# CAPSTONE PROJECT POWER BI

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# Introducing The Art of Brewing

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# Project Overview

This project leverages the Coffee Quality Institute (CQI) dataset to analyze factors that contribute to coffee quality, focusing on sensory evaluation, defects, and processing methods.

The goal is to understand the key determinants of coffee quality and their relationships with processing methods, origin regions, and defects.

The analysis aims to improve decision-making in coffee production and processing to enhance overall coffee quality.

# Business Problem

Inconsistent coffee quality due to varying sensory attributes, processing methods, and defects challenges the coffee industry. Understanding these factors is crucial for improving quality control and meeting consumer expectations.

# Objective

Sensory attributes Analysis
Defects Analysis
Analysis on Processing Methods and Origin of Regions

Sensory Attributes
Aroma
Flavor
Country of Origin
Aftertaste
Lot Number
Acidity
Altitude
Body
Region
Balance
Number of Bags
Uniformity
Bag Weight
Clean Cup
In-Country Partner
Sweetness
Harvest Year
Grading Date
Variety
Status
Processing Method
Overall
Defects
Total Cup Points
Moisture Percentage
Category One Defects
Quakers
Color
Category Two Defects
Expiration

# Dataset Overview

The dataset consists of Coffee Quality Institute (CQI) data consisting of 31 rows and 208 columns.

# Approach Used

- Data Cleaning and Preprocessing
- Exploratory Data Analysis
- (EDA)Visualization

# Tools & Methods

- Tools: Power BI Desktop, Excel (for preparation).

