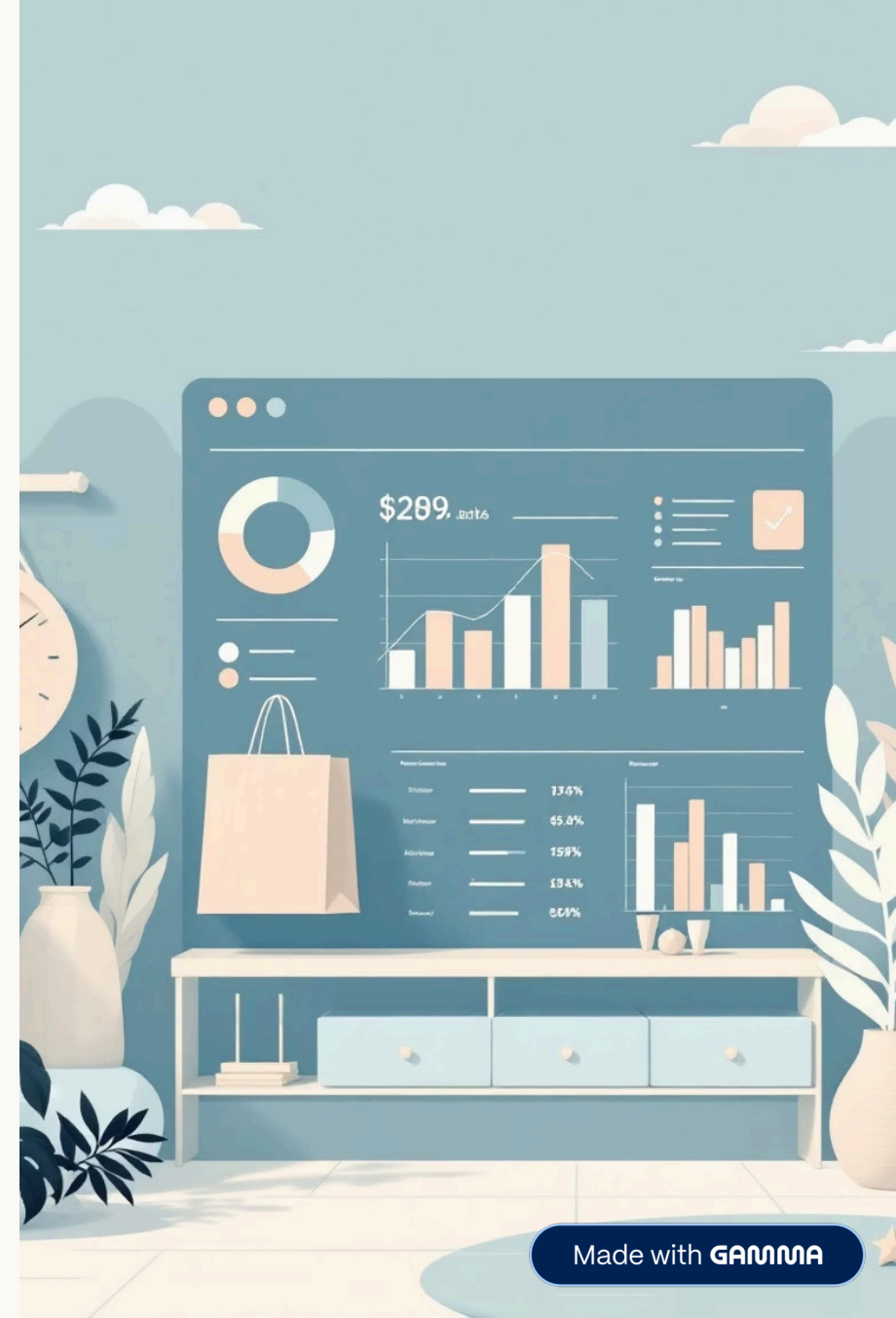


Customer Shopping Behavior Analysis

Uncovering insights from 3,900 purchases to guide 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

Diverse inventory
across categories

Data Preparation Journey

01

Data Loading & Exploration

Imported dataset using pandas, analyzed 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

