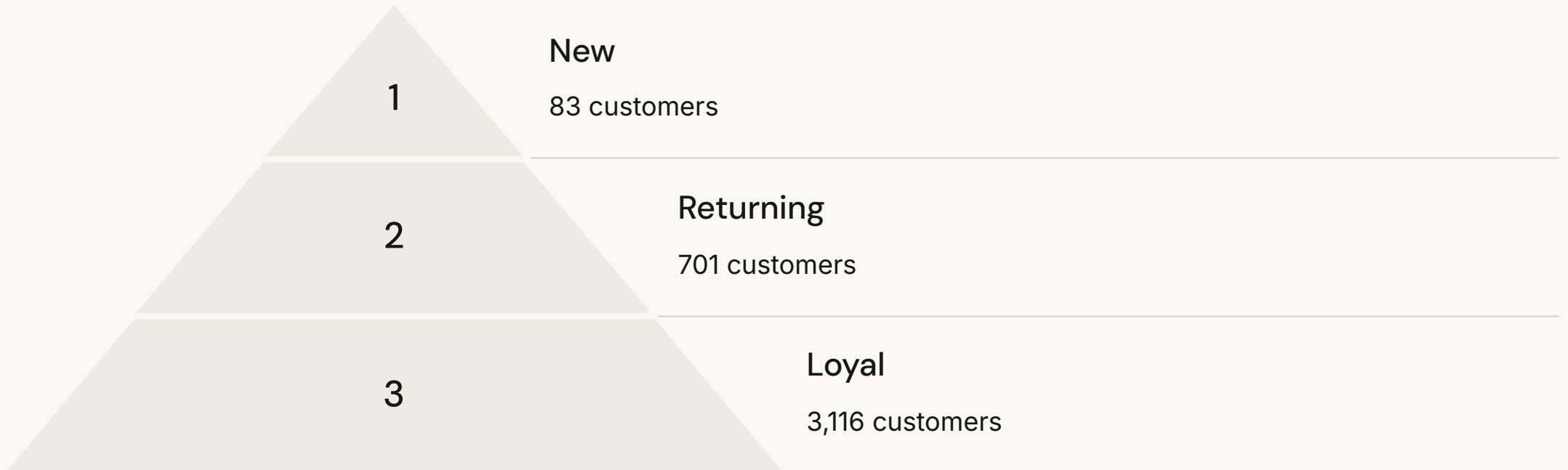
Higher-value customers prefer faster delivery options.

50%

Discount Rate

Hats lead with highest discount usage

839

Smart Spenders

Customers using discounts but spending above average

Customer Segmentation Analysis

1 New
83 customers

2 Returning
701 customers

3 Loyal
3,116 customers

80% of customers are loyal, indicating strong retention but opportunity to convert returning customers into loyal advocates.

Subscription Impact

Subscribers vs. Non–Subscribers

- **1,053** subscribers generating **$62,645** revenue
- **2,847** non-subscribers generating **$170,436** revenue
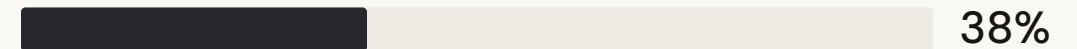- Average spend nearly identical: **$59.49** vs. **$59.87**

