DATA ANALYTICS PROJECT

Customer Shopping Behavior Analysis

Uncovering insights from **3,900 transactions** to guide strategic business decisions

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CHAPTER 1

Project Overview & Dataset

3.9K	18	50	4
Purchases	Features	Locations	Categories

Demographics

Age, Gender, Location, Subscription

Purchase Details

Item, Category, Amount, Season

Behavior

Discounts, Promos, Frequency, Ratings

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CHAPTER 2

Data Preparation in Python

01

Load & Explore

Imported via pandas; checked structure with df.info()

02

Clean & Impute

Filled 37 missing Review Ratings using category median

03

Engineer Features

Created age_group bins and purchase_frequency_days

04

Load to PostgreSQL

Dropped redundant promo_code_used; pushed to database

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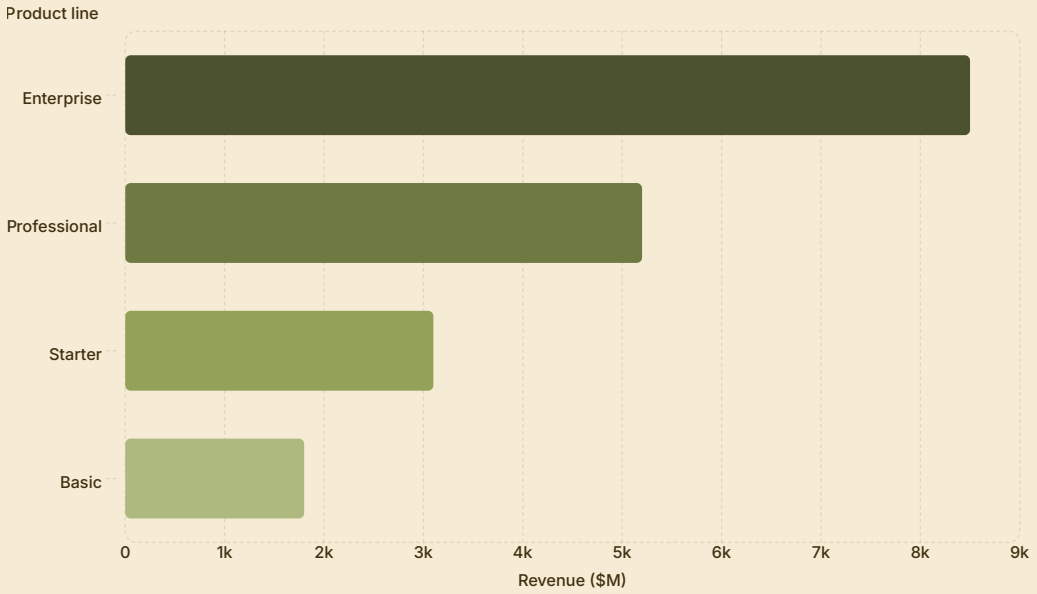
CHAPTER 3 — SQL ANALYSIS

Revenue by Gender & Spending



Key Finding

Male customers generated **2x revenue** vs. female customers

High-Spending Discount Users

839 customers used discounts yet spent above average ($59.76)

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CHAPTER 3 — SQL ANALYSIS

Top Products & Shipping Insights

Top 5 Products by Rating

Product	Avg Rating
Gloves	3.86
Sandals	3.84
Boots	3.82
Hat	3.80
Skirt	3.78

Shipping Comparison

Standard

$58.46 avg

Express

$60.48 avg

Express users spend slightly more per order

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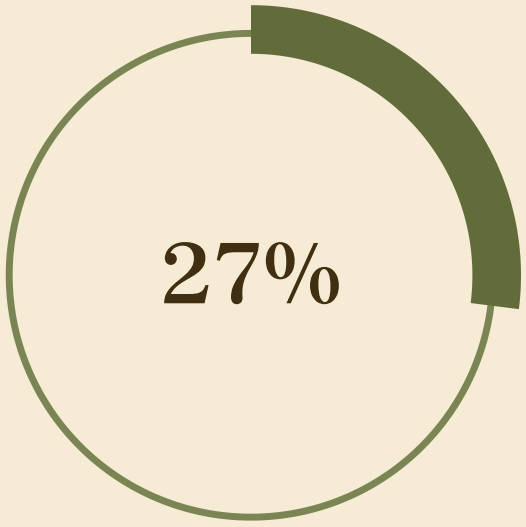
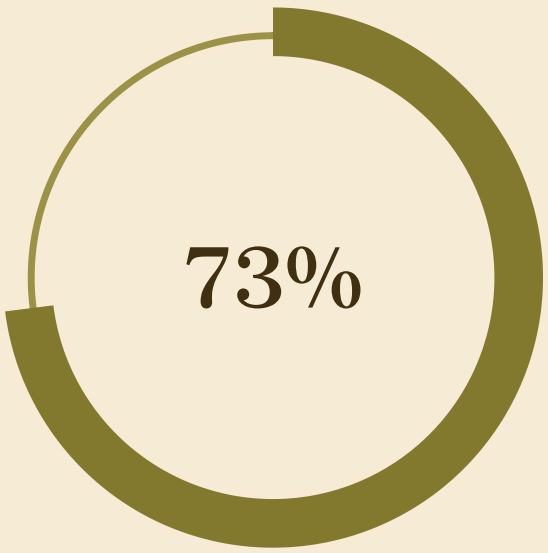
Subscribers vs. Non-Subscribers