# Overview of Dataset

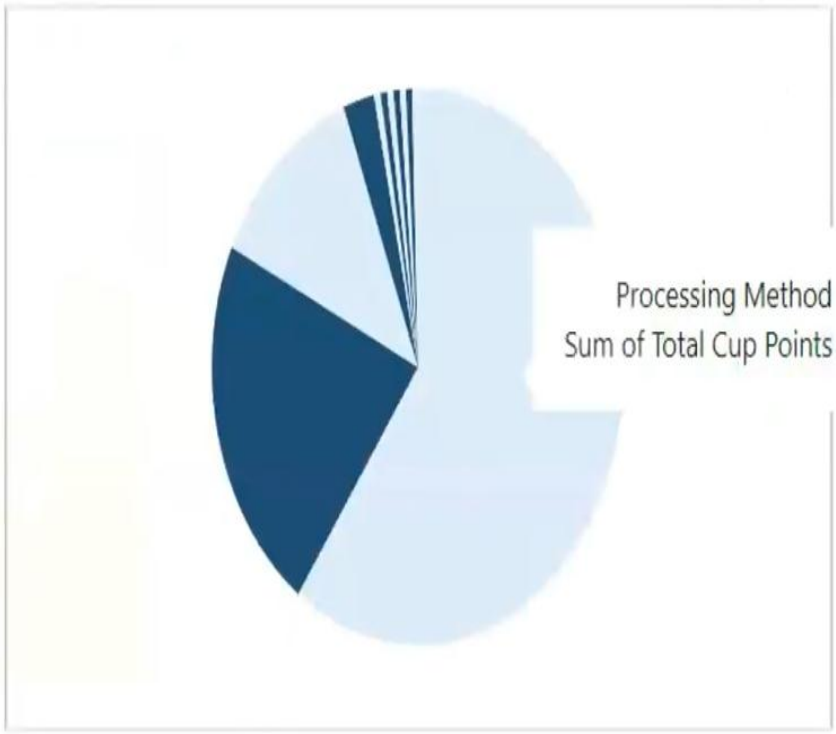
207
Count of ID

22
Count of Country of Origin

115
Count of Region

49
Count of Variety

11
Count of Processing Met...

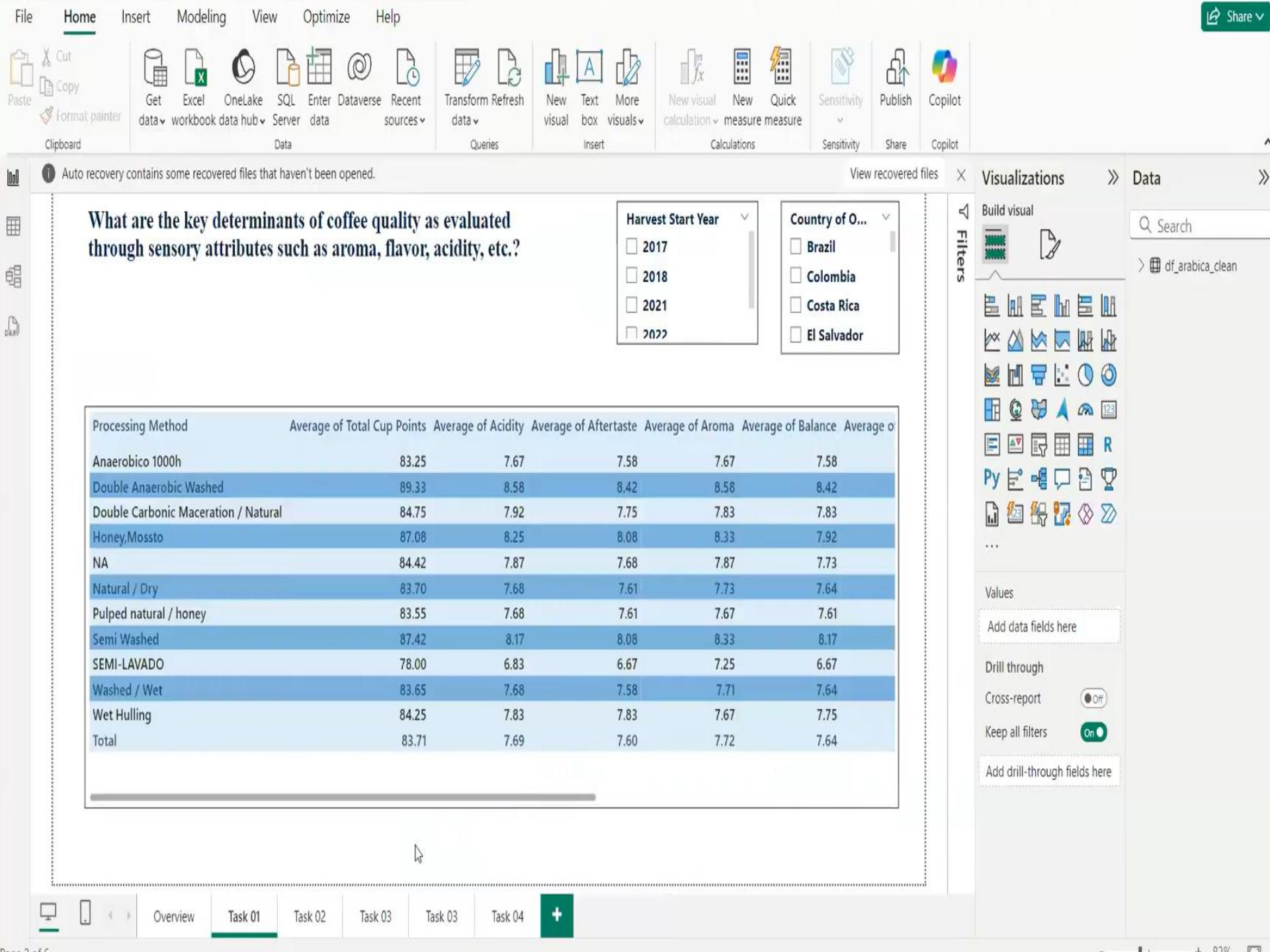



=> Types of Defects

Category 1 Defect
Category 2 Defect

=> Sensory Attributes

Acidity
ftertaste
roma
alance
Body
Clean Cup
Flavor
Sweetness
Uniformity




| Processing Method | Average of Total Cup Points | Average of Acidity | Average of Aftertaste | Average of Aroma | Average of Balance | Average o |
|---|---|---|---|---|---|---|
| Anaerobico 1000h | 83.25 | 7.67 | 7.58 | 7.67 | 7.58 | |
| Double Anaerobic Washed | 89.33 | 8.58 | 8.42 | 8.58 | 8.42 | |
| Double Carbonic Maceration / Natural | 84.75 | 7.92 | 7.75 | 7.83 | 7.83 | |
| Honey,Mossto | 87.08 | 8.25 | 8.08 | 8.33 | 7.92 | |
| NA | 84.42 | 7.87 | 7.68 | 7.87 | 7.73 | |
| Natural / Dry | 83.70 | 7.68 | 7.61 | 7.73 | 7.64 | |
| Pulped natural / honey | 83.55 | 7.68 | 7.61 | 7.67 | 7.61 | |
| Semi Washed | 87.42 | 8.17 | 8.08 | 8.33 | 8.17 | |
| SEMI-LAVADO | 78.00 | 6.83 | 6.67 | 7.25 | 6.67 | |
| Washed / Wet | 83.65 | 7.68 | 7.58 | 7.71 | 7.64 | |
| Wet Hulling | 84.25 | 7.83 | 7.83 | 7.67 | 7.75 | |
| Total | 83.71 | 7.69 | 7.60 | 7.72 | 7.64 | |

