

Budweiser Analysis

DS 3605 Project 1 – Group 5

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FOR
YOU**

Agenda

Recap:

- Overview
- Distribution of breweries
- Address missing values
- Analyze ABV and IBU

IPA vs Ale classification

IPA vs Ale by State

SMU



Overview

Objective: Provide analysis on breweries in the United States with a focus on impact of International Bitterness Unit (IBU) and Alcohol Beer Volume (ABV).

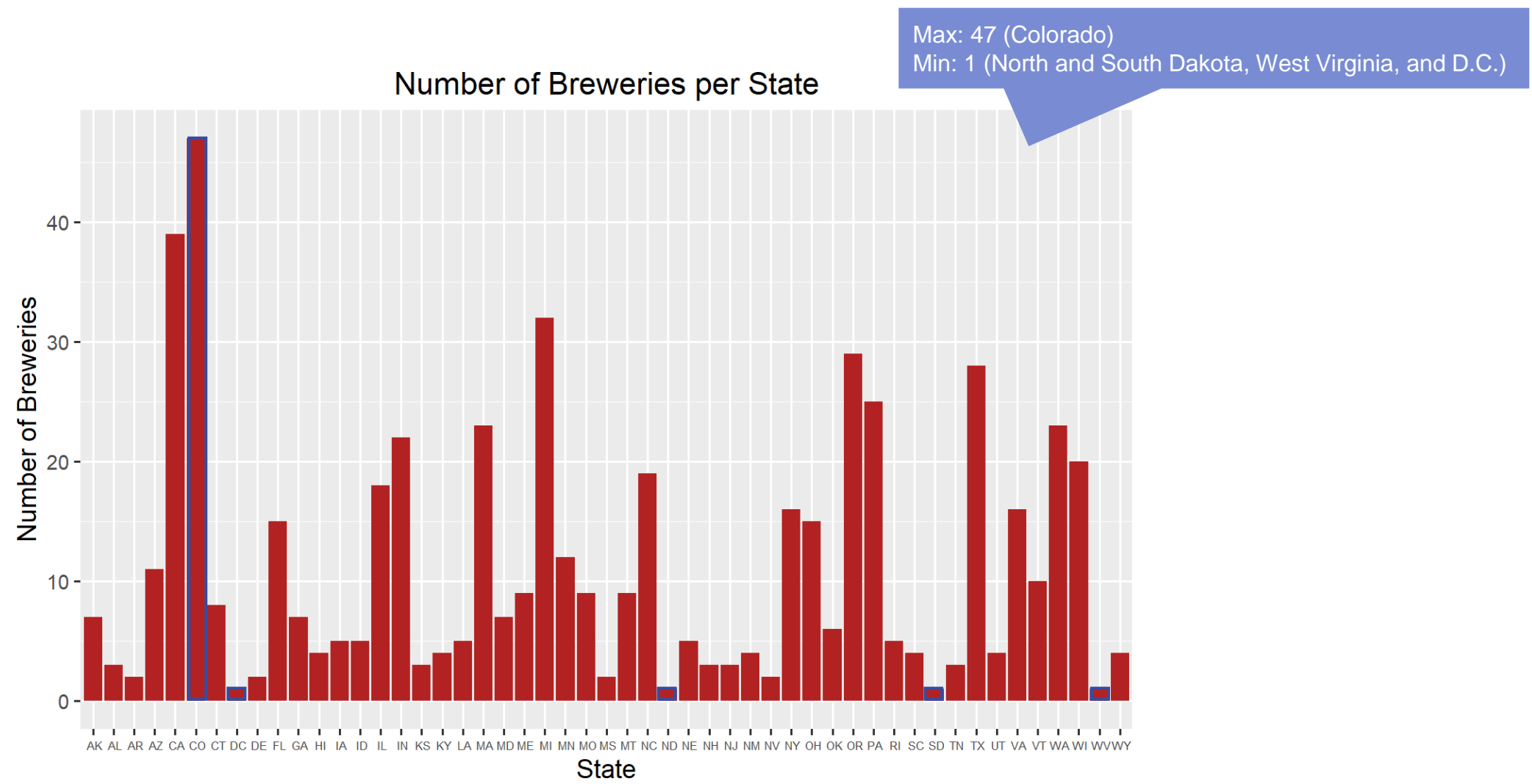
Brewery Dataset

- » 558 breweries
- » Brewery name
- » City and state

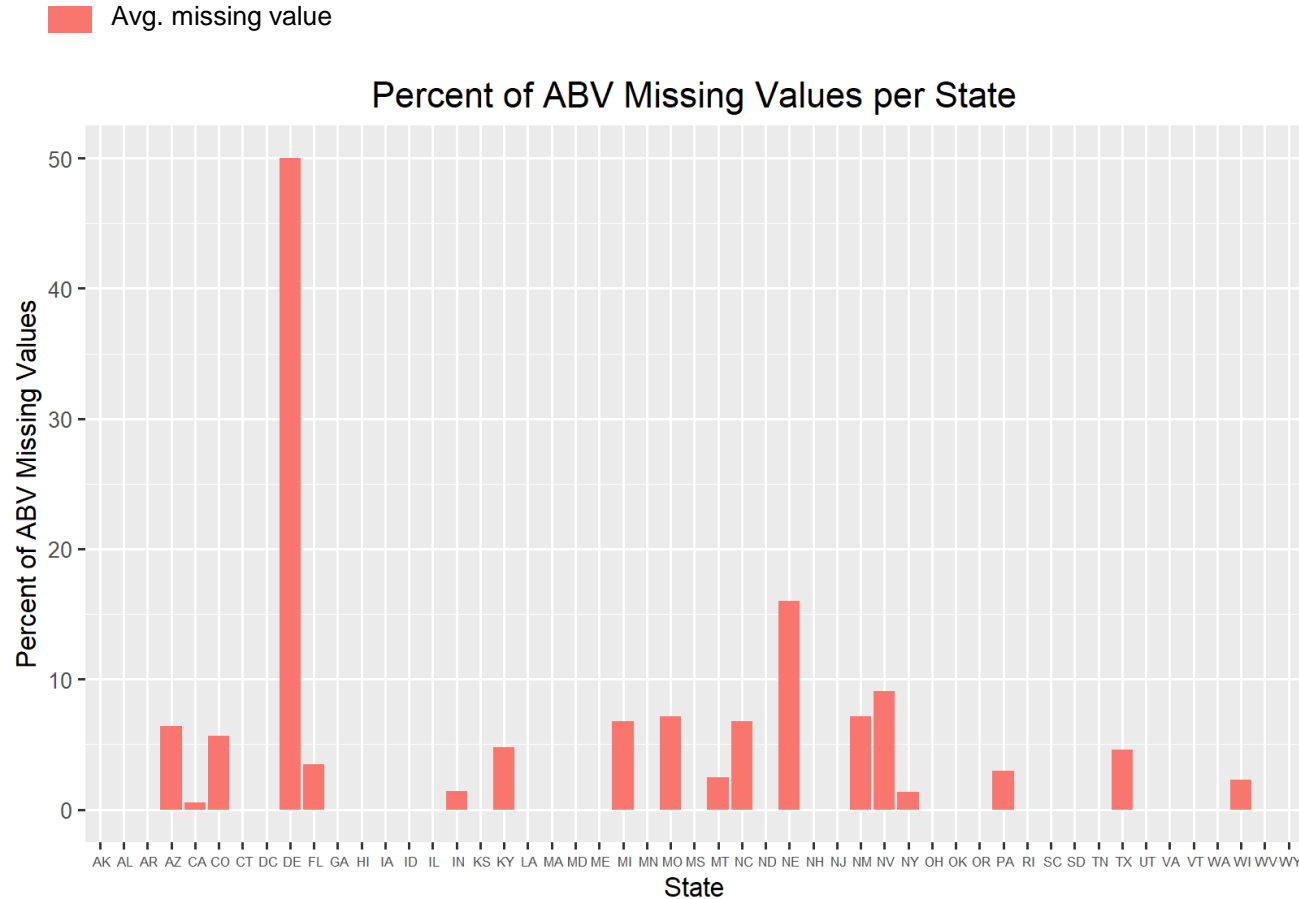
Beer Dataset

- » Contains 2410 US craft beers
- » IBU: International Bitterness Units of the beer
- » ABV: Alcohol by volume of beer