Subscribers

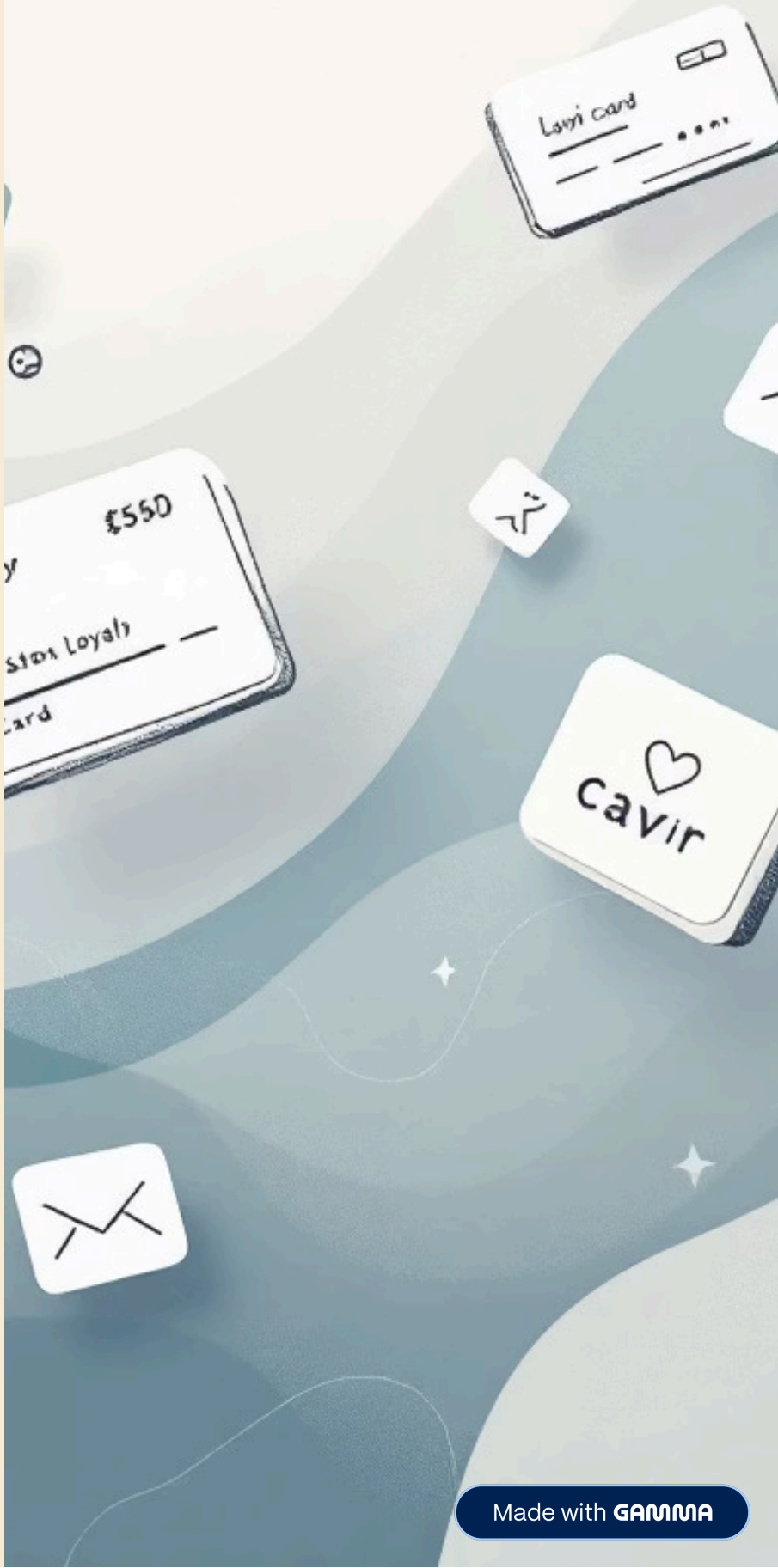
1,053 customers · $62,645 revenue



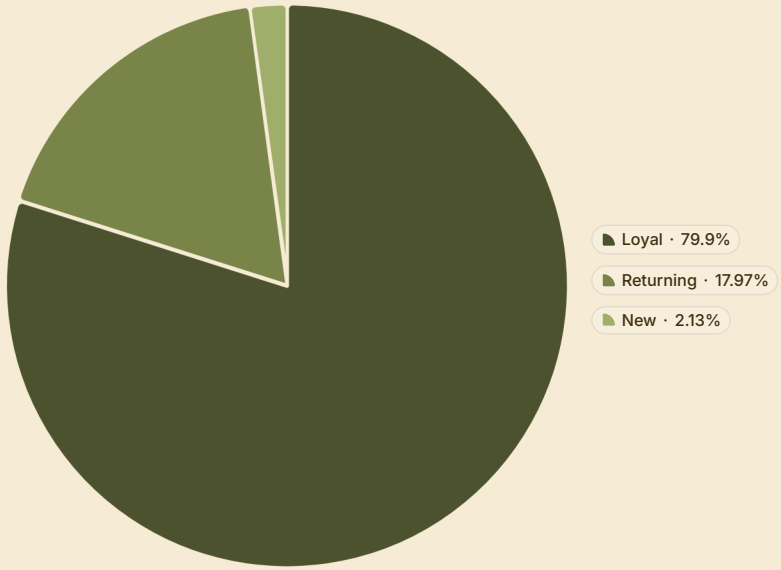
Non-Subscribers

2,847 customers · $170,436 revenue

Average spend nearly identical: Subscribers $59.49 vs. Non-Subscribers $59.87



Customer Segments & Discount Dependency



Discount-Dependent Products

Product	Discount Rate
Hat	50.00%
Sneakers	49.66%
Coat	49.07%
Sweater	48.17%
Pants	47.37%

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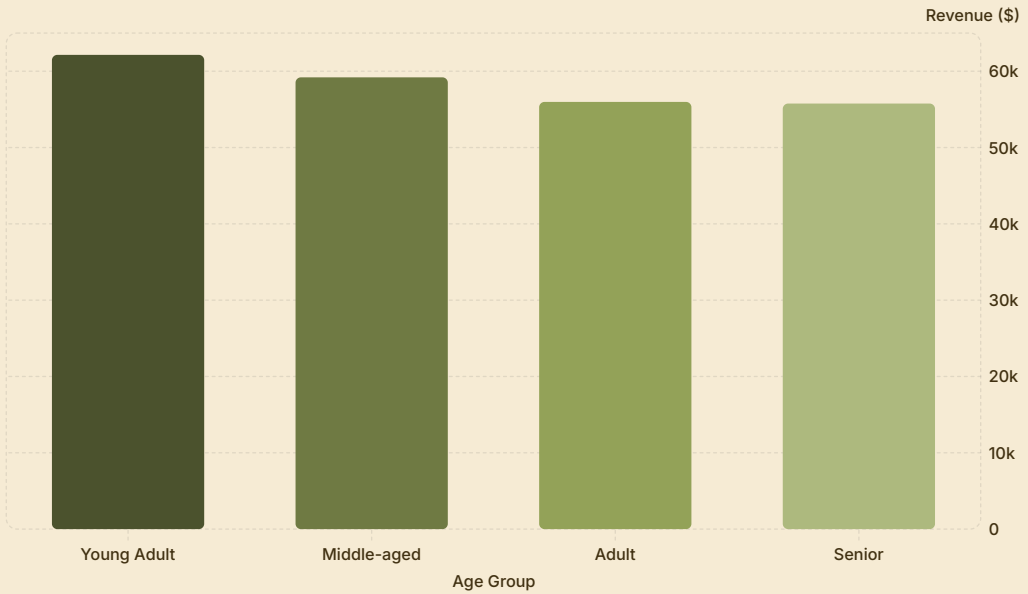
CHAPTER 3 — SQL ANALYSIS

Revenue by Age Group & Top Products



Top 3 per Category

Clothing

Blouse · Pants · Shirt

Accessories

Jewelry · Sunglasses · Belt

Footwear

Sandals · Shoes · Sneakers

Outerwear

Jacket · Coat

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Business Recommendations

Boost Subscriptions

Promote exclusive subscriber benefits

Loyalty Programs

Reward repeat buyers into "Loyal" segment

Review Discount Policy

Balance sales boosts with margin control

Product Positioning

Highlight top-rated and best-selling items

Targeted Marketing

Focus on high-revenue age groups and express users

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