

Covid-19 cases & Venues Data Analysis of Stockholm

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Introduction

- Covid-19 outbreak sparked a global emergency.
- Sweden, was one of the few countries that chose no lockdown. In fact, Sweden's main goal was to lower the rate of infection so that the need of hospital beds does not overwhelm. Therefore, Café shops in Stockholm remained open during the outbreak.
- Was Sweden right?
- Is there any correlation between Number of Café shops and confirmed Covid-19 cases?

Data

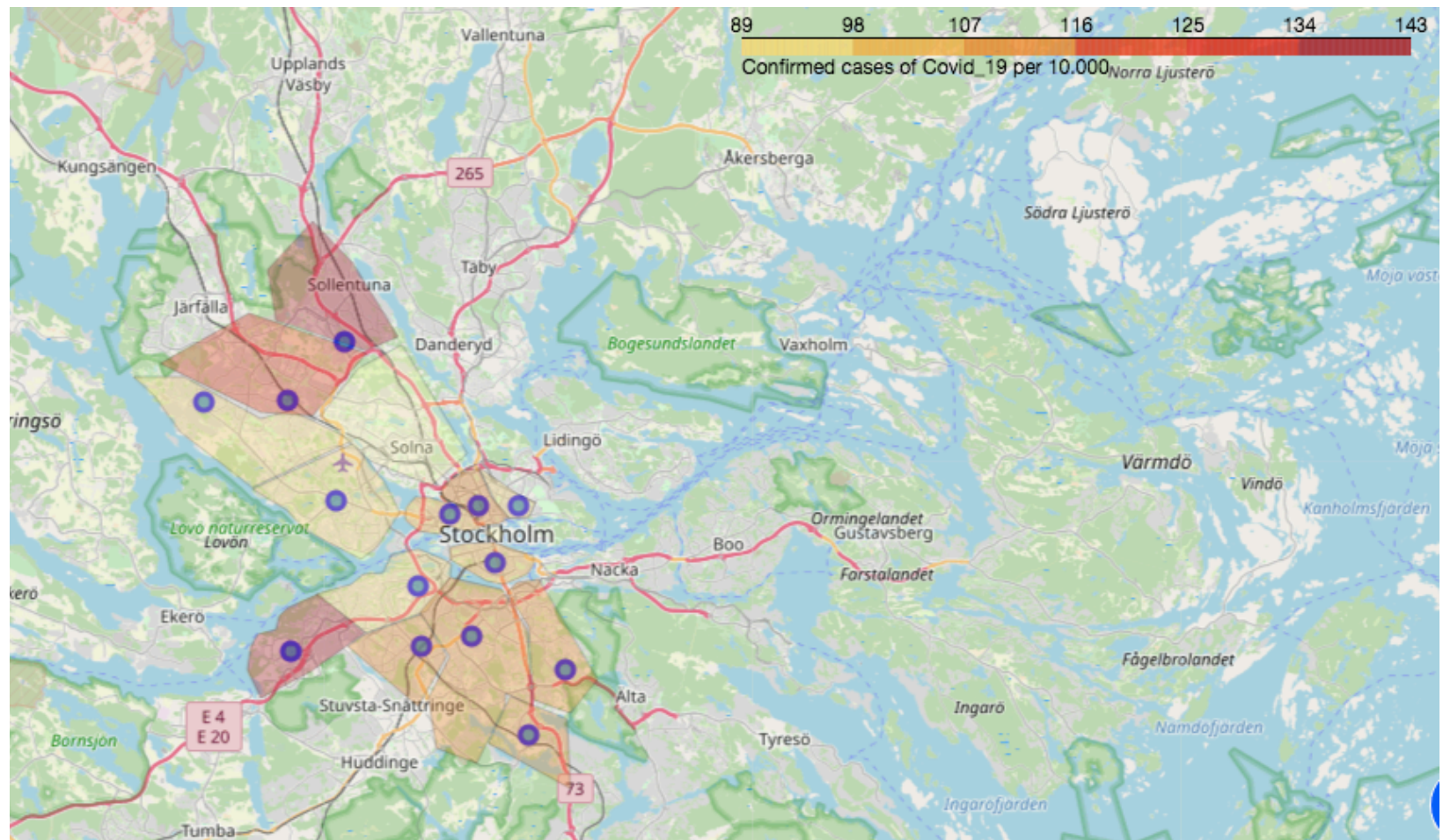
- Coordinate of Stockholm districts were found on Stockholm City website that were later used to create a Choropleth map of Stockholm.
- Foursquare API was used to get Café in Stockholm districts.
- Google Maps was used to get the center coordinates of each districts in Stockholm.
- Covid-19 cases per district were downloaded from the official Stockholm City website responsible for publishing covid-19 news on a weekly basis
- It is important to note that these data were collected up to the 31 week of 2020. Any cases after this date were not included in this report.