Significant difference in number of breweries across the nation



ABV Missing Values



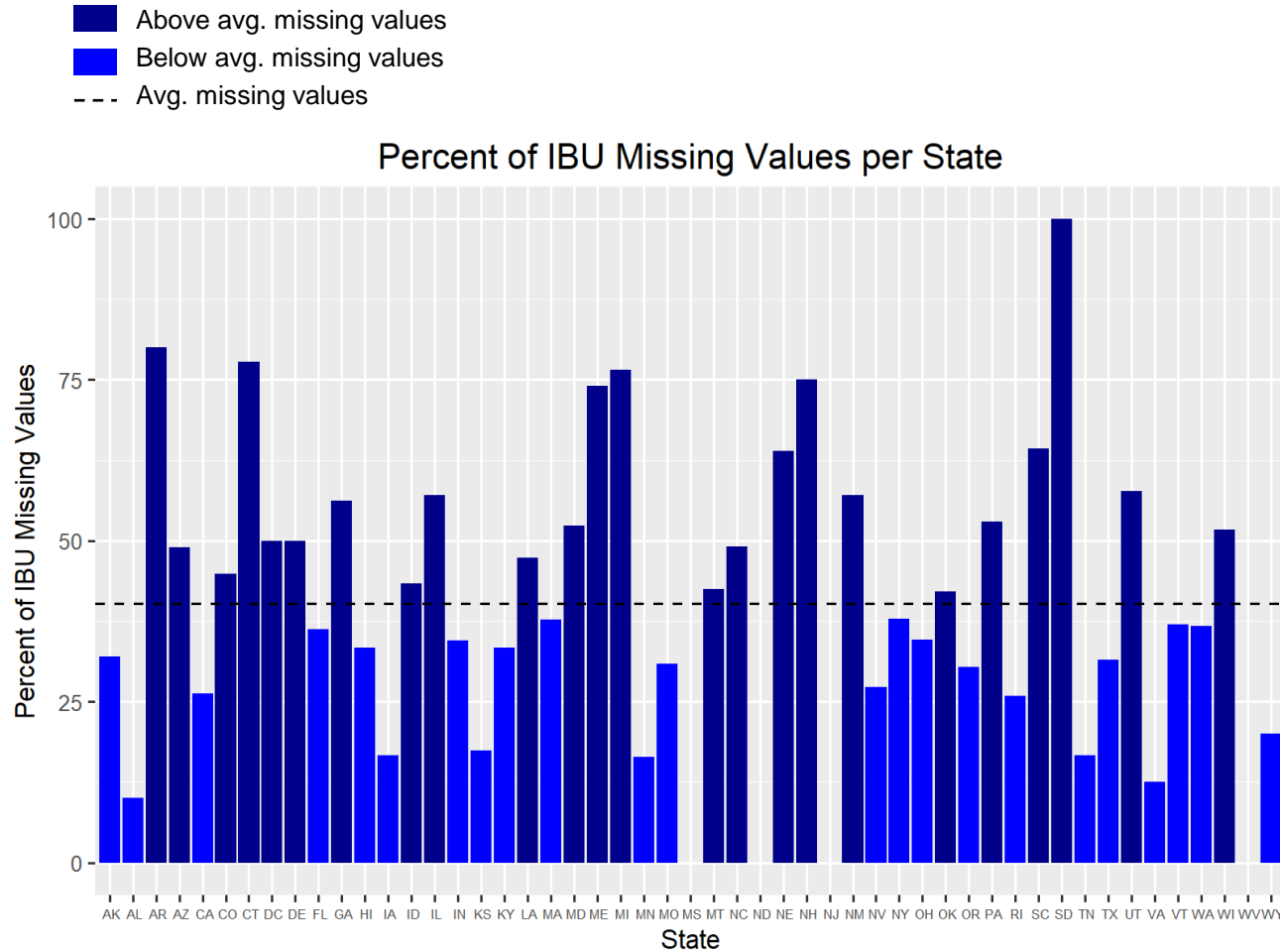
Address Missing Values

- Total of 62 missing values accounting for ~2.6% of data
- Missing Completely at Random (MCAR)
 - Missingness of ABV does not appear to be dependent on any other variables

Imputation Method

- Replace missing values for ABV with the overall average
 - Mean ABV imputation: 0.05977

