An analysis of Michelin Starred Restaurants worldwide 2019

Contents

Executive Summary

Main findings:

Introduction

THE MICHELIN GUIDE 2020

Amongst the culinary world, there are few greater accolades than a restaurant being awarded a Michelin star (or three!). Foodies and fine dine lovers, like myself, see the experience of dining at one of these award winning restaurants, as just that, an experience, and thus take to looking at guides such as The Michelin Guide and The Good Food Guide to help us determine which restaurant is next worth visiting.

The guide states the following definitions for each of the Michelin star awards:

One star: "a very good restaurant"
Two stars: "excellent cooking that is worth a detour
Three stars: "exceptional cuisine that is worth a special journey"

THE WORLD'S 50 BEST RESTAURANTS 2019

Taken from The World's 50 Best Restaurants website:
"Since 2002, The World's 50 Best Restaurants has reflected the diversity of the world's culinary landscape. Thanks to its panel of more than 1,000 culinary experts, as well as its structured and audited voting procedure, the annual list of the world's finest restaurants provides a snapshot of some of the best destinations for unique culinary experiences, in addition to being a barometer for global gastronomic trends."

This list is often cited in publications around the world, including The Telegraph and as such, has now become one of the leading guides on gastronomy around the world. You would therefore think that the results of this list should run somewhat parallel to the Michelin Guide.

But how exactly does the spread of Michelin stars and the top 50 restaurants look like not only across the UK, but also the world? And what more can we understand about the types of restaurants that have received these awards?

By exploring The World's 50 best restaurants, can we determine if there is in actual fact a correlation with restaurants included in the guide and those given Michelin stars?

Data

Having undertaken extensive web scraping and data analysis, I have explored just these questions and more. I delved into the current edition of the online Michelin Guide for every country currently partaking in the awards - each country's guide has an individual website which had to be scraped for the data. I have also scraped The World's 50 best restaurant website, 2019 list.

The full script for this web-scraping is here and the full data analysis script can be found here.

Tools and libraries used for this analysis, all in Python: Jupyter notebook, BeautifulSoup, Pandas, NumPy, Seaborn, Plotly.

The main findings of the analysis are below.

The Michelin Guide 2020

OVERVIEW

There are 3,299 restaurants included in the Michelin guide worldwide, compiled of individual guides from 31 countries. The following countries are included in the guide:

Austria, Belgium, Brazil, China, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hong Kong, Hungary, Ireland, Italy, Japan, Luxembourg, Macau, Netherlands, Norway, Poland, Portugal, Singapore, Spain, South Korea, Sweden, Switzerland, Taipei, Thailand, UK, United States.

Of these 31 countries, the ten with the most stars are:

Country
Japan   669
France   628
Italy   372
Germany   302
Spain   213
United States   207
UK   169
Switzerland   124
Netherlands   111
Belgium   72

Japan leads with the most stars worldwide, with UK coming in 6th place. We can further analyse this breakdown of stars per country, looking at how many 1 star, 2 star and 3 star restaurants there currently are in each country.

## Michelin starred restaurants per country 2020
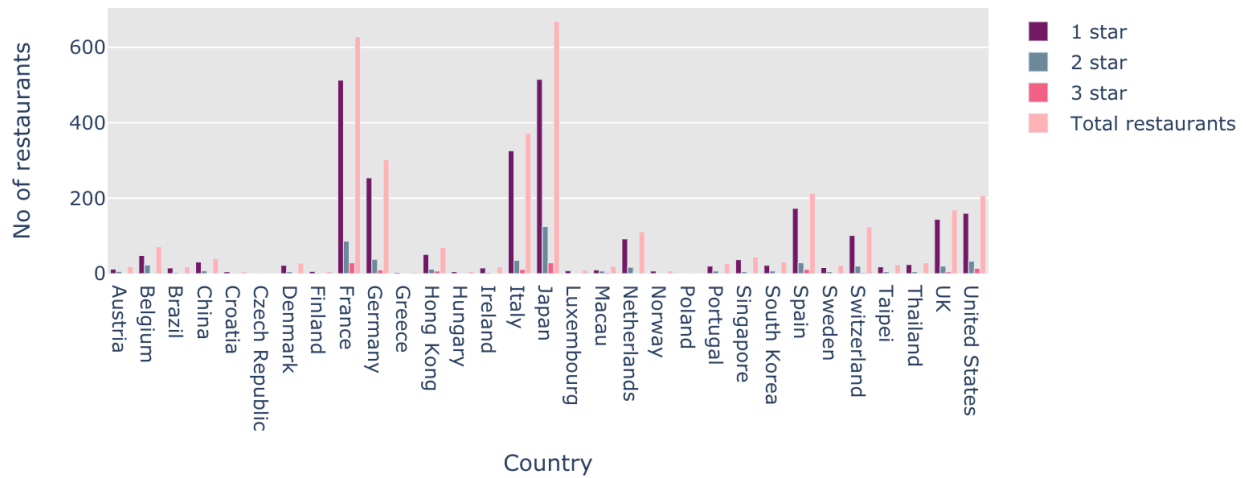
Add html link here for all charts too