Data Collection

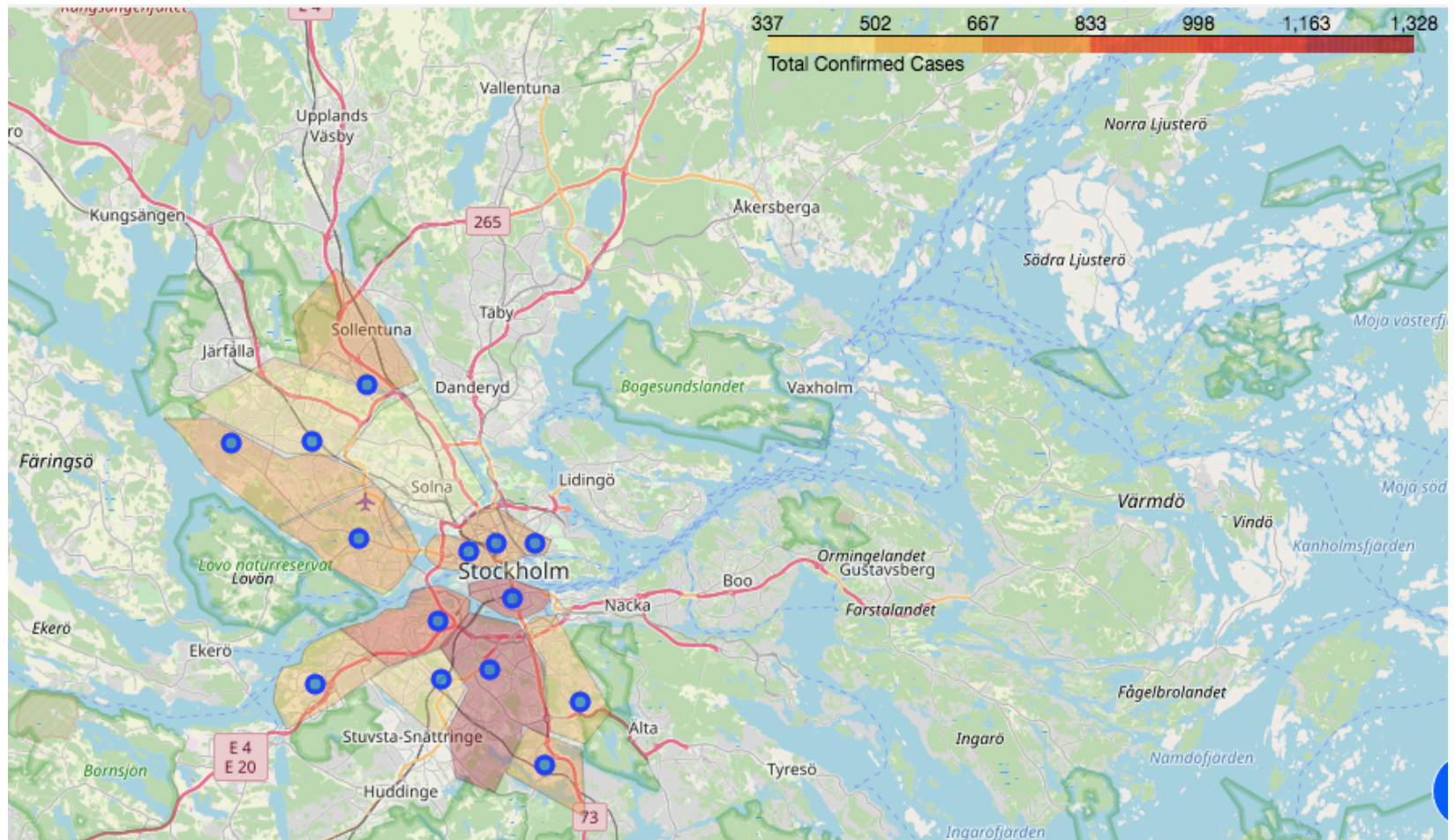
08/10/21

	Districts	Confirmed Cases Per 10.000	Latitude	Longitude	Total Confirmed Cases
0	Alvsjo	110	59.277860	18.008880	347
1	Bromma	93	59.338889	17.938889	753
2	Enskede-Arsta-Vantor	115	59.281755	18.051066	1183
3	Farsta	115	59.240278	18.097222	687
4	Hagersten-Liljeholmen	93	59.303268	18.005921	857
5	Hasselby-Vallingby	97	59.379777	17.830623	739
6	Kungsholmen	103	59.333016	18.033094	734
7	Norrmalm	110	59.336997	18.056697	806
8	Ostermalm	90	59.336701	18.088621	708
9	Rinkeby-Kista	142	59.405409	17.945848	726
10	Skarholmen	140	59.275407	17.902173	530
11	Skarpnack	113	59.268037	18.128015	525
12	Sodermalm	101	59.312879	18.069671	1318
13	Spanga-Tensta	121	59.381009	17.899786	472

Visualization of regions with the highest, medium and lowest confirmed cases of Covid-19 per 10.000:



Visualization of regions with the highest, medium and lowest of total confirmed cases of Covid-19