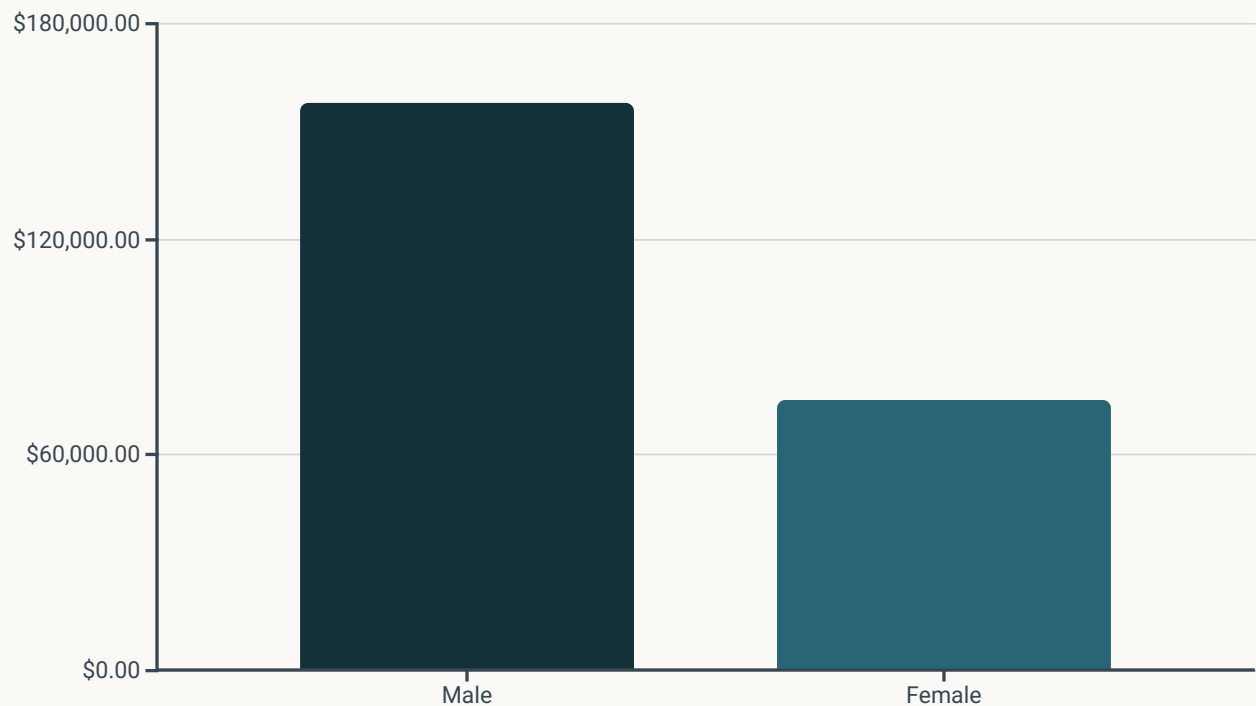
Created `age_group` bins and `purchase_frequency_days` for deeper insights