IBU Missing Values



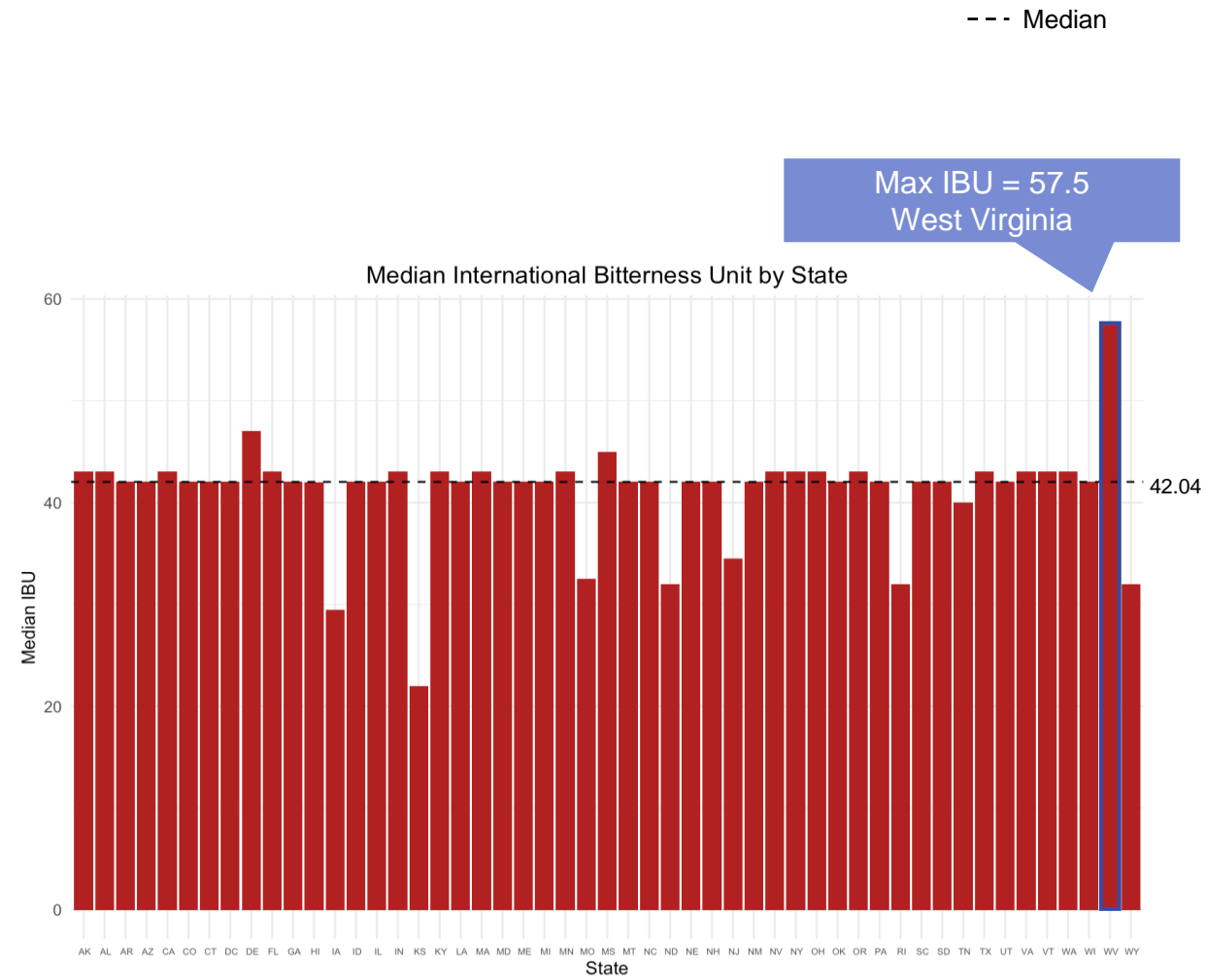
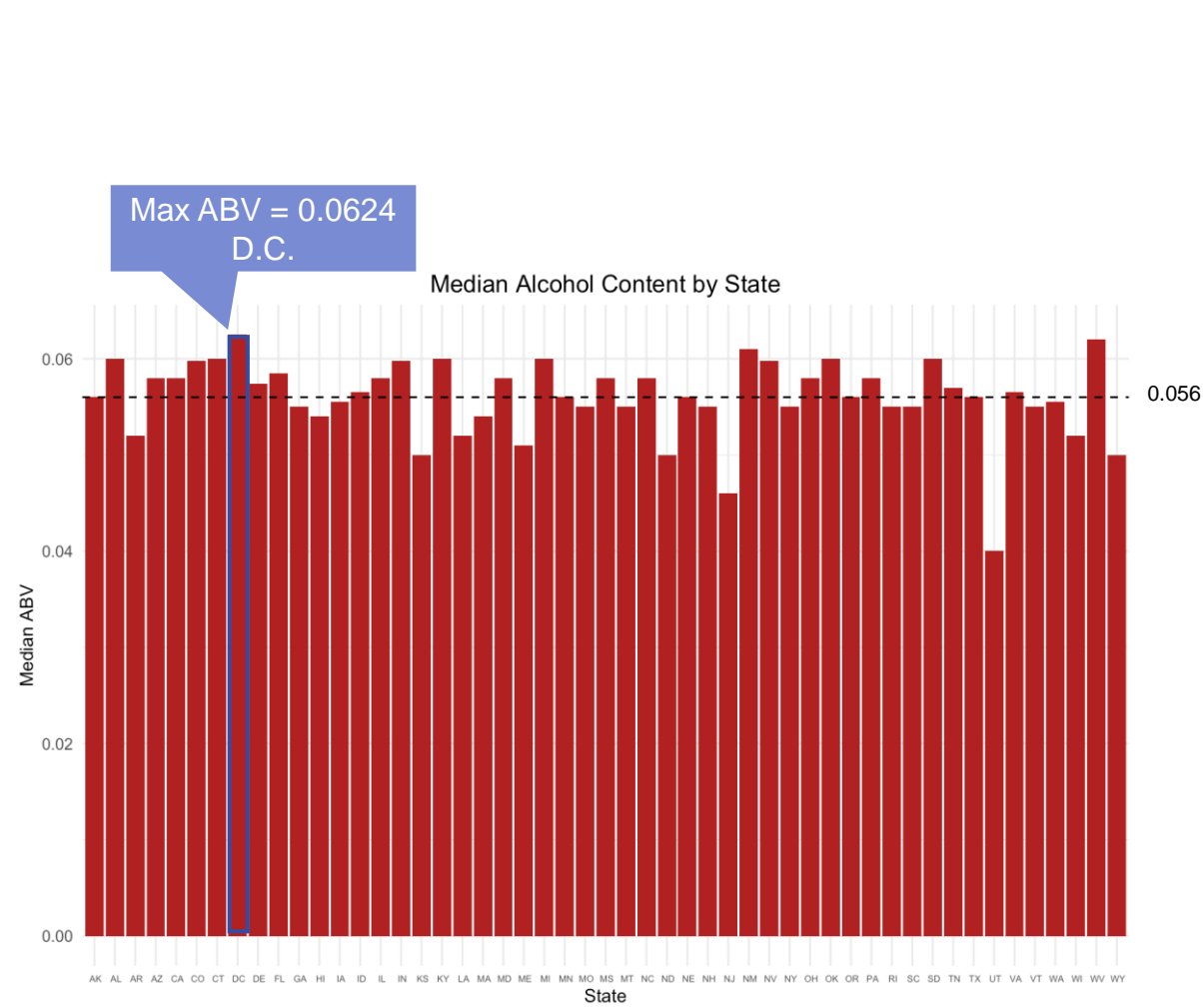
Address Missing Values

