



Customer Shopping Behavior Analysis

Uncovering insights from transactional data to drive strategic business decisions.



Project Overview

Goal

Analyze 3,900 purchases for spending patterns, segments, preferences, and subscriptions.

Data Source

Transactional data across various product categories.

Impact

Guide strategic business decisions with actionable insights.

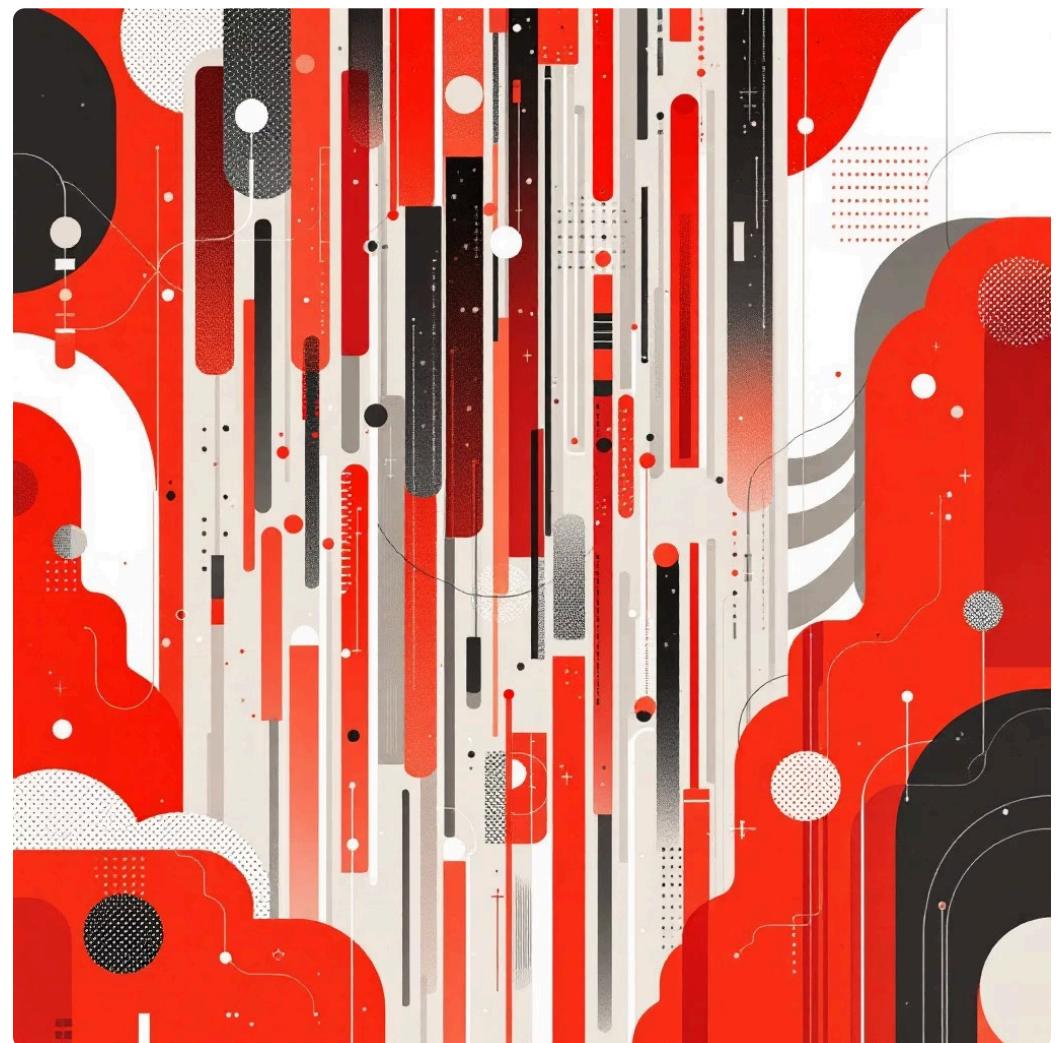
Dataset Summary

Key Features

- Customer demographics (Age, Gender, Location, Subscription)
- Purchase details (Item, Category, Amount, Season, Size, Color)
- Shopping behavior (Discount, Promo, Previous Purchases, Frequency, Review, Shipping)

Data Snapshot

- Rows: 3,900
- Columns: 18
- Missing Data: 37 values in Review Rating



Exploratory Data Analysis (Python)

01

Data Loading & Exploration

Imported with pandas, checked structure and summary statistics.

02

Data Cleaning

Handled missing 'Review Rating' data using median imputation.

