



# Customer Shopping Behavior Analysis

Uncovering insights from transactional data to drive strategic business decisions.

# Project Overview

This project analyzes 3,900 customer purchases to understand spending patterns, segments, product preferences, and subscription behavior.

1

## Data Collection

Transactional data from 3,900 purchases.

2

## Key Insights

Spending patterns, customer segments, product preferences.

3

## Strategic Goals

Guide business decisions and optimize strategies.

# Dataset Summary

Our dataset comprises 3,900 rows and 18 columns, capturing a wide range of customer and purchase details.

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



# Key Features Analyzed



## Customer Demographics

Age, Gender, Location, Subscription Status.



## Purchase Details

Item, Category, Amount, Season, Size, Color.



## Shopping Behavior

Discounts, Previous Purchases, Frequency, Reviews, Shipping.

# Exploratory Data Analysis (Python)

We initiated our analysis with data preparation and cleaning using Python, ensuring data quality and consistency.

- Data Loading:** Imported dataset with `pandas`.
- Initial Exploration:** Used `df.info()` and `.describe()`.
- Missing Data:** Imputed Review Rating using median.
- Column Standardization:** Renamed to snake case.
- Feature Engineering:** Created `age_group` and `purchase_frequency_days`.
- Database Integration:** Loaded cleaned data into MySQL.



# Data Analysis (SQL)

Structured analysis in MySQL revealed key business insights.

1

## Revenue by Gender

- Male: **\$157,890**,
- Female: **\$75,191**.

2

## Top 5 Products by Rating

- Gloves (**3.86**)
- Sandals (**3.84**)
- Boots (**3.82**)
- Hat (**3.8**)
- Handbag (**3.78**)

3

## Shipping Type Comparison

- Express: **\$60.48**
- Standard: **\$58.46**.

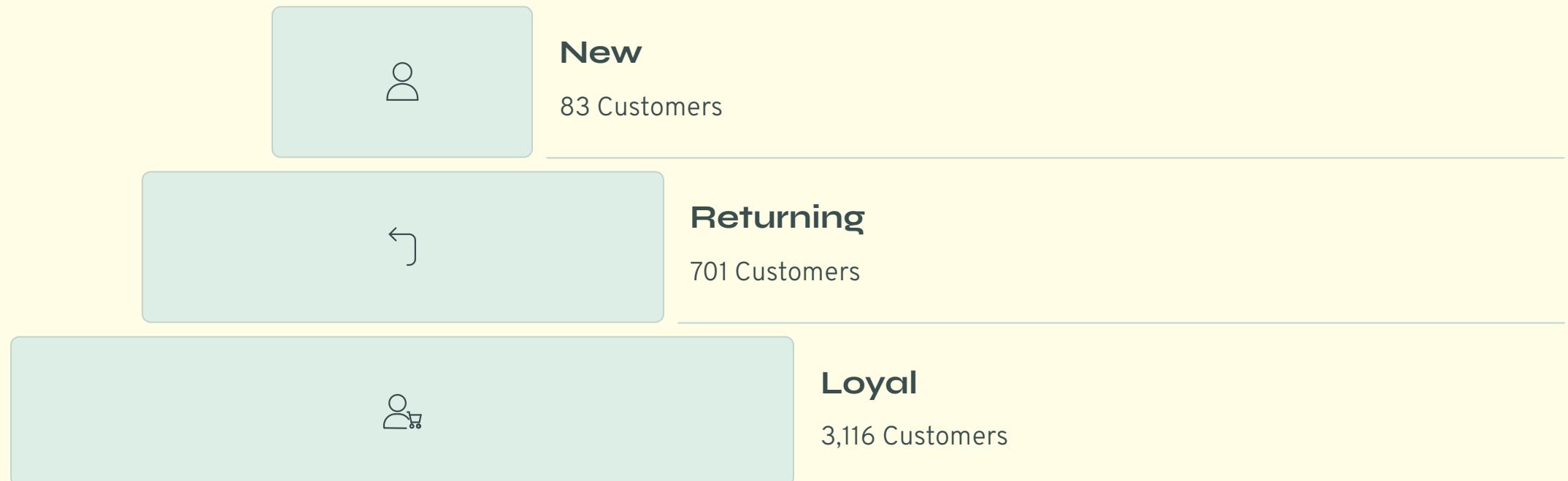
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## Subscribers vs. Non-Subscribers

- Subscribers: **\$59.49** avg. spend
- Non-Subscribers: **\$59.87** avg. spend.

# Customer Segmentation

Customers were categorized based on their purchase history.





# Dashboard in Power BI

An interactive Power BI dashboard visualizes key metrics: 3.9K customers, \$59.76 average purchase, 3.75 average review rating. It shows 73% non-subscribers, and revenue by category (Clothing leading with \$104K) and age group (young adults leading with \$62K).

# Key Business Recommendations

01

## Boost Subscriptions

Promote exclusive benefits to increase subscriber base.

02

## Customer Loyalty Programs

Reward repeat buyers to foster loyalty and move them into the "Loyal" segment.

03

## Review Discount Policy

Balance sales boosts with margin control for sustainable growth.

04

## Product Positioning

Highlight top-rated and best-selling products in marketing campaigns.

05

## Targeted Marketing

Focus efforts on high-revenue age groups and express-shipping users for maximum impact.



# Driving Growth Through Data

By understanding customer behavior, we can implement strategies that enhance satisfaction and boost revenue.