- 1,005 missing values accounting for ~42% of data
- Missing Completely at Random (MCAR)
- Missingness of IBU does not appear to be dependent on any other variables

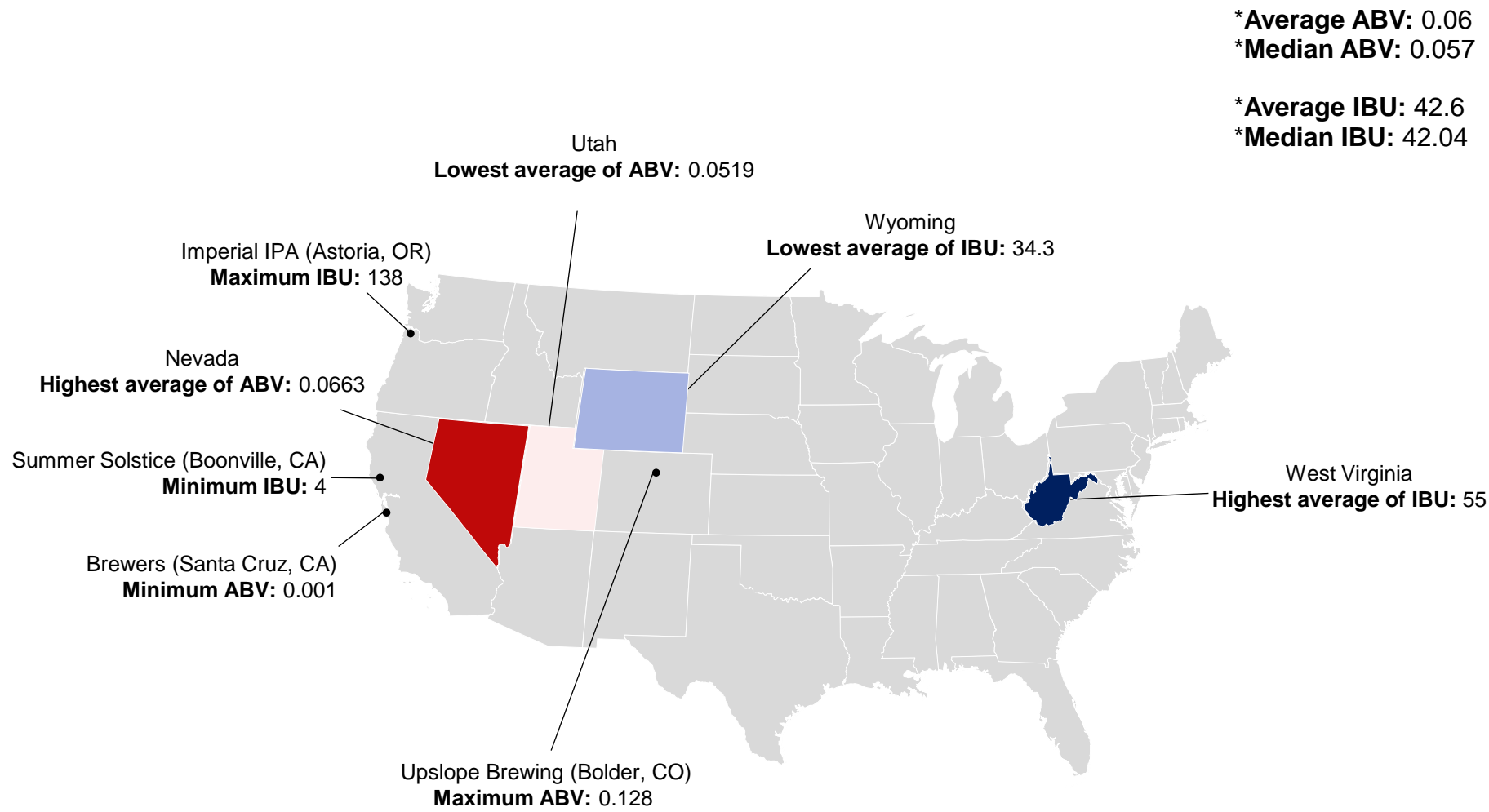
Imputation Method

- Multiple mean imputation
- Replace missing values for IBU with the separate averages for states with above and below average.
 - Mean IBU imputation above average: 42.04
 - Mean IBU imputation below average: 43.08