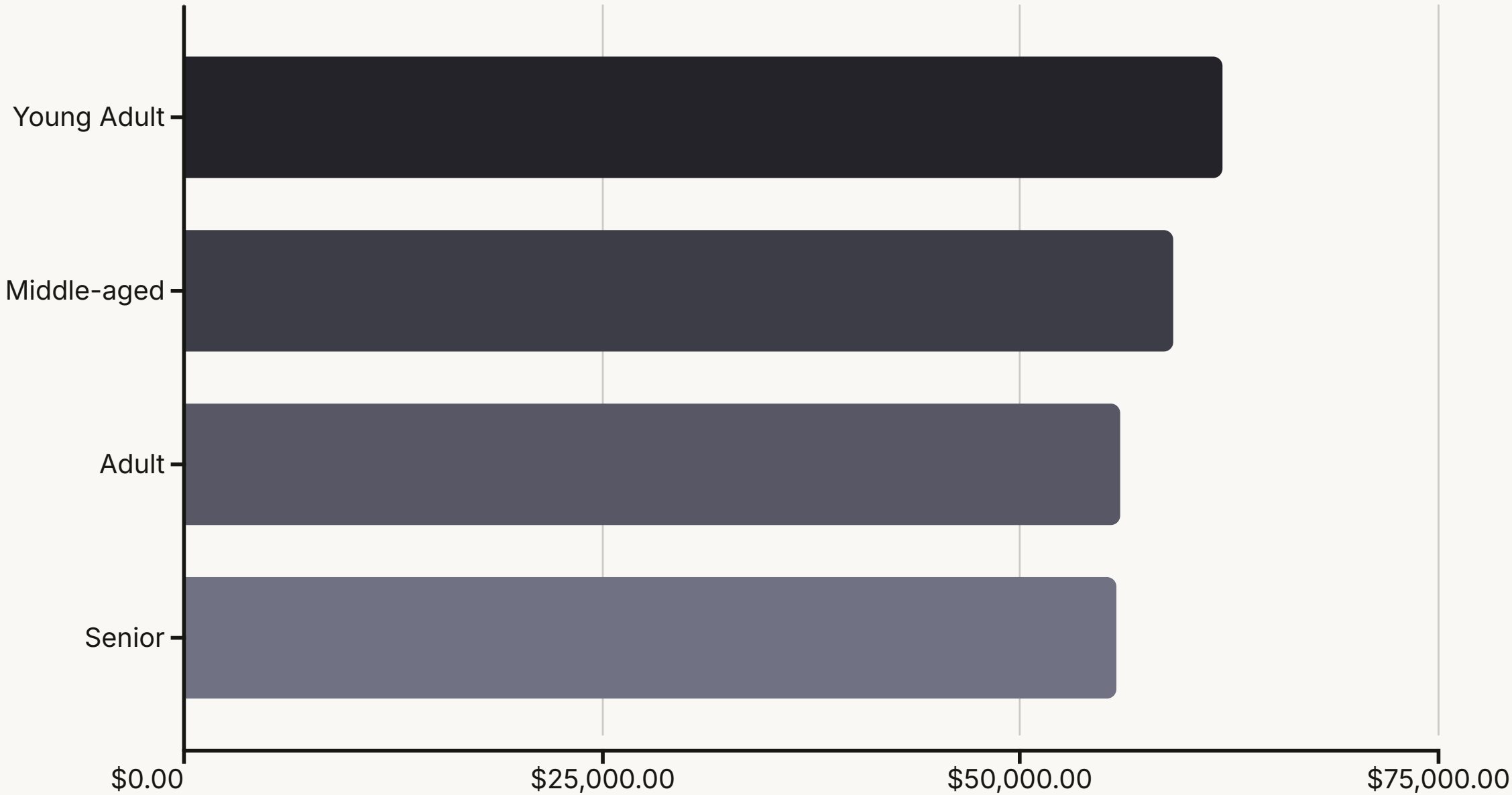## Repeat Buyer Insight

Among customers with 5+ purchases:

62%

Not Subscribed

2,518 repeat buyers

38%

Subscribed

958 repeat buyers

Revenue by Age Group

Young adults lead revenue generation, but all age groups contribute relatively evenly—indicating broad market appeal.

Made with GAMMA

Strategic Recommendations

Boost Subscriptions
Promote exclusive benefits to convert 2,518 repeat non-subscribers into loyal subscribers

Customer Loyalty Programs
Reward repeat buyers to accelerate movement from returning to loyal segment

Review Discount Policy
Balance 50% discount rates on popular items with margin control strategies

Product Positioning
Highlight top-rated products (Gloves, Sandals, Boots) in marketing campaigns

Targeted Marketing
Focus on young adults and express-shipping users for premium product offerings