Customer Shopping Behavior Analysis

Uncovering insights from transactional data to drive strategic business decisions.

Project Overview

Transactional Data

3,900 purchases analyzed.

Uncover Insights

Spending patterns, segments, preferences.
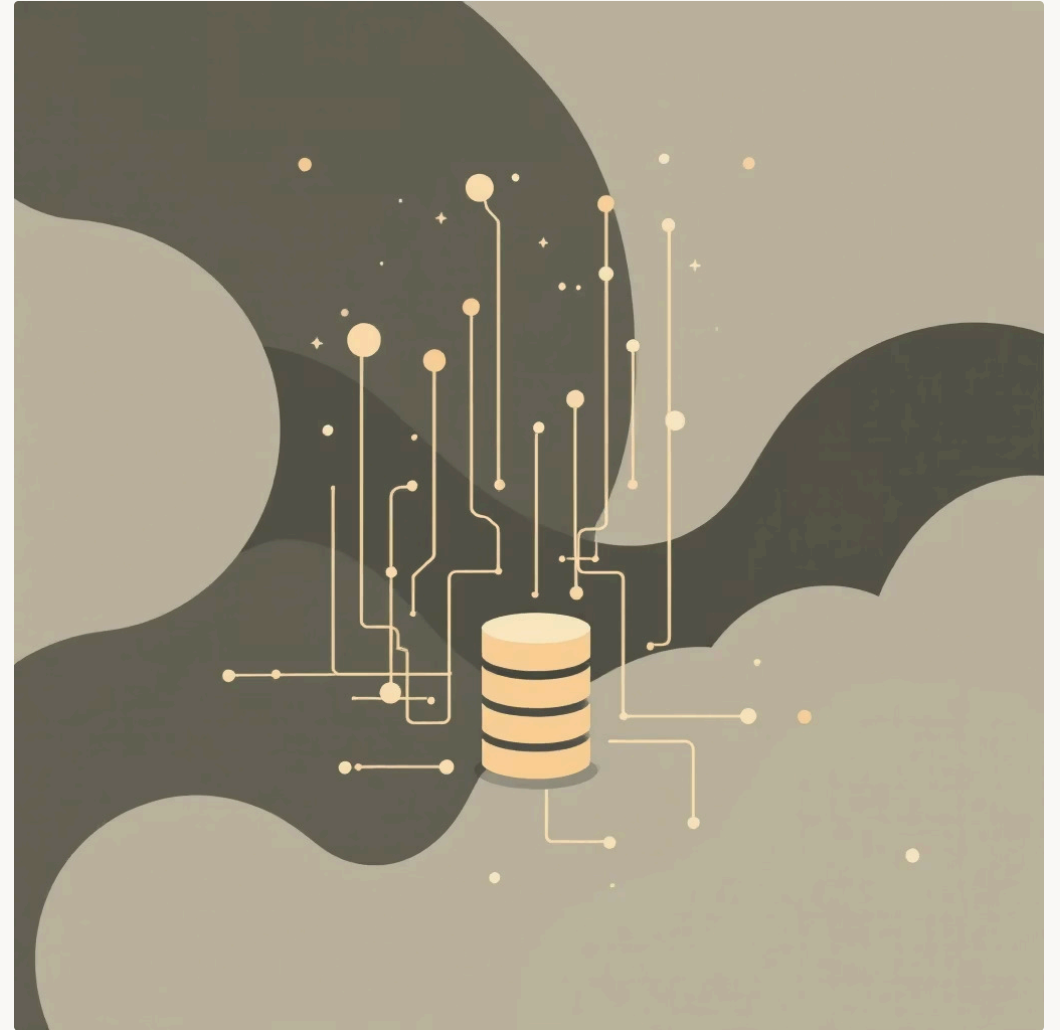
Guide Decisions

Optimize business strategy.

Dataset Summary

Rows: 3,900

Columns: 18

Key Features:

- Customer demographics
- Purchase details
- Shopping behavior

Missing Data: 37 values in Review Rating.

Exploratory Data Analysis (Python)

01

Data Loading

Imported dataset using `pandas`.

02

Initial Exploration

Checked structure and summary statistics.

03

Missing Data Handling

Imputed Review Rating with median.

04

Column Standardization

Renamed to snake_case.

05

Feature Engineering

Created age_group, purchase_frequency_days.