03

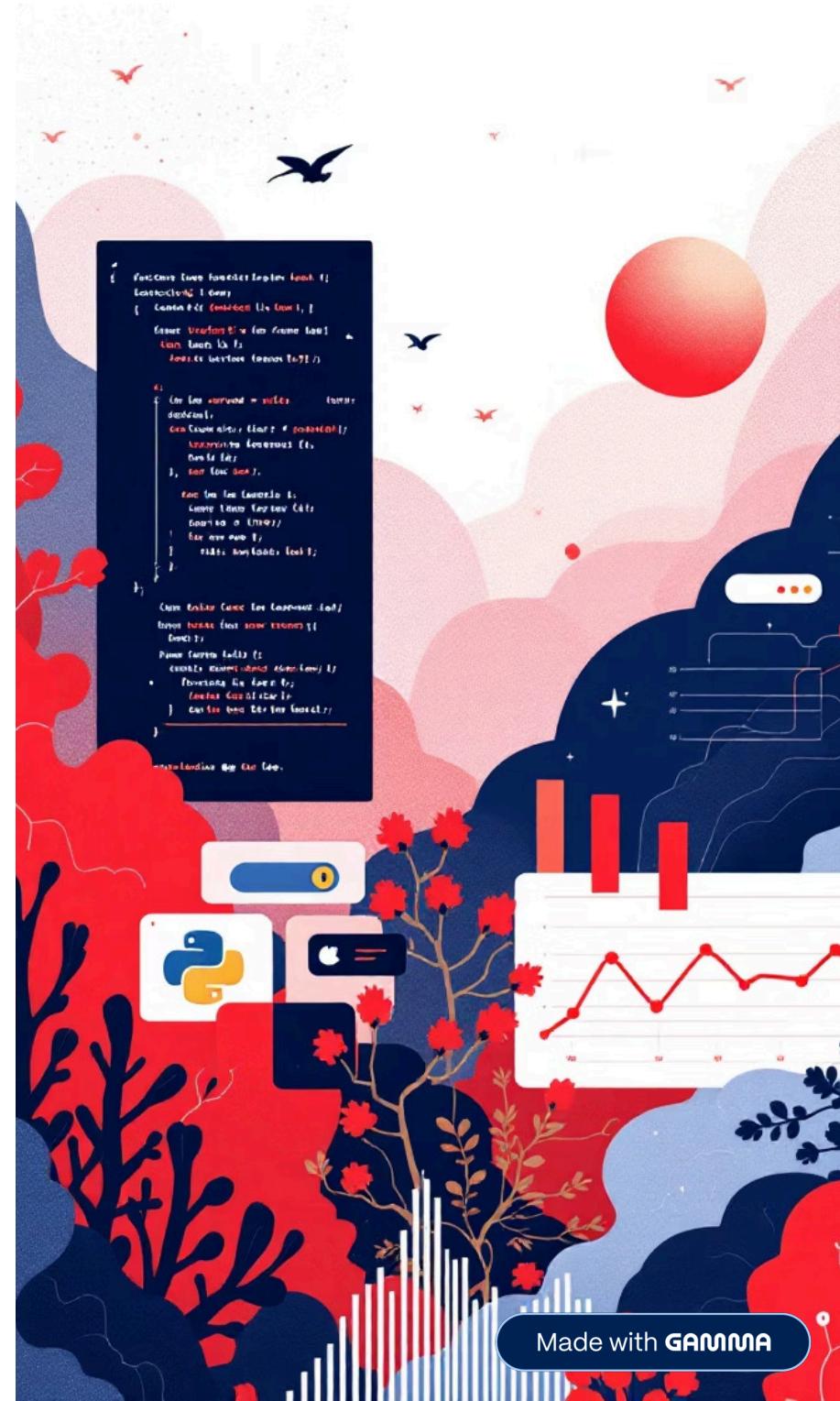
Standardization & Engineering

Renamed columns to snake_case, created age_group and purchase_frequency_days.

04

Database Integration

Loaded cleaned data into PostgreSQL for SQL analysis.