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Copilot — Copilot

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# What are the key determinants of coffee quality as evaluated through sensory attributes such as aroma, flavor, acidity, etc.?

**Harvest Start Year**
- [x] 2017
- [ ] 2018
- [ ] 2021
- [ ] 2022

**Country of O...**
- [ ] Taiwan

Filters

| dity | Average of Aftertaste | Average of Aroma | Average of Balance | Average of Body | Average of Clean Cup | Average of Flavor | Average of Sweetness | Average of |
|---|---|---|---|---|---|---|---|---|
| 3.00 | 7.75 | 7.75 | 7.92 | 7.83 | 10.00 | 7.92 | 10.00 | |
| 3.00 | 7.75 | 7.75 | 7.92 | 7.83 | 10.00 | 7.92 | 10.00 | |

Visualizations

Build visual

Field

Harvest Start Year

Drill through

Cross-report Off

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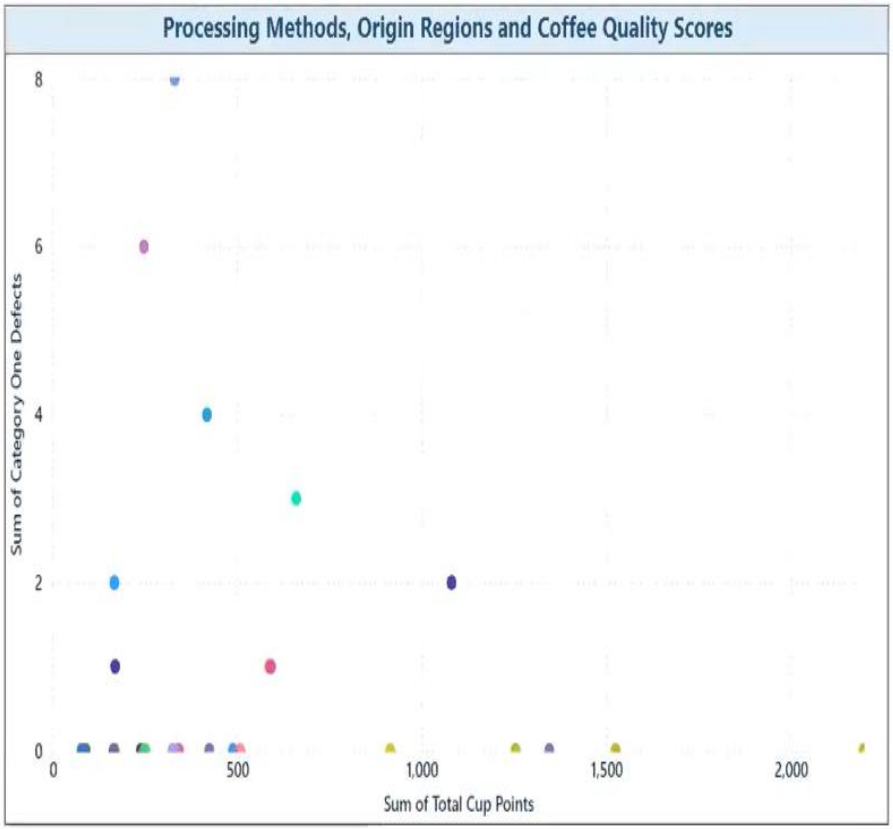
# Is there a correlation between processing methods, origin regions, and coffee quality scores?