06

Database Integration

Loaded into PostgreSQL for SQL analysis.

Data Analysis (SQL)

1

Revenue by Gender

Male: $157,890, Female: $75,191

2

High–Spending Discount Users

839 customers identified.

3

Top 5 Products by Rating

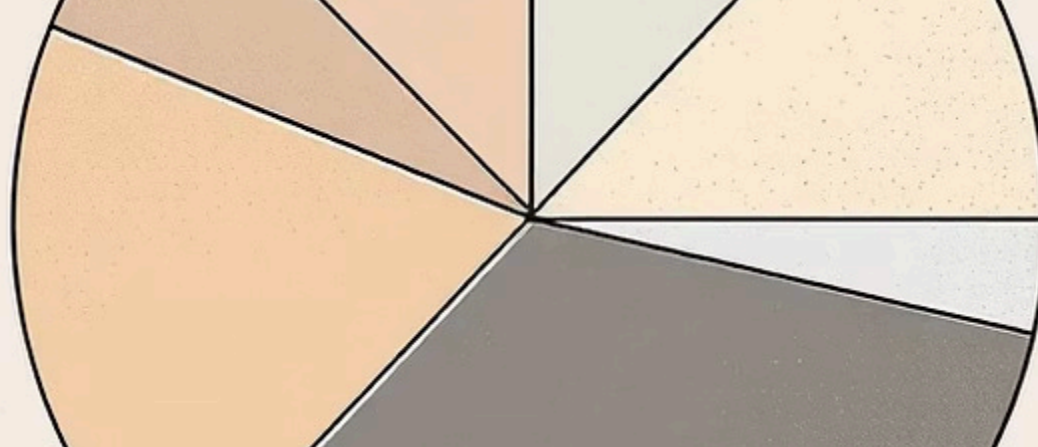Gloves, Sandals, Boots, Hat, Skirt.

4

Shipping Type Comparison

Express: $60.48, Standard: $58.46

5

Subscribers vs. Non–Subscribers

Non-subscribers higher total revenue.

SQL Insights: Products & Segments

Discount-Dependent Products

Hat (50%), Sneakers (49.66%), Coat (49.07%).

Customer Segmentation

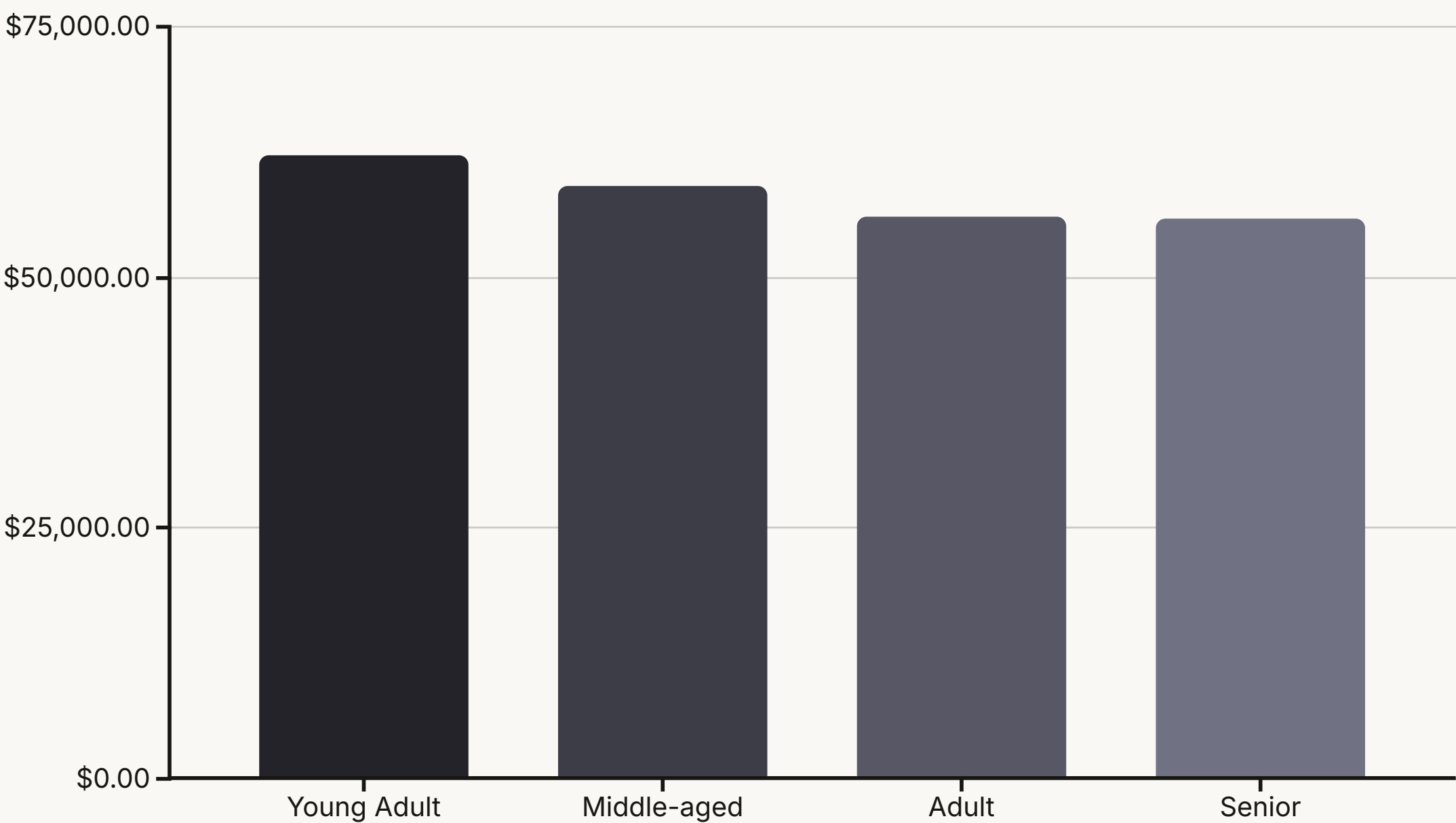Loyal (3116), Returning (701), New (83).