Japan has the most 3 star restaurants, followed by France, Italy and Germany, which follows the pattern of countries with the most starred restaurants.

We can visualise this information on a world heat map. Find the interactive version of this here.

Michelin starred restaurants by country 2020
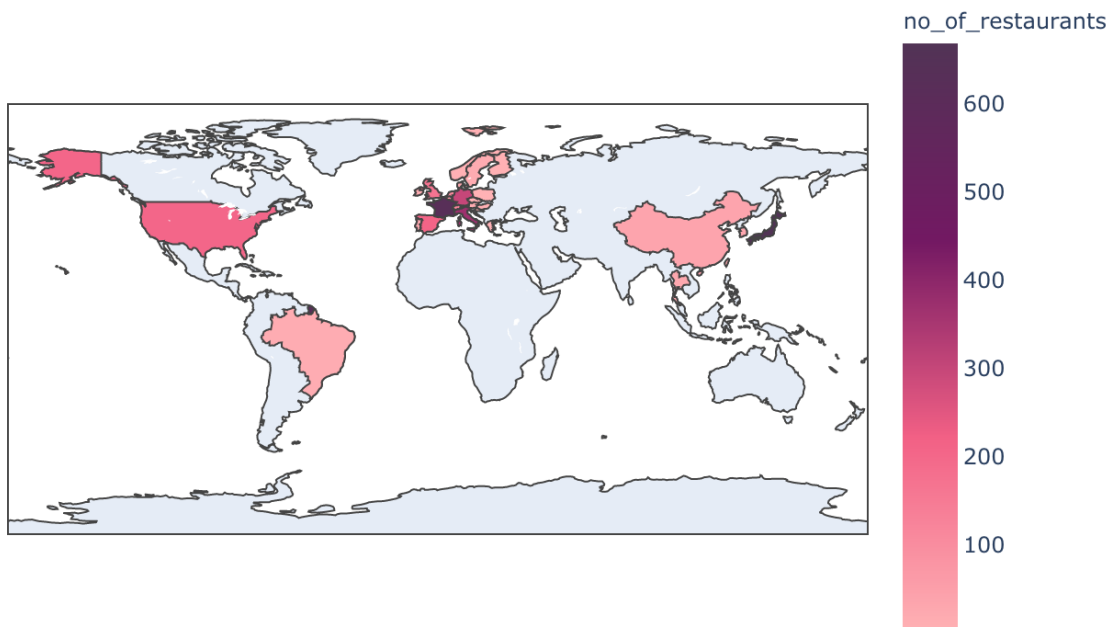
CUISINES

There are 103 different cuisines included in the data. It is worth noting that there are some overlaps in a handful of cuisine names, for instance we have 'French' and 'Classic French',

'Creative British' and 'Modern British'. However further investigation into this showed that this does not skew the outcomes in a way that we need to change these.

We can explore these cuisines in two different ways:
1) The number of restaurants of a certain cuisine, which have one star or more
2) The total number of stars for each cuisine. ie. if a restaurant has 3 stars, all three will be added to the total of stars in this cuisine

The top 10 cuisines with the most starred restaurants are:

```
cuisine
Modern cuisine    708
Creative          450
Japanese          368
French            147
Sushi             110
Contemporary       86
Classic cuisine    68
Italian            56
Modern British     42
Cantonese          41
```
The cuisine with the most restaurants included in the guide is Modern Cuisine.

