The next topic we're going to talk about looks at the location of wineries on earth.

We used a data set from the Wine Magazine,

The wine Magazine rates and reviews wines from all over the world.

US has the most wineries reviewed.

France has the 2nd most,

Italy and Spain land on 3rd and 4th.

The Wine Magazine is an American publication, which could indicate a bias towards US wineries.

Referring to the date the Ashwin presented we can see the following facts:

The top 3 consumers of wine are:

US with 32000

France with 27000

and Italy with 23000

Also interesting is the fact that Spain is the biggest exporter of wine in the world as of 2016.

We wanted to understand if it matters for a good wine, where the grapes grow.

To visualize our data we used the google places API to find the Latitude and Longitude of each winery.

With this data we were able to create a heat map showing every single of the 150,000 wines reviewed in our dataset. The intensity of red represents the quality of wine. The stronger the better the wine rating.

As you can see from our global heatmap, we have wineries from all over the world with very visual clusters in Western North America, Western, Southern and Central Europe , SW South America and parts of Australia. To sort this data in political regions might ignore important global facts of good wine growth regions.

We again used an API to determine the climate regions of each winery based on the location data.

The climate zones are based on the Koeppen-Geiger Climate Classification.

In short there are 5 main climates which are subgroups based on their Precipitation and Temperature.

The bar chart shows the top 10 Climate zones.

The 3 most common CZ’s are Csb, Cfa and Cfb.

Let’s see where these zones are located.

Csb: most reviewed CZ.

Bright green

W/US ( California, Pacific North West)

Nortehrn Iberian Peninsula, Mediterian area

SW Australia

SW South America ( Chile , Argentina)

Cfa: 2nd most reviewd:

SE USA

SE South America (Brazil, Argentina)

West / Central Europe ( France, Germany, Hungary)

SE Australia and New Zealand

Also Eastern China: 🡪 Very interesting fact since we found during our research that China is the fastest growing wine producer on earth, but our data does not reflect it since its from 2017 and before.

Lets visually compare our heatmap with the Koeppen Climate zone map.

West USA cluster

Europe

Argentina/Chile

South Africa

Australia

These are all known regions to produce great wines (if you are a wine drinker)

These visualizations are great and show that there must be a correlation between location and quality of wine. Therefore, we were looking at statistical tools to get an answer.

We choose to use the ANOVA method to compare the top 10 reviewed Climate zones.

We fist used a box and whisker plot to show the ranges of scores, then calculated the P-Value.

The p-Value is 1.8-23. This would be 23 zeros in front of the 1.8.

A p-value less than 0.05 and therefore is statistically significant. It indicates strong evidence against the **null** hypothesis.

Therefore, we accept the hypothesis that it matters where you grow grapes to produce a wine with great ratings.