04

Database Integration

Connected to PostgreSQL for advanced SQL analysis

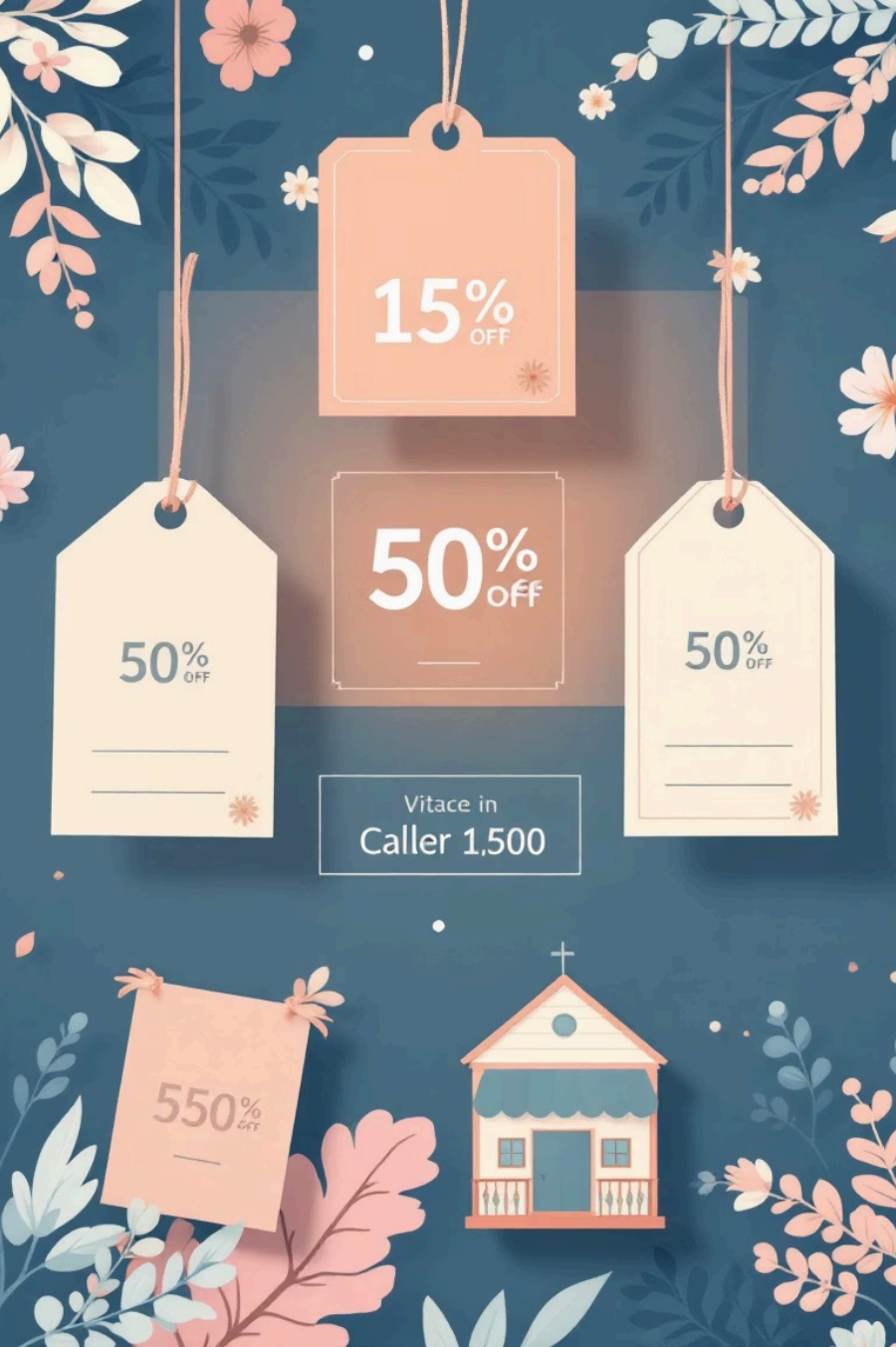
Revenue Insights by Gender



Key Finding

Male customers generate **2.1x more revenue** than female customers

Total revenue: \$233,081



Smart Discount Users

High-Value Discount Shoppers

839 customers used discounts but spent above average

Strategic Opportunity

These buyers prove discounts don't always reduce basket size

Margin Balance

Optimize discount strategy to maintain profitability

Top-Rated Products

1

Gloves

Average rating: **3.86**

2

Sandals

Average rating: **3.84**

3

Boots

Average rating: **3.82**

4

Hat

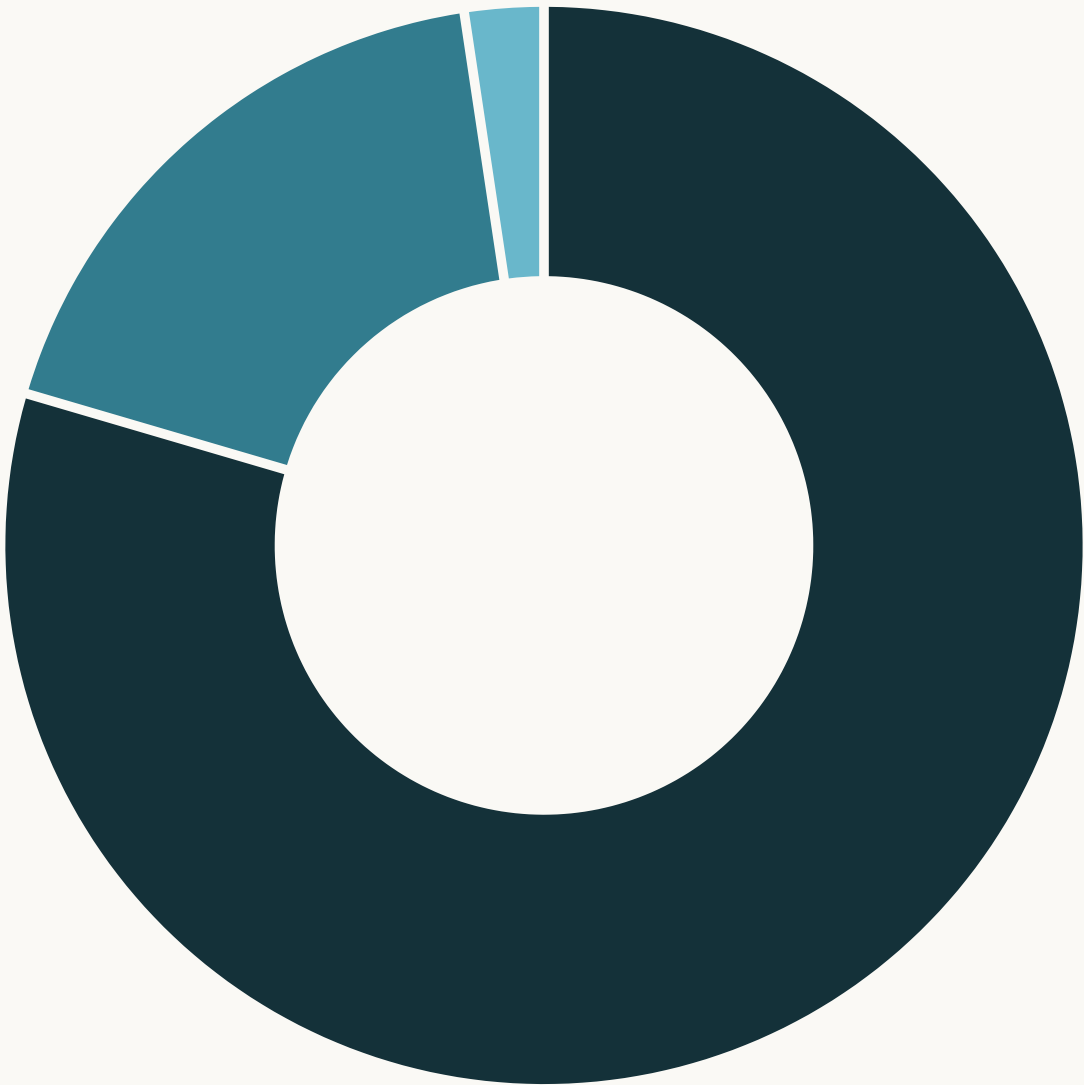
Average rating: **3.80**

5

Skirt

Average rating: 3.78

Customer Segmentation Analysis



■ Loyal

■ Returning

■ New



Loyal Customers Dominate

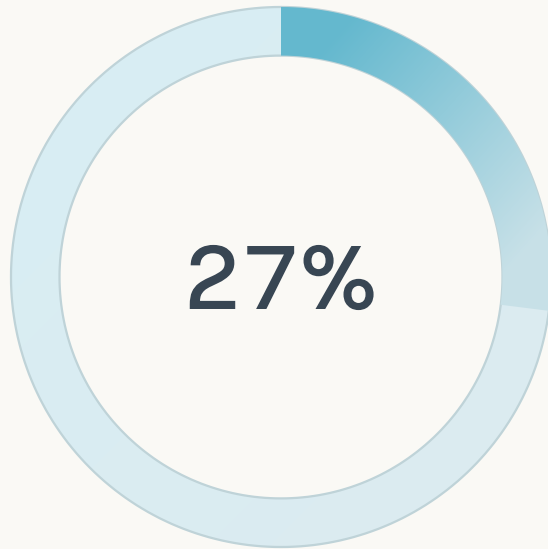
80% of customer base classified as loyal with repeat purchases



Growth Opportunity

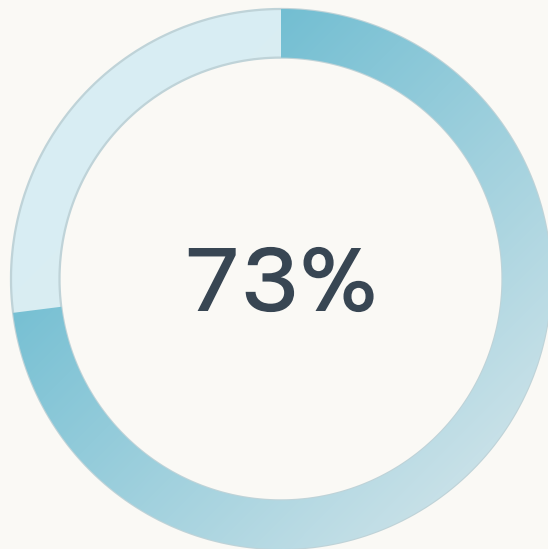
Convert returning buyers into loyal segment through targeted programs

Subscription Impact



Subscription Rate

1,053 subscribers out of 3,900 customers



Non-Subscribers

2,847 customers without subscriptions

Revenue Comparison

- Subscribers: \$62,645 total revenue
- Non-subscribers: \$170,436 total revenue
- Average spend nearly identical: ~\$59.50

Repeat buyers with 5+ purchases show higher subscription rates

Customer Behavior Dashboard

K

customers

\$59.76

Average Purchase Amount

Description Status



No 73%

Revenue by Category



Sales by Age Group



Interactive Dashboard

Comprehensive Power BI dashboard visualizing all key metrics and customer insights

Strategic Recommendations



Boost Subscriptions

Promote exclusive benefits to convert non-subscribers



Loyalty Programs

Reward repeat buyers to strengthen loyal segment



Optimize Discounts

Balance sales growth with margin control



Highlight Top Products

Feature best-rated items in marketing campaigns



Targeted Marketing

Focus on high-revenue age groups and express shipping users