The top 10 cuisines with the most stars overall are:

```
cuisine
Modern cuisine    795
Creative          625
Japanese          484
French            182
Sushi             143
Contemporary      124
Classic cuisine    83
Italian            60
Innovative         57
Cantonese          55
```

The cuisine with the most stars is also modern cuisine, and the majority of this tope 10 list is the same as the top cuisines with the most restaurants.

We can visualise both of these breakdowns of cuisine in a scatter plot. Click onto the link to view the interactive zoomable version.

Michelin stars 2020 by cuisine
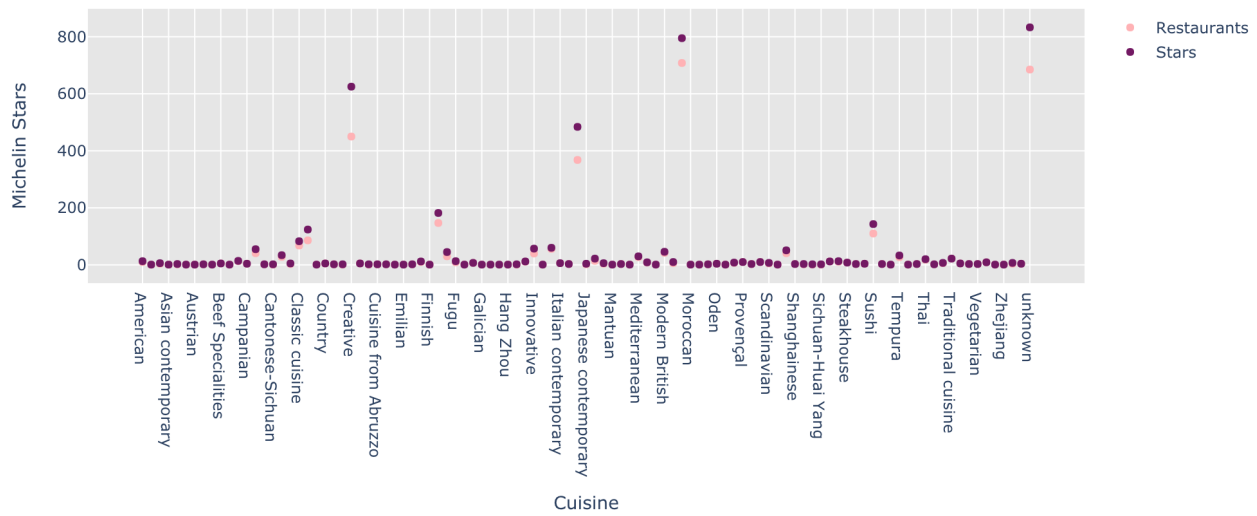
The can see there is a big difference between the two sets of data in particular for Creative, Japanese contemporary and Modern cuisine, which shows us that these cuisines most likely have more restaurants with the higher number of stars.

Upon further investigation, we can see that the Creative , Japanese and Modern cuisines do indeed have the highest number of restaurants with the highest 3 star accolade.

	cuisine	3 star
0	American	1
1	Asian	1
2	Cantonese	5
3	Chinese	1
4	Classic French	1
5	Classic cuisine	2
6	Contemporary	10
7	Creative	36
8	French	6
9	French contemporary	4
10	Innovative	1
11	Italian	1

12	Japanese	21
13	Korean	2
14	Mediterranean	1
15	Modern French	1
16	Modern cuisine	15
17	Seafood	3
18	Sushi	6
19	unknown	17

The chart below visualises this information.