Repeat Buyers & Subscriptions

958 repeat buyers are subscribers.

Top Products by Category

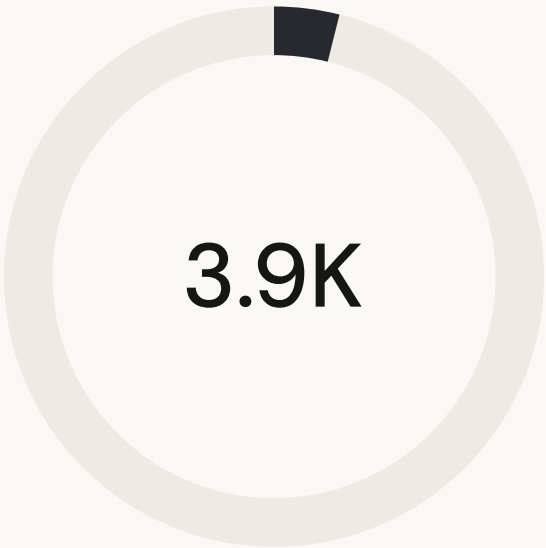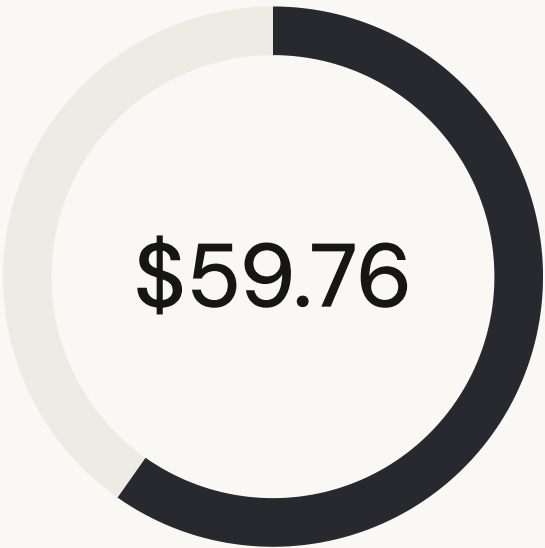| 1	Accessories	Jewelry	171
1	Clothing	Blouse	171
1	Footwear	Sandals	160
1	Outerwear	Jacket	163

Revenue by Age Group

Young Adults contribute the highest revenue.

Power BI Dashboard

Interactive dashboard for visual insights.

3.9K
Customers

$59.76
Avg. Purchase

3.75
Avg. Rating

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.