**Processing Method**

- Anaerobico 1000h
- Double Anaerobic Washed
- Double Carbonic Maceration / N...
- Honey,Mossto
- NA
- Natural / Dry
- Pulped natural / honey
- Semi Washed
- SEMI-LAVADO
- Washed / Wet
- Wet Hulling

Filters

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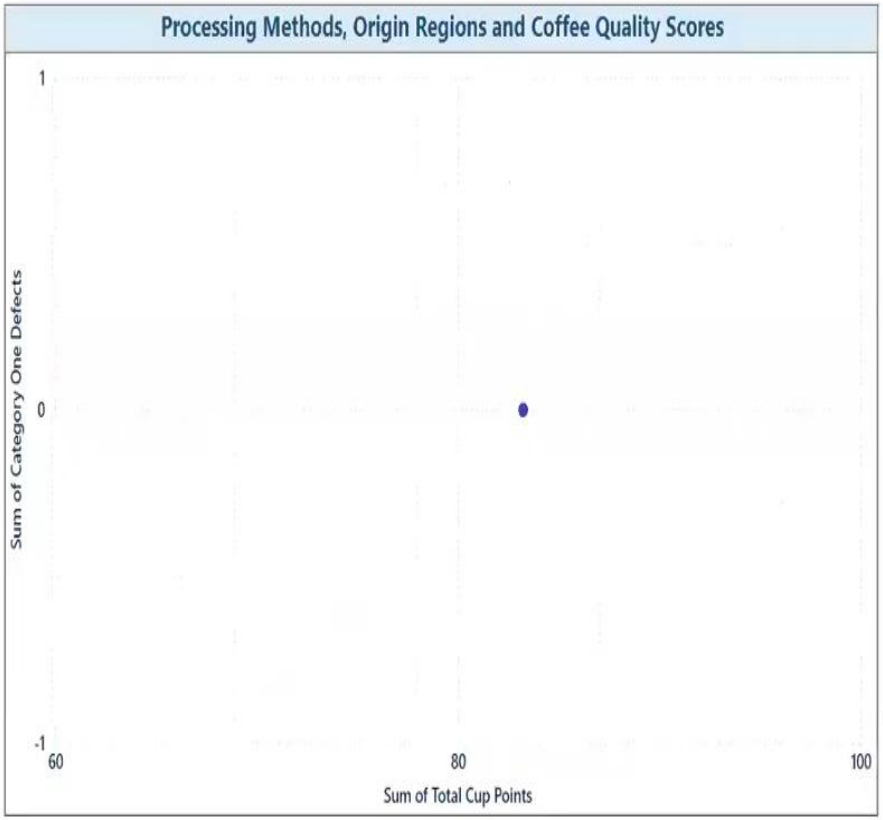


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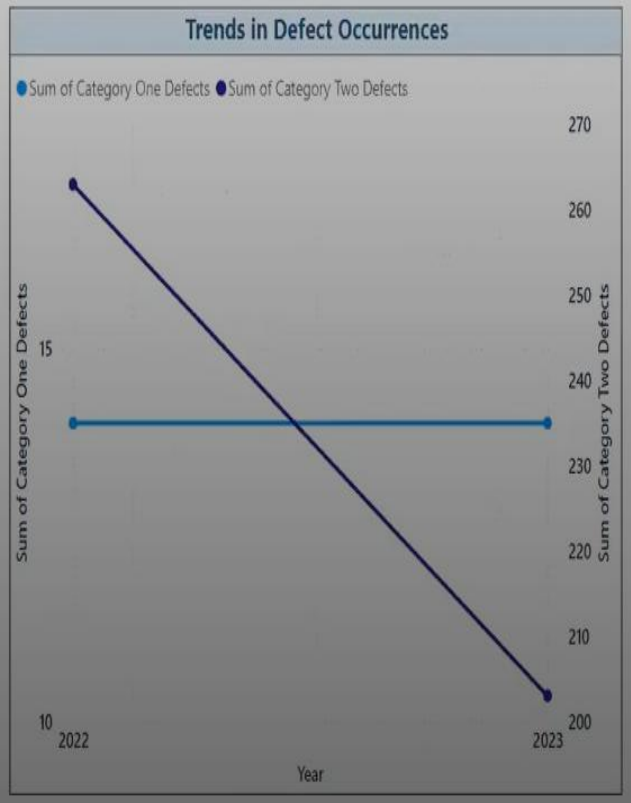
## Can we identify any trends or patterns in defect occurrences?