Three star restaurants by cuisine
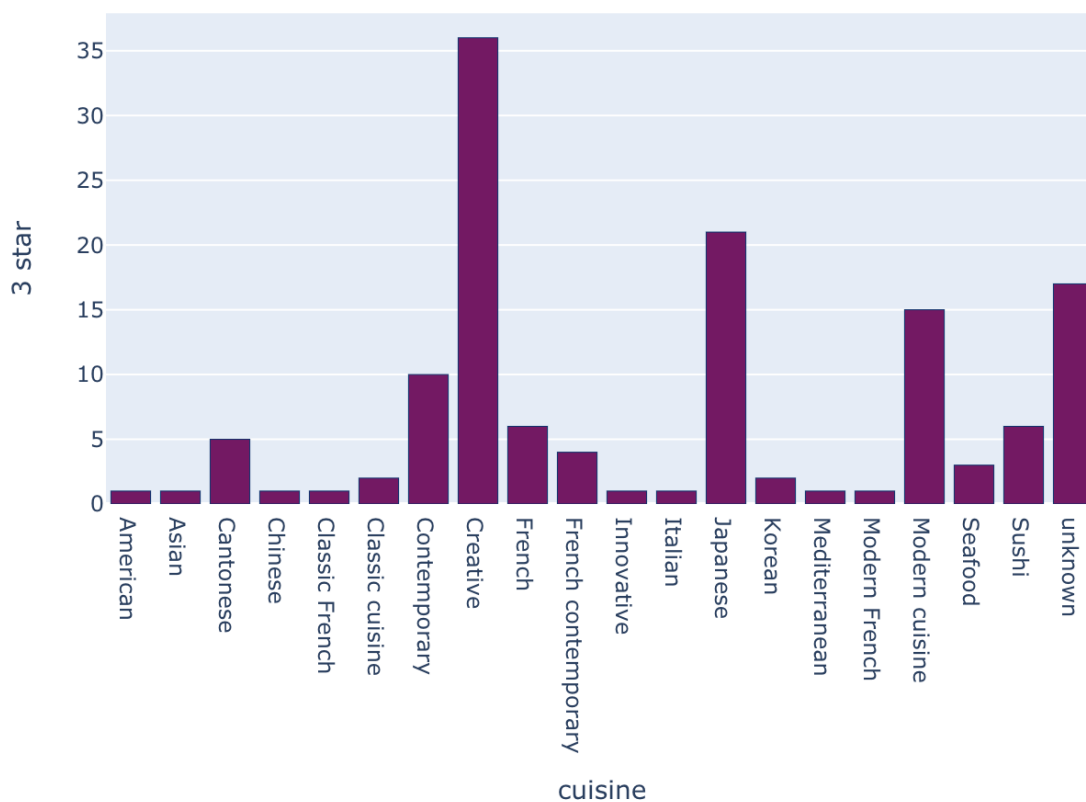
The heat map shows further the correlation between