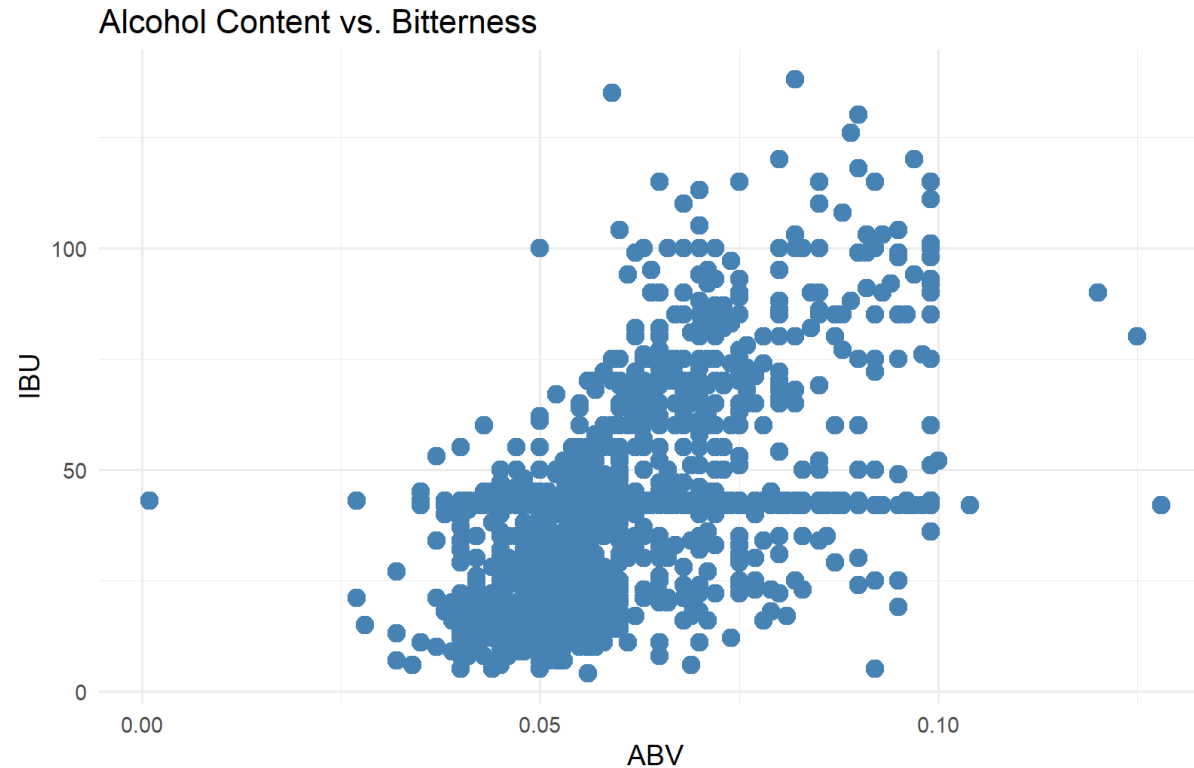
Median ABV & IBU per state



Statistics of ABV and IBU