Shipping & Subscription Insights

Shipping Type Comparison

Express: \$60.48 avg purchase

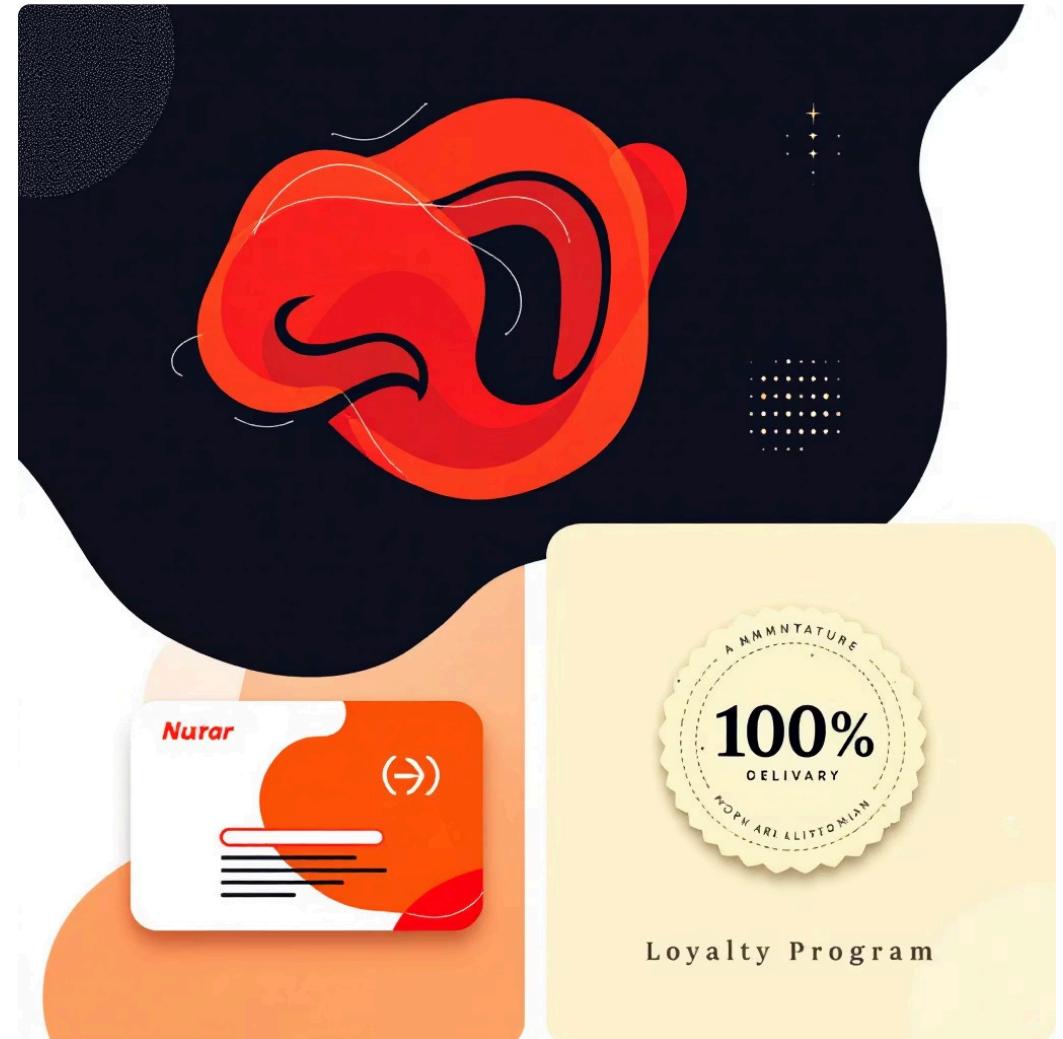
Standard: \$58.46 avg purchase



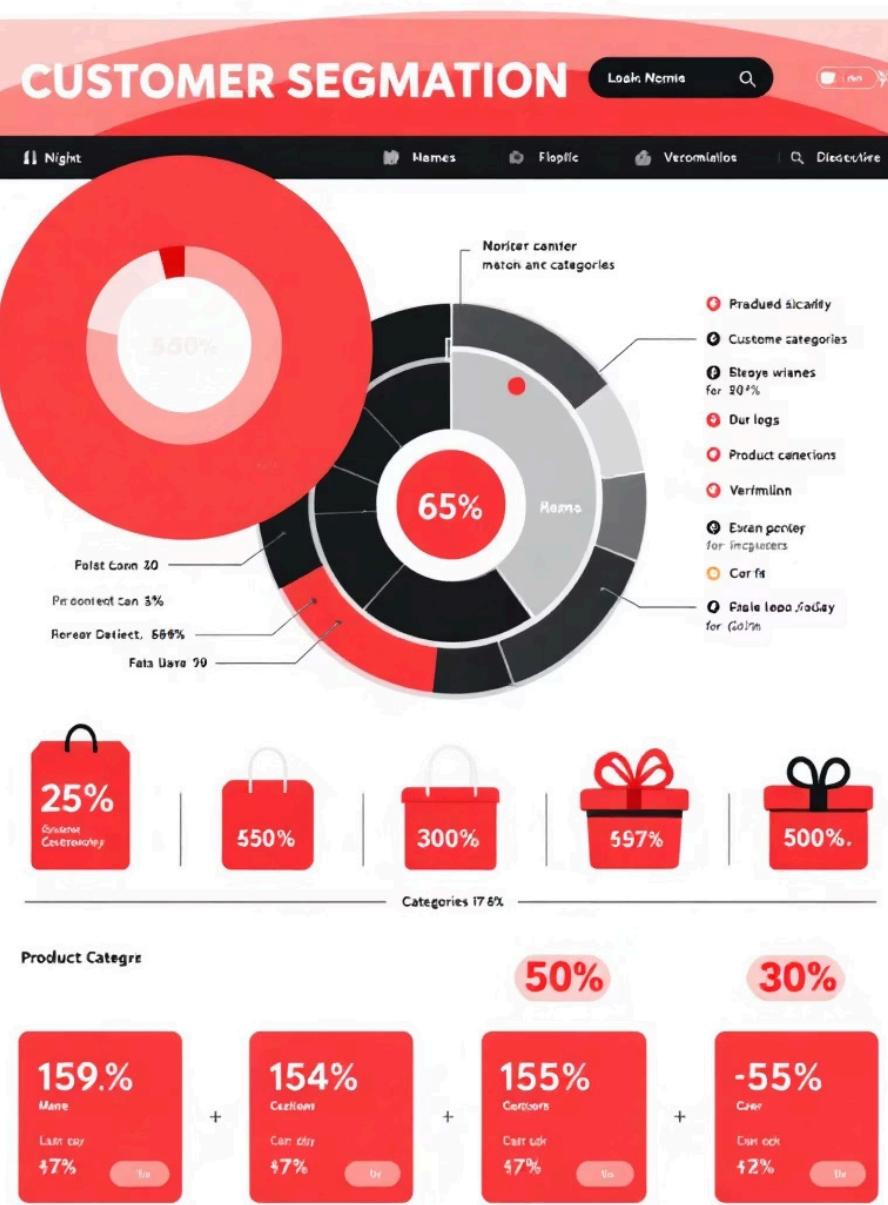
Subscribers vs. Non-Subscribers

Subscribers: 1,053 customers, \$62,645 total revenue

Non-Subscribers: 2,847 customers, \$170,436 total revenue



Loyalty Program



Product & Customer Segmentation

1

Discount-Dependent Products

Hat (50%), Sneakers (49.66%), Coat (49.07%), Sweater (48.17%), Pants (47.37%)

2

Customer Segmentation

Loyal (3116), Returning (701), New (83)

3

Top 3 Products per Category

Jewelry, Blouse, Sandals, Jacket lead their categories.