cuisines and number of stars.
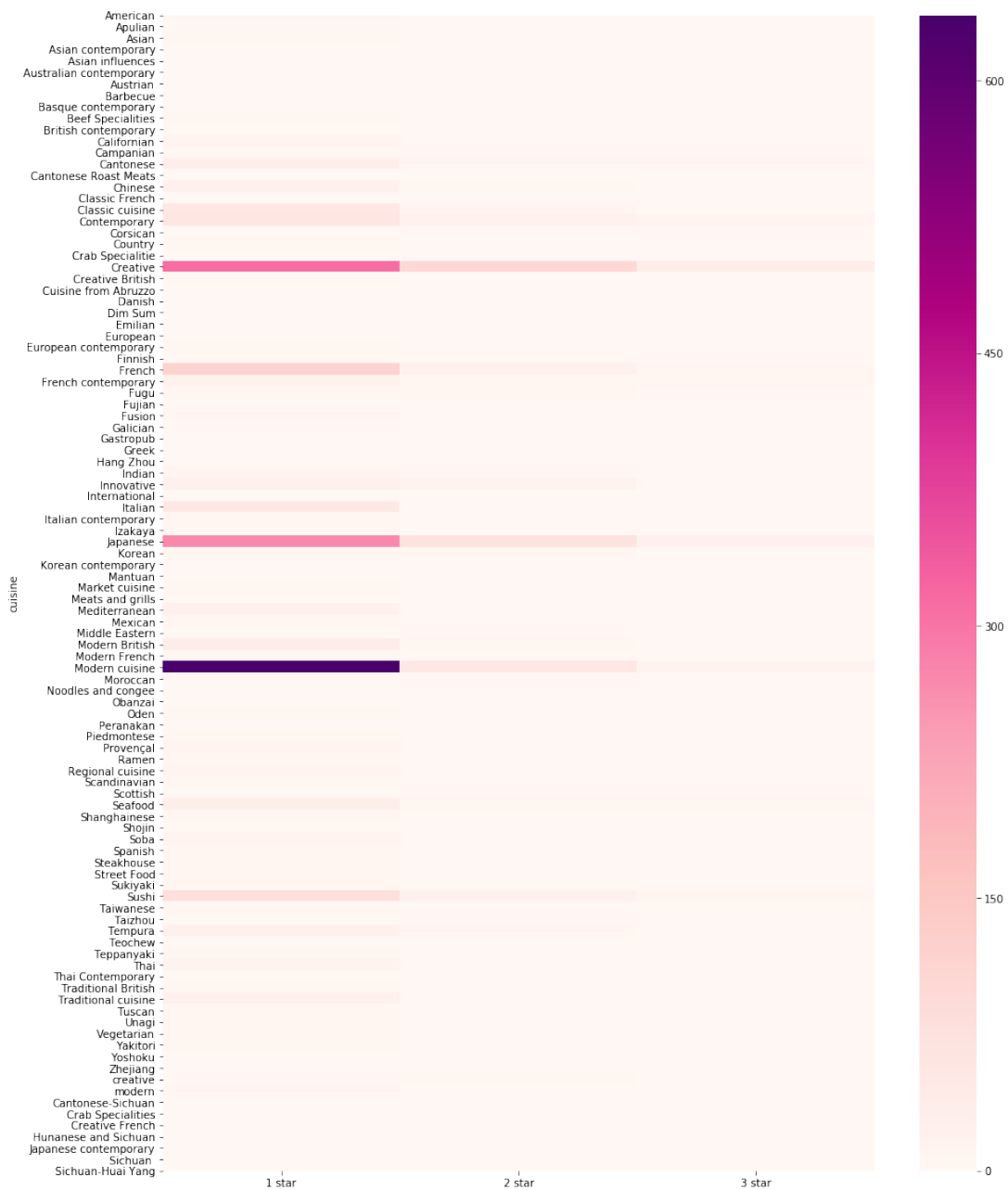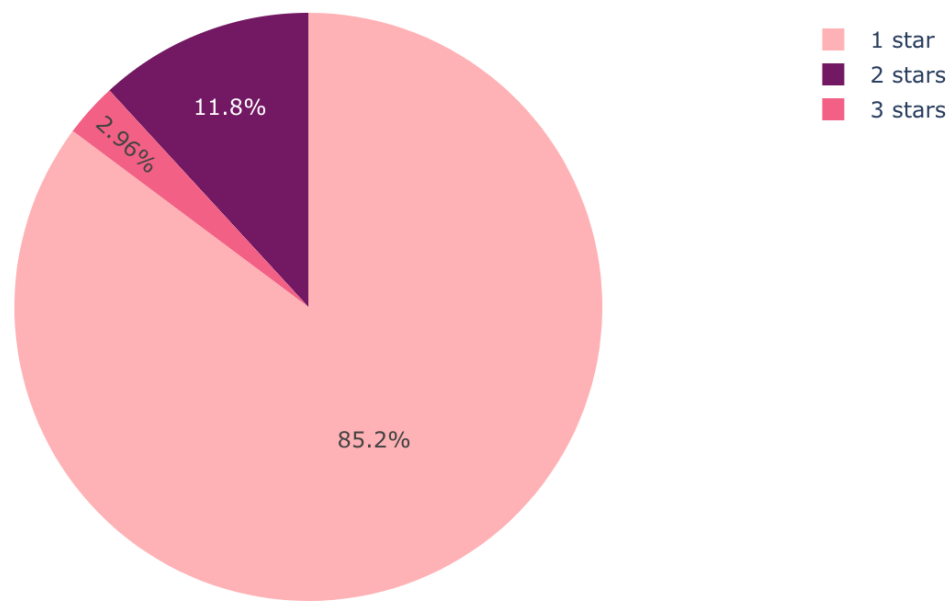
UNITED KINGDOM