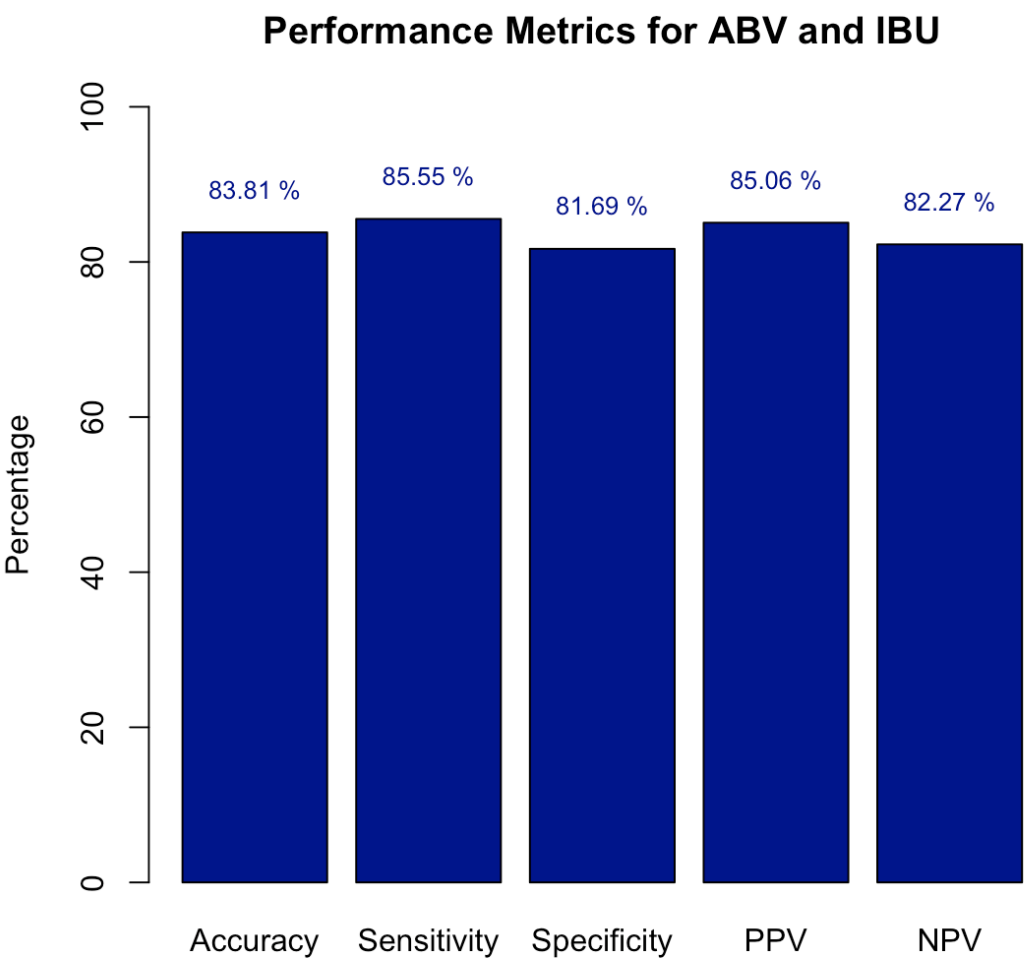
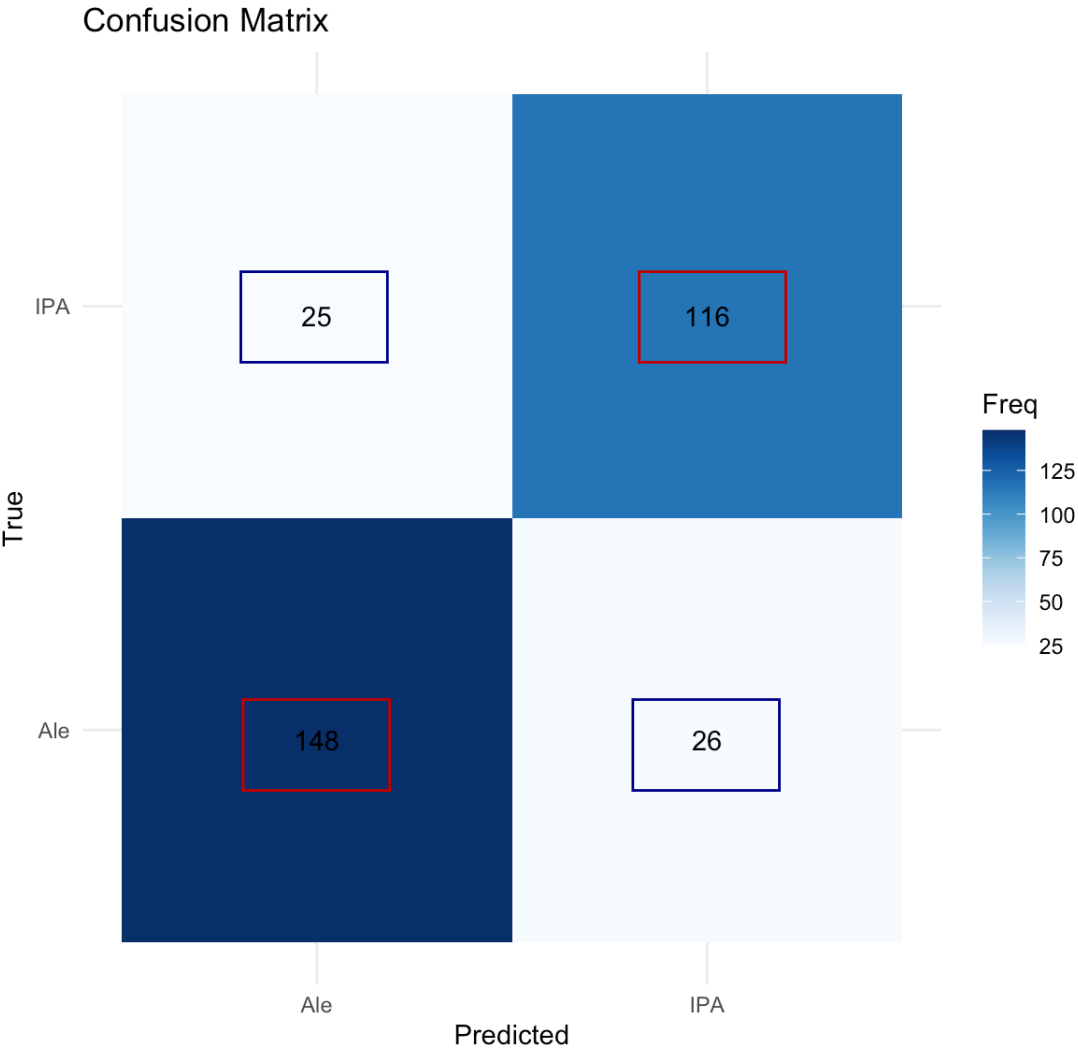
Alcohol content vs. bitterness