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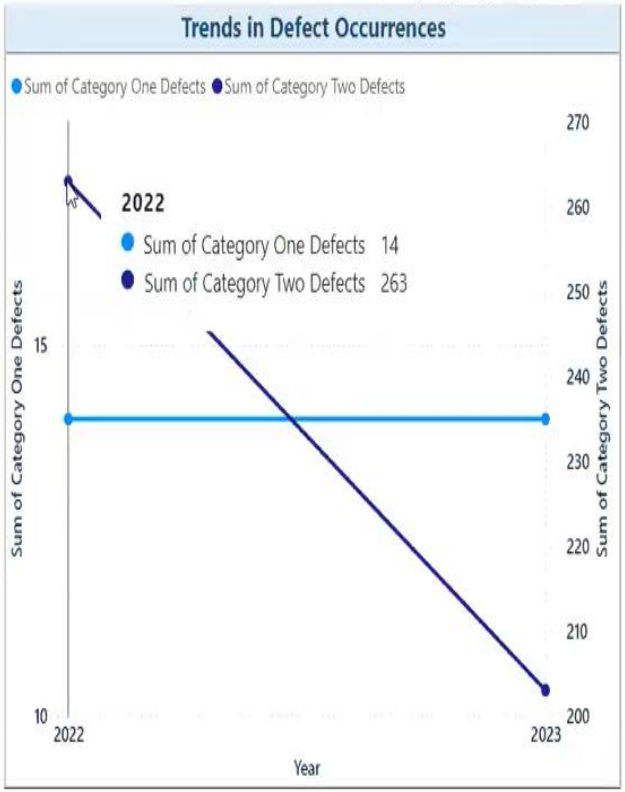


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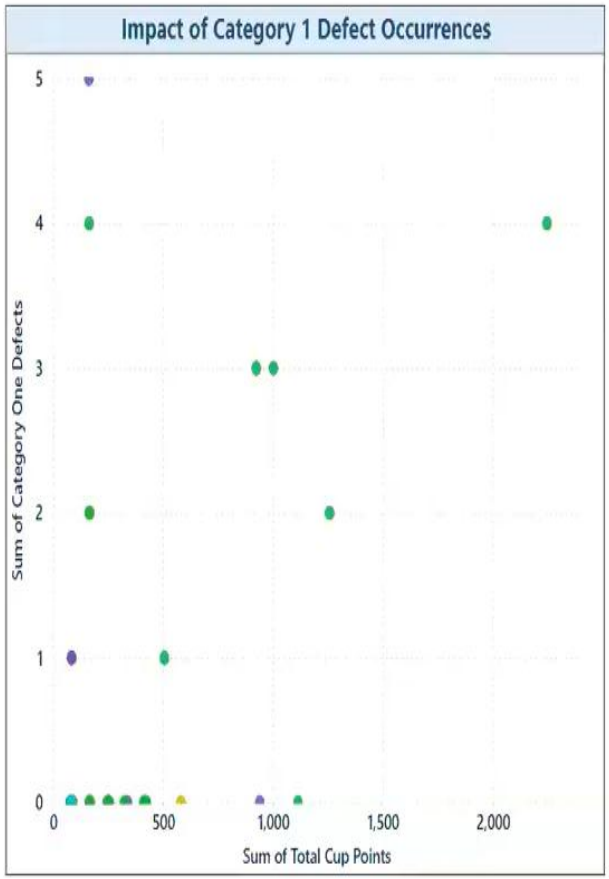
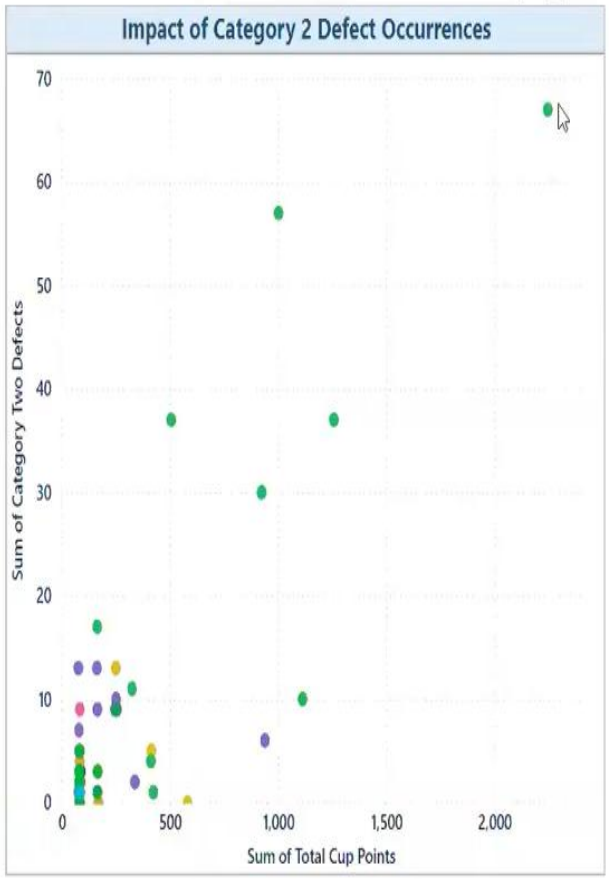
## Can we identify the impact of defect occurrences on overall coffee quality?