In the United Kingdom, there are 144 one star restaurants, 20 two star restaurants and 5 three star restaurants. The majority of Michelin rated restaurants in the UK have 1 star, with a small

percentage having 2 or 3 stars.

Number of restaurants with michelin stars in the United Kingdom
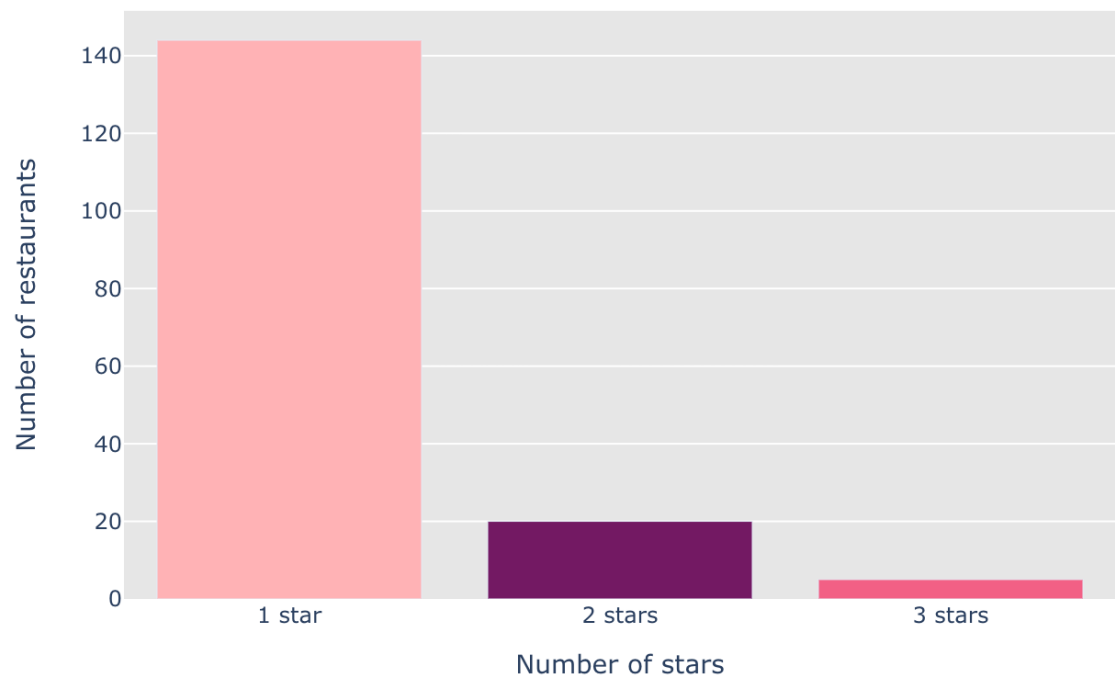
Proportion of 1,2 and 3 michelin stars across UK restaurants

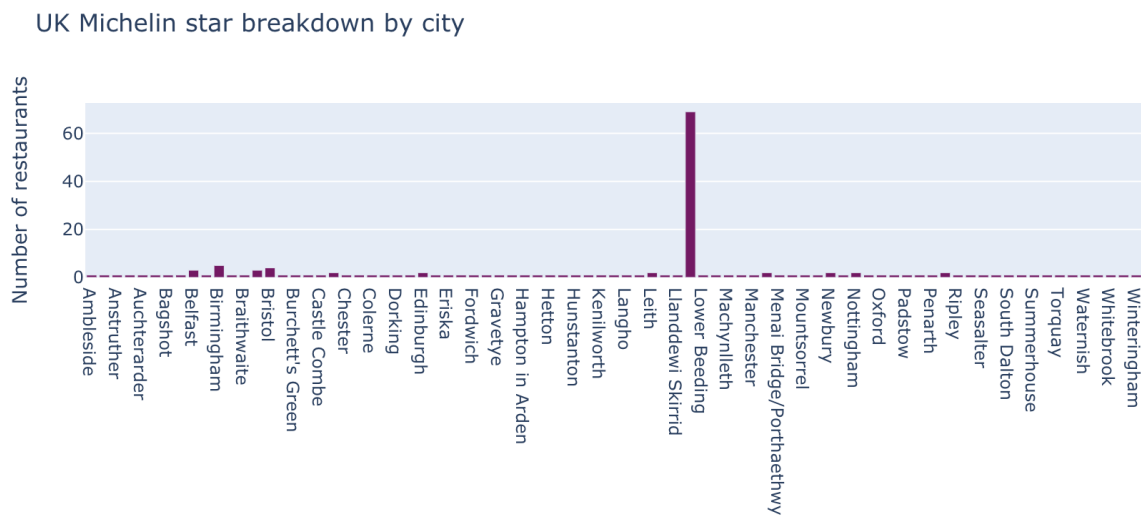

Michelin starred restaurants in the UK are spread across 83 different cities:

city
London   69
Birmingham   5
Bristol   4
Belfast   3
Bray   3
Cartmel   2
Edinburgh   2
Leith   2
Marlow   2
Newbury   2

