



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 Columns

Comprehensive customer
and purchase attributes

50

Locations

Geographic diversity in
customer base

25

Product Types

Wide variety of items
purchased

Data Preparation Journey

01

Data Loading & Exploration

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

02

Cleaning & Standardization

Handled 37 missing review ratings, standardized columns to snake_case format

03

Feature Engineering

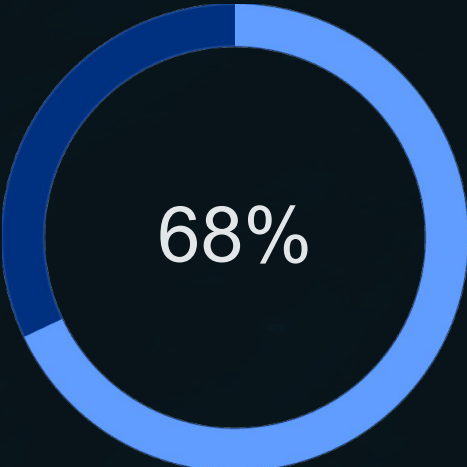
Created `age_group` bins and `purchase_frequency_days` for deeper analysis

04

Database Integration

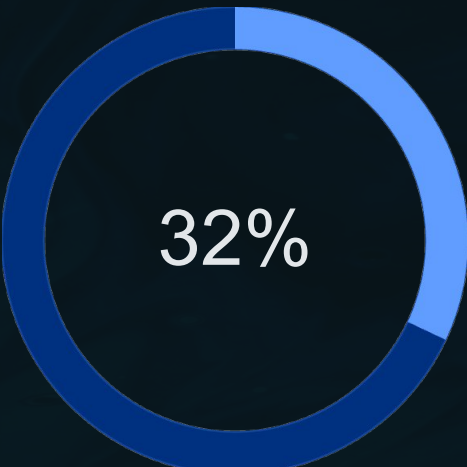
Connected to PostgreSQL, loaded cleaned data for SQL analysis

Revenue by Gender



Male Customers

\$157,890 total revenue



Female Customers

\$75,191 total revenue

Male customers drive majority of revenue, representing significant opportunity for targeted marketing campaigns.





839 Customers

Smart Spenders

Strategic Insight

Discounts attract quality buyers, not just bargain hunters

Top-Rated Products



Highlight these top performers in marketing campaigns to drive conversions

Shipping & Subscription Insights

Shipping Type Comparison

Express: \$60.48 avg spend

Standard: \$58.46 avg spend

Express shippers spend 3.5% more per order

Subscription Analysis

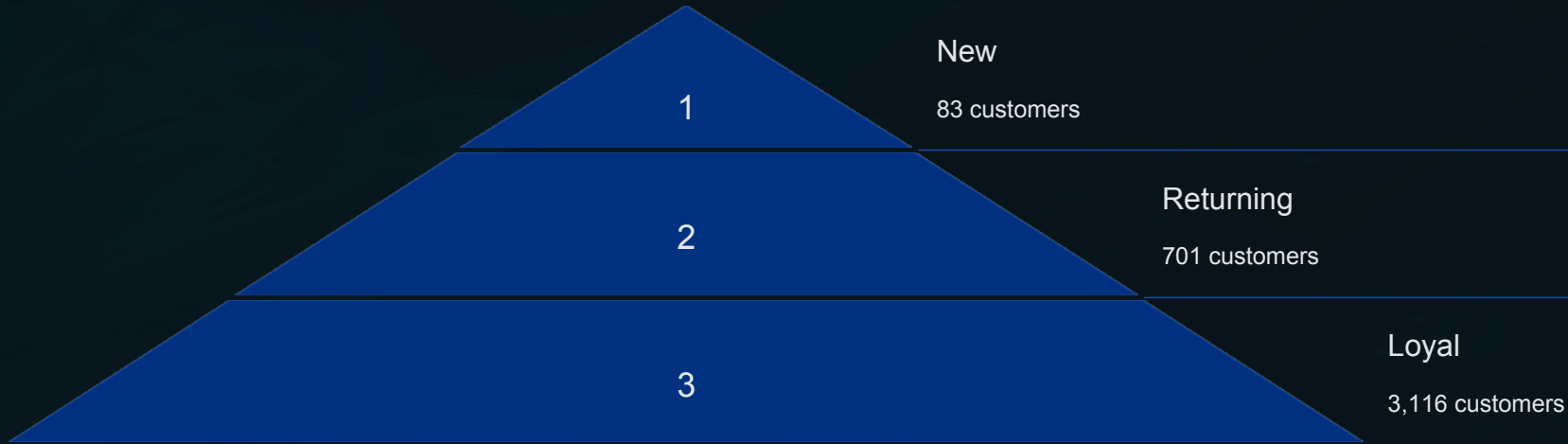
Subscribers: 1,053 customers, \$59.49 avg