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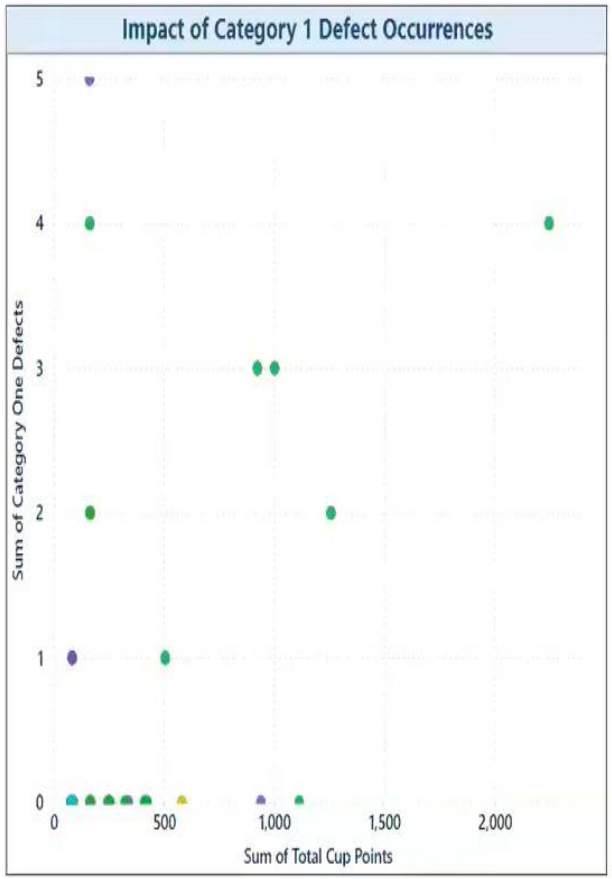