London by far has the most starred restaurants, with Birmingham second, which is expected, What is interesting is that the bigger the city does not mean the more starred restaurants. As we would expect Manchester, Leeds and Sheffield to be the next in this list if we going by this rule. However Sheffield is not included in the list at all. Many of these areas in actual fact more rural villages or towns, rather than cities.
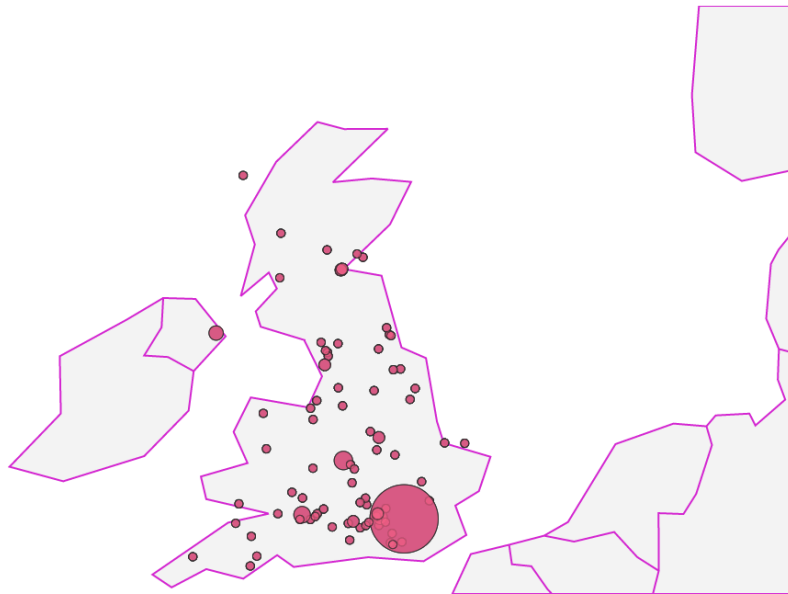
See the interactive chart here.

UK Michelin star breakdown by city

By visualising this spread on a bubble map of the UK, the restaurants are indeed spread across the entirety of the UK, but there are significantly more in the South than in the North.

View the interactive map here.

UK michelin starred restaurants
(Hover for city names)


World's best 50 restaurants

Now we will have a look at the data scraped from the world's 50 best restaurants list.

N.B. This list comes out in June each year for that year's list. Whereas the Michelin list comes out in October of the previous year - ie. 2020 list was announced in October 2019. For this reason, at the time of writing this report (Feb 2020), the 2020 Michelin guide's equivalent best 50 restaurant list is from 2019.

The 5 countries with the most restaurants listed in the guide are:

Country
 Spain   7
 USA   6
 France   5
 China   2
 Denmark   2

World's best restaurants 2019 - No. in list per country
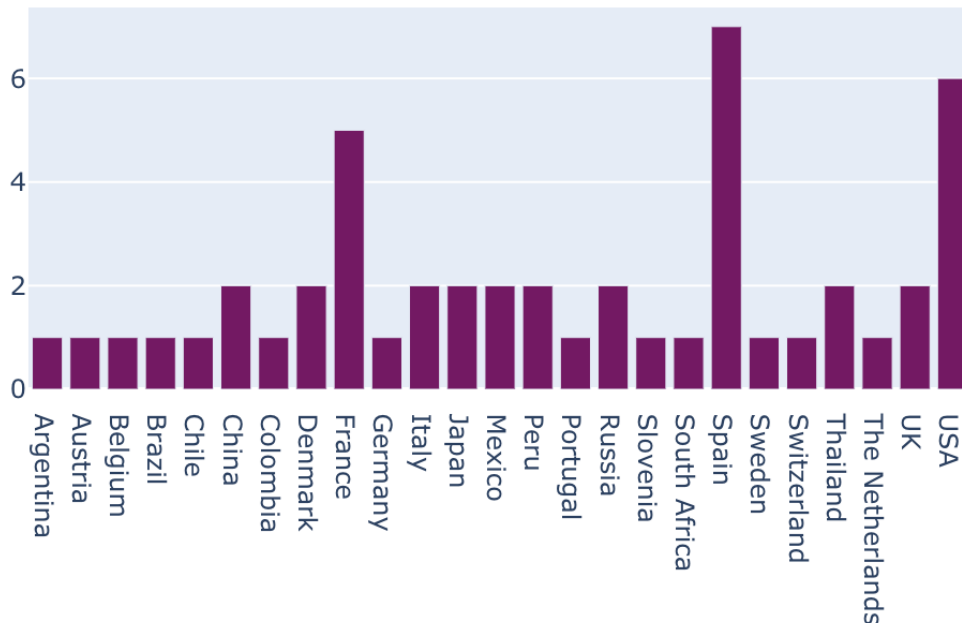
Spain has 7 restaurants in the top 50, equating to 14% of all the restaurants. There are 2 UK based restaurants on the list. Given how many Michelin stars the UK has, this is interesting. We would assume that if a country had more restaurants with stars, that the country is more likely to be on the Top 50 list.

World top 50 restaurants 2019
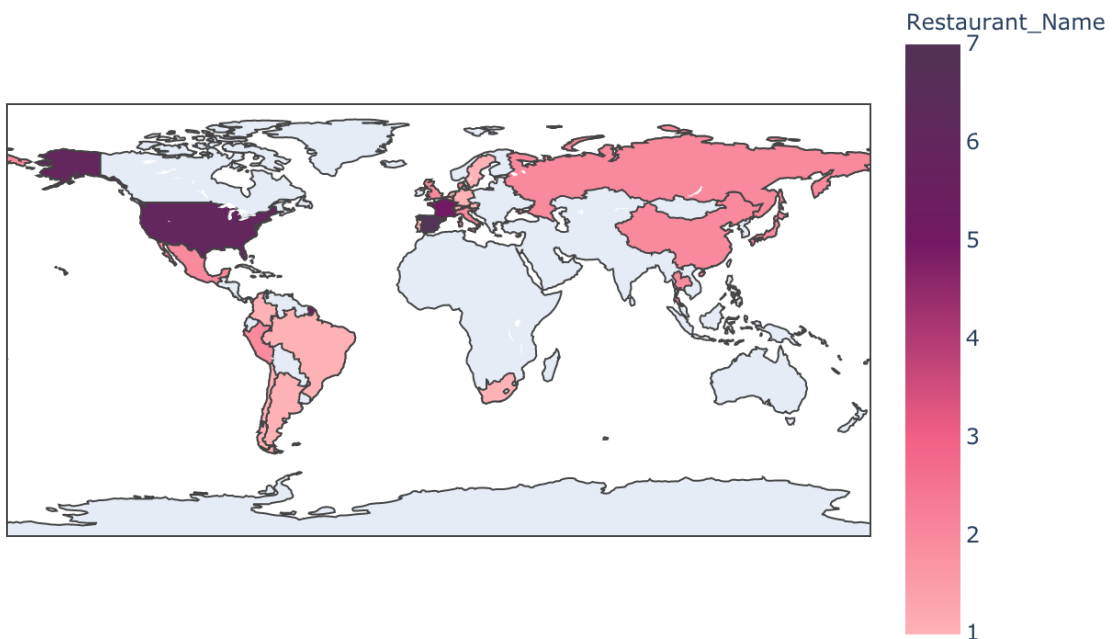
30 of the world's best 50 restaurants have one or more Michelin star, which leaves 20 restaurants classed as being the best in the world which do not have the award of one star or more. There are x 3 star restaurants on the list, which is very interesting, seeing as the Michelin Guide defines these restaurants as the best of the best - of being worthy of special trip.

Statistical test to determine if there is a correlation.
Do histograms, skews etc as learnt from the data science projects