Repeat Buyers & Age Group Revenue

Repeat Buyers & Subscriptions

958 repeat buyers are subscribers, 2518 are not.



Revenue by Age Group

Young Adult: \$62,143

Middle-aged: \$59,197

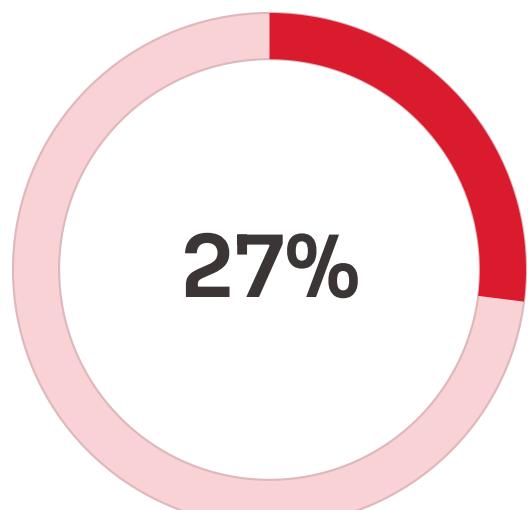
Adult: \$55,978

Senior: \$55,763

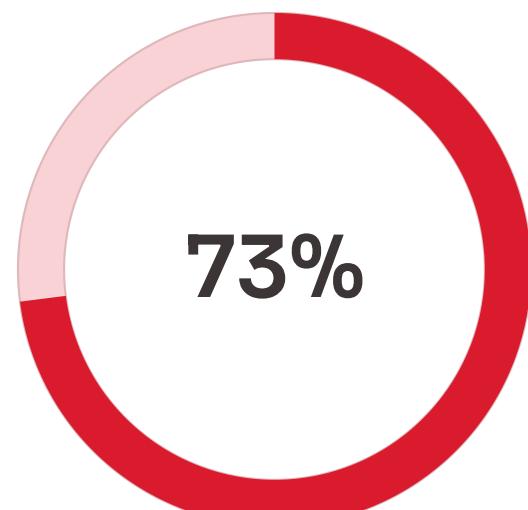


Power BI Dashboard

Interactive dashboard for visual insights.



Subscribers



Non-Subscribers

Business Recommendations



Boost Subscriptions

Promote exclusive benefits.



Customer Loyalty

Reward repeat buyers.



Review Discount Policy

Balance sales with margin.



Targeted Marketing

Focus on high-revenue groups.