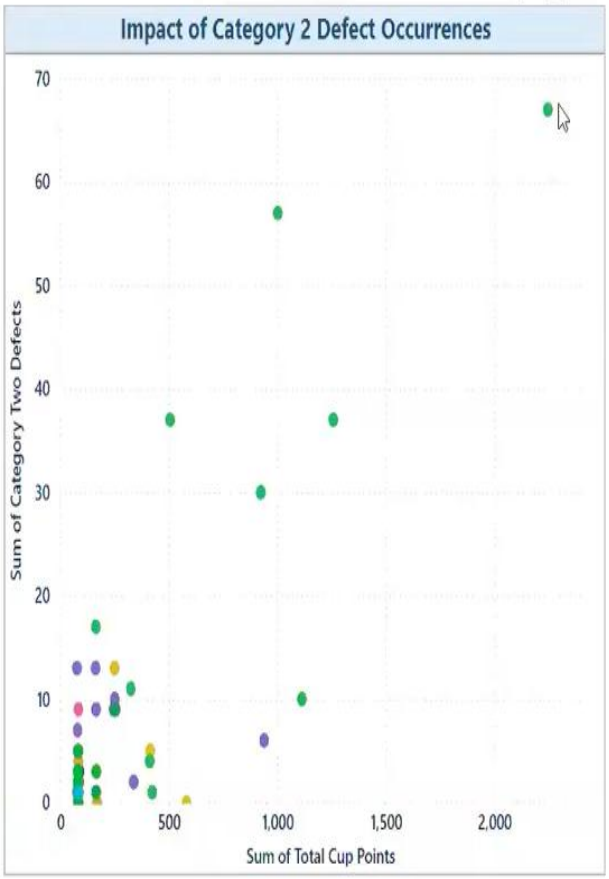


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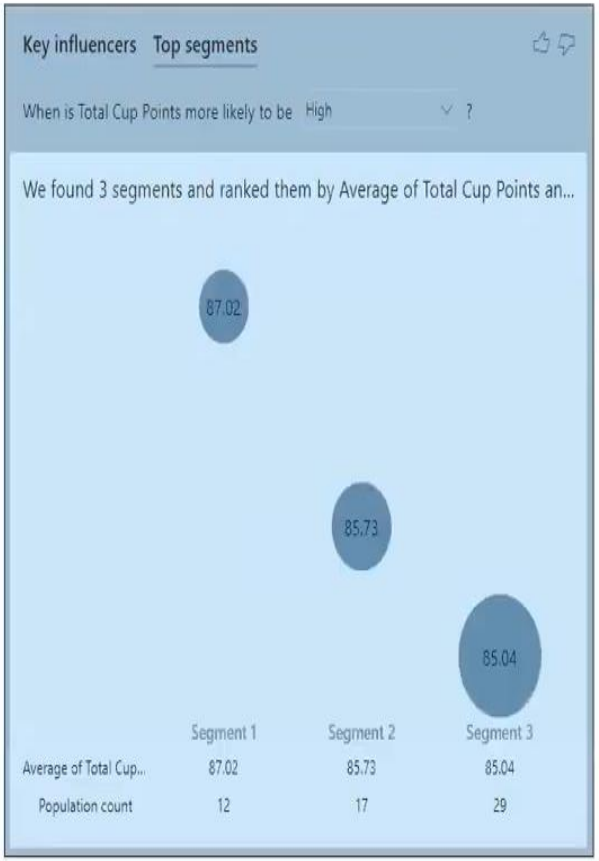
**How do different variables interact to influence the Total Cup Points, which represent an overall measure of coffee quality?**

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Key influencers Top segments

When is Total Cup Points more likely to be High ?

We found 3 segments and ranked them by Average of Total Cup Points and population size. Select a segment to see more details.


| | Segment 1 | Segment 2 | Segment 3 |
|---|---|---|---|
| Average of Total Cup Points | 87.02 | 85.73 | 85.04 |
| Population count | 12 | 17 | 29 |

Filters

Visualizations

Build visual

Analyze

Total Cup Points

Explain by

Sum of Acidity
Sum of Aftertaste
Sum of Aroma
Sum of Balance
Sum of Body
Sum of Clean Cup
Sum of Flavor
Sum of Sweetness

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Key influencers Top segments

When is Total Cup Points more likely to be High ?

87.02 85.73 85.04

Segment 1

**Sum of Aftertaste** is greater than 7.83

**Sum of Flavor** is greater than 8.08

In segment 1, the average Total Cup Points is 87.02. This is 3.31 units higher than the overall average, 83.71.


Segment 1 contains 12 data points (5.8% of the data).


Filters

Visualizations

Build visual

Analyze

Total Cup Points

Explain by

Sum of Acidity
Sum of Aftertaste
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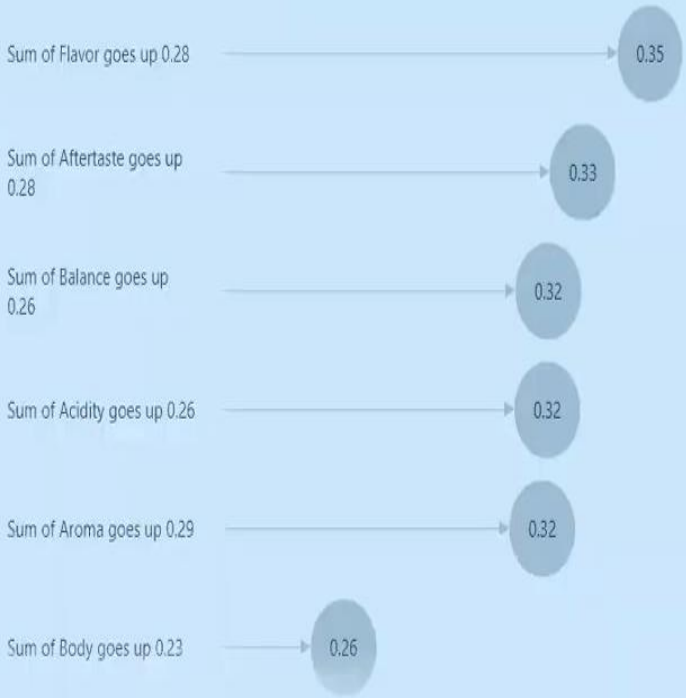
Key influencers Top segments

What influences Total Cup Points to Increase ?

When... ....the average of Total Cup Points increases by

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# Thank You