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

Similar spending patterns across both groups



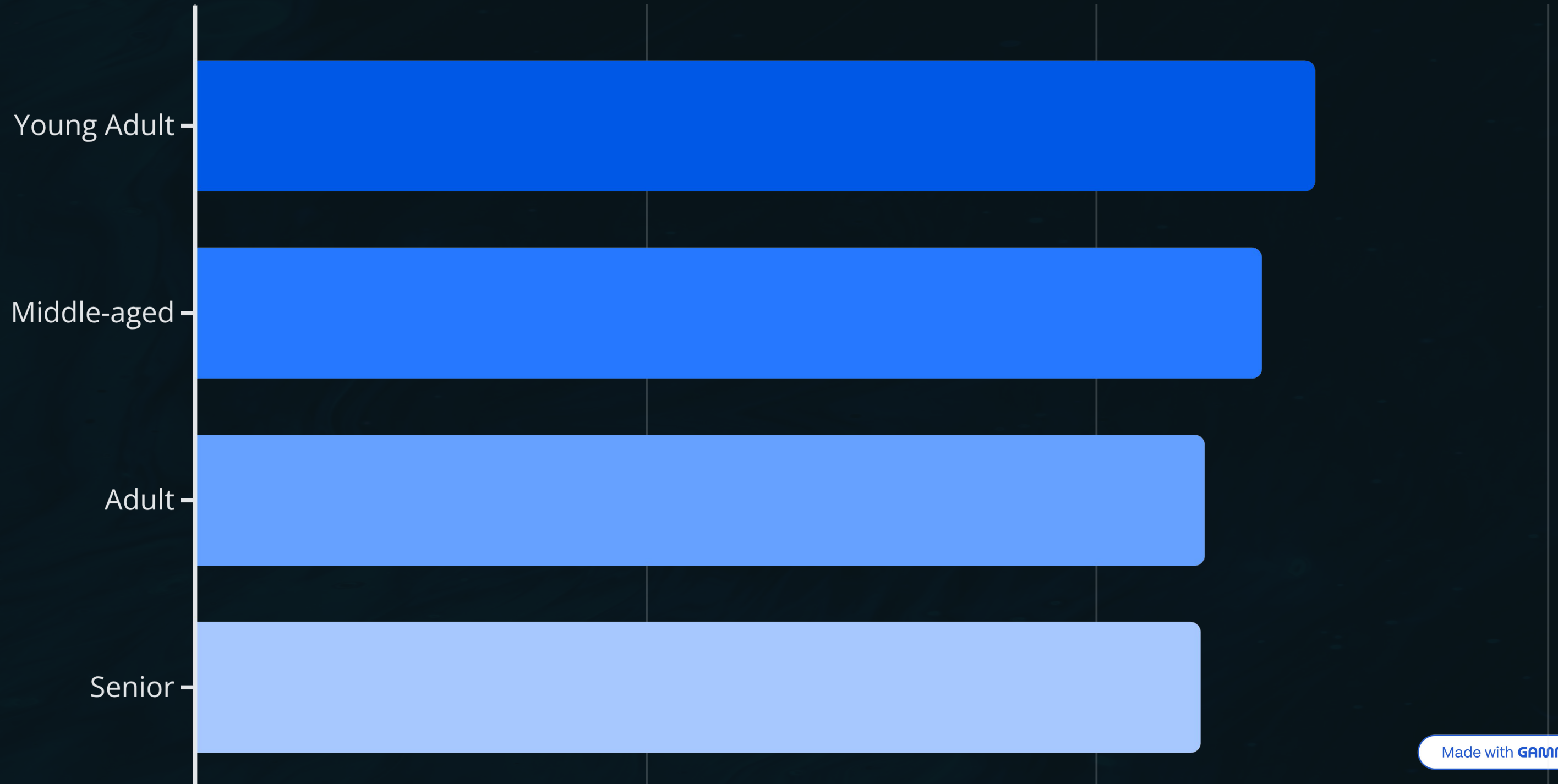
Customer Segmentation



80% **loyal customer base** demonstrates strong retention. Focus on converting returning customers to loyal status.



Revenue by Age Group



Strategic Recommendations



Boost Subscriptions

Promote exclusive benefits to convert non-subscribers



Loyalty Programs

Reward repeat buyers to increase loyal segment



Review Discount Policy

Balance sales growth with margin protection



Targeted Marketing

Focus on high-revenue age groups and express shipping users



Product Positioning

Highlight top-rated items in campaigns to drive conversions