An increase in alcohol content (ABV) does appear to be associated with bitterness (IBU)

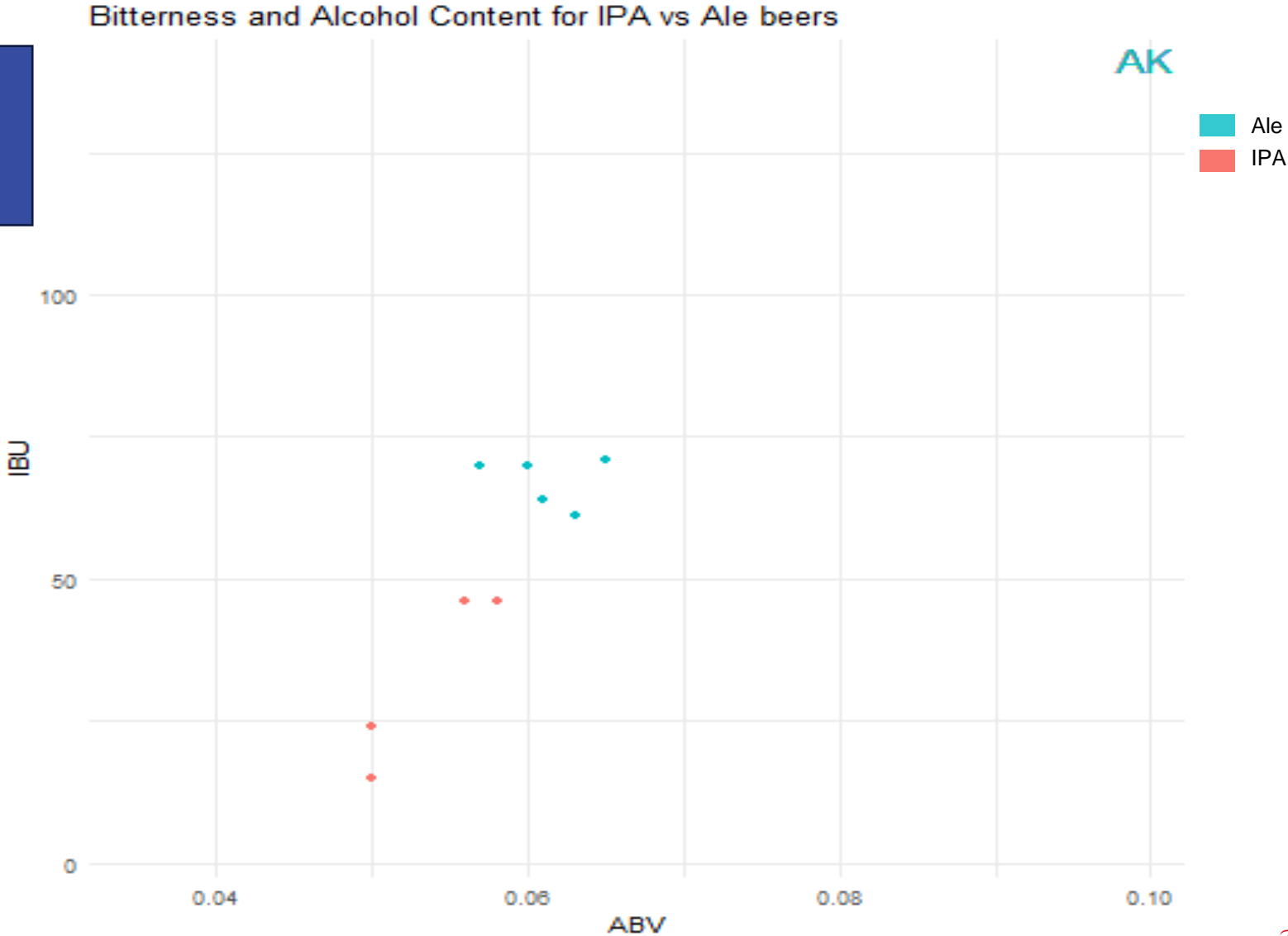
*Note: Increase in ABV does not cause in IBU or vice versa

IPA vs Ale classifications



IPA vs Ale bitterness and alcohol content

On average IPA's have higher bitterness and acholic content than Ale's



Thank You!



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