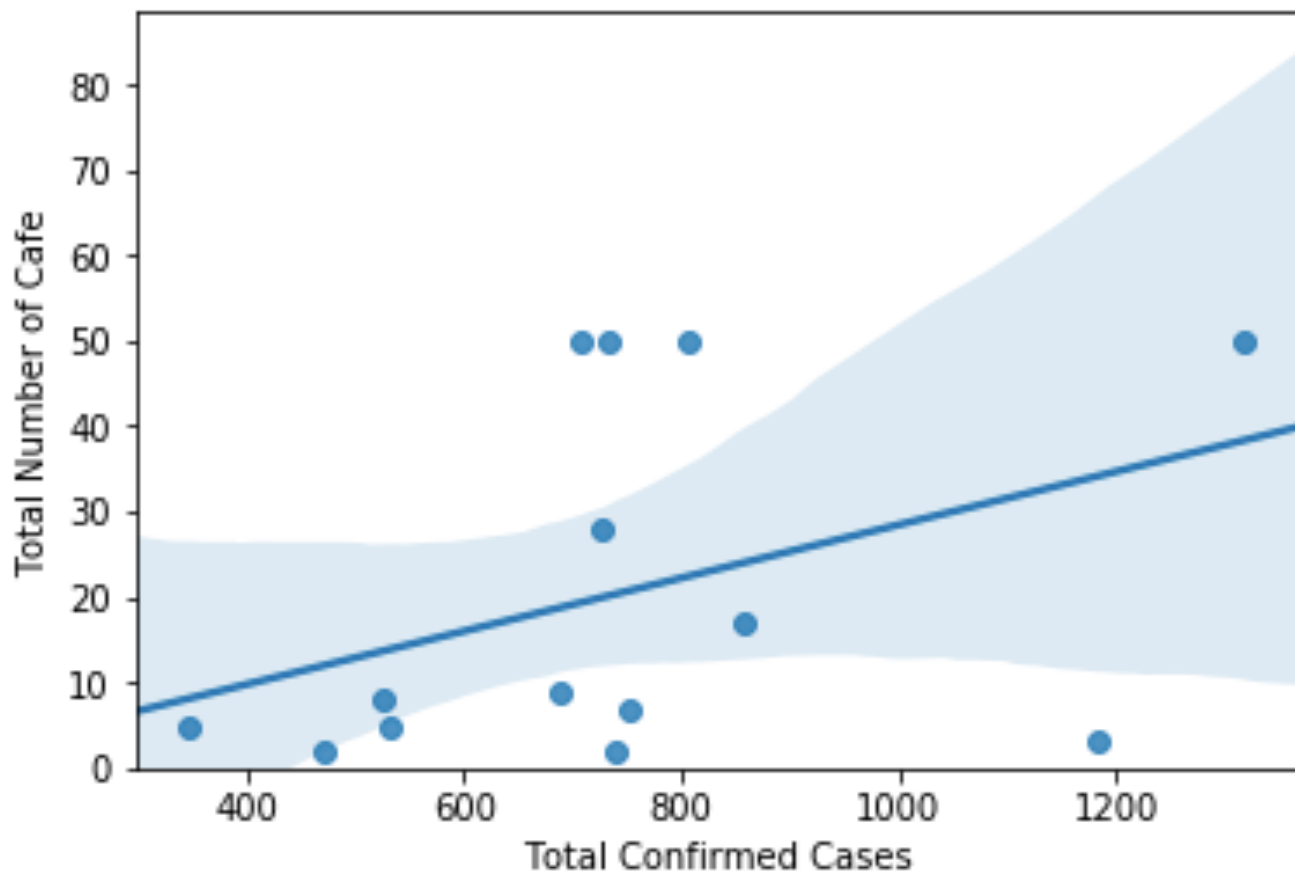


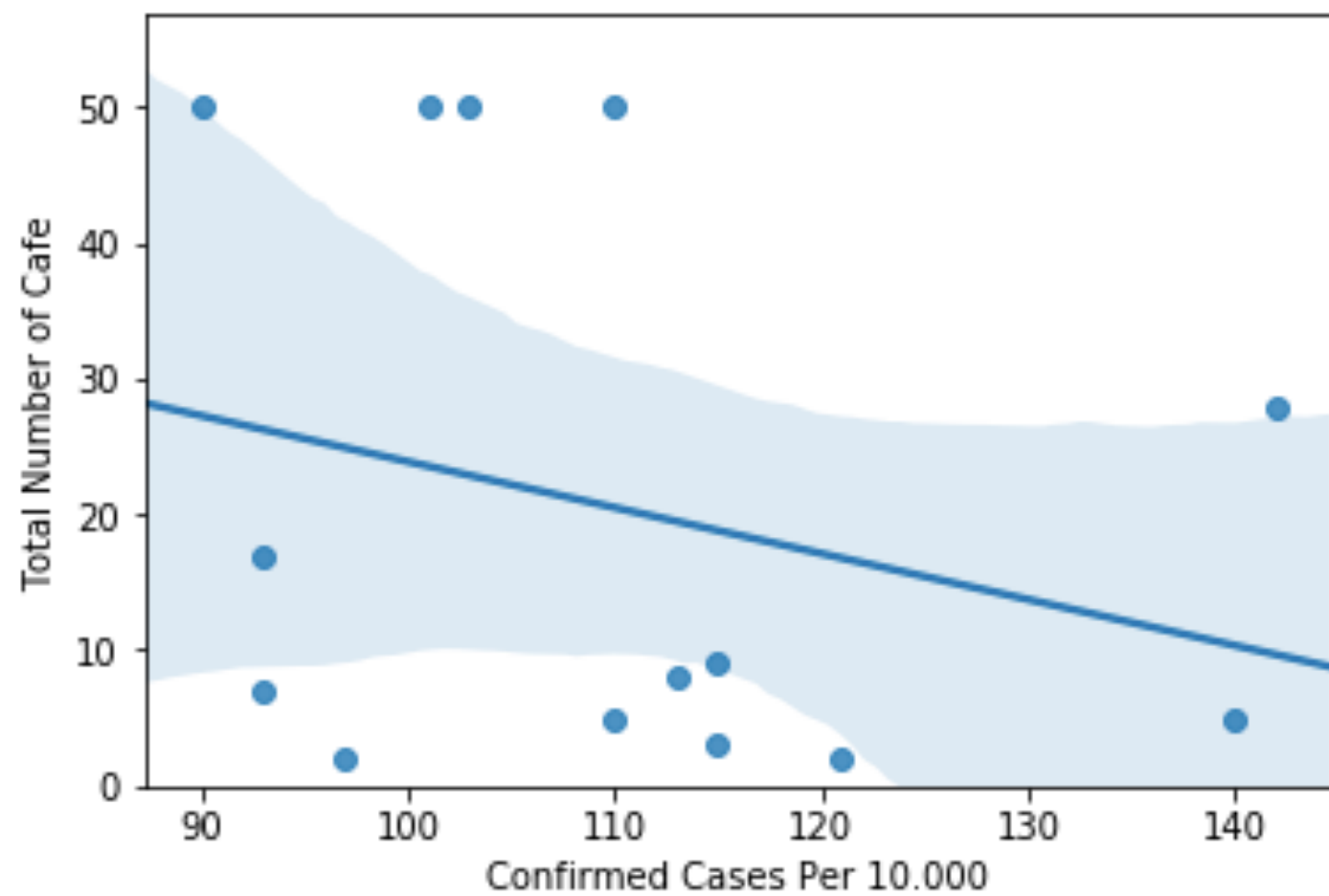
Foursquare – Number of Café in each district

25]:

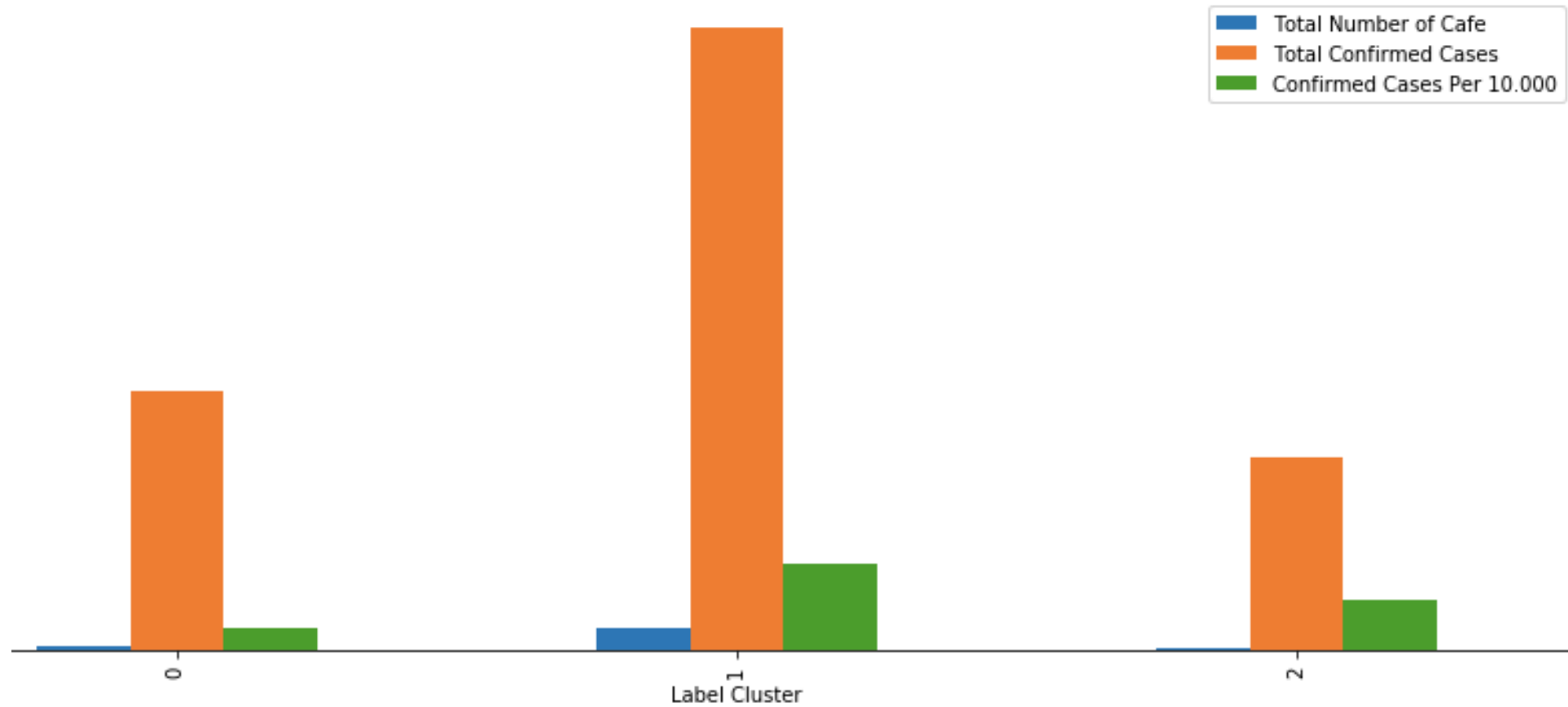
	Districts	Total Number of Cafe	Confirmed Cases Per 10.000	Latitude	Longitude	Total Confirmed Cas
0	Alvsjo	5	110	59.277860	18.008880	3
1	Bromma	7	93	59.338889	17.938889	7
2	Enskede-Arsta-Vantor	3	115	59.281755	18.051066	11
3	Farsta	9	115	59.240278	18.097222	6
4	Hagersten-Liljeholmen	17	93	59.303268	18.005921	8
5	Hasselby-Vallingby	2	97	59.379777	17.830623	7
6	Kungsholmen	50	103	59.333016	18.033094	7
7	Norrmalm	50	110	59.336997	18.056697	8
8	Ostermalm	50	90	59.336701	18.088621	7
9	Rinkeby-Kista	28	142	59.405409	17.945848	7
10	Skarholmen	5	140	59.275407	17.902173	5
11	Skarpnack	8	113	59.268037	18.128015	5
12	Sodermalm	50	101	59.312879	18.069671	13
13	Spanga-Tensta	2	121	59.381009	17.899786	4

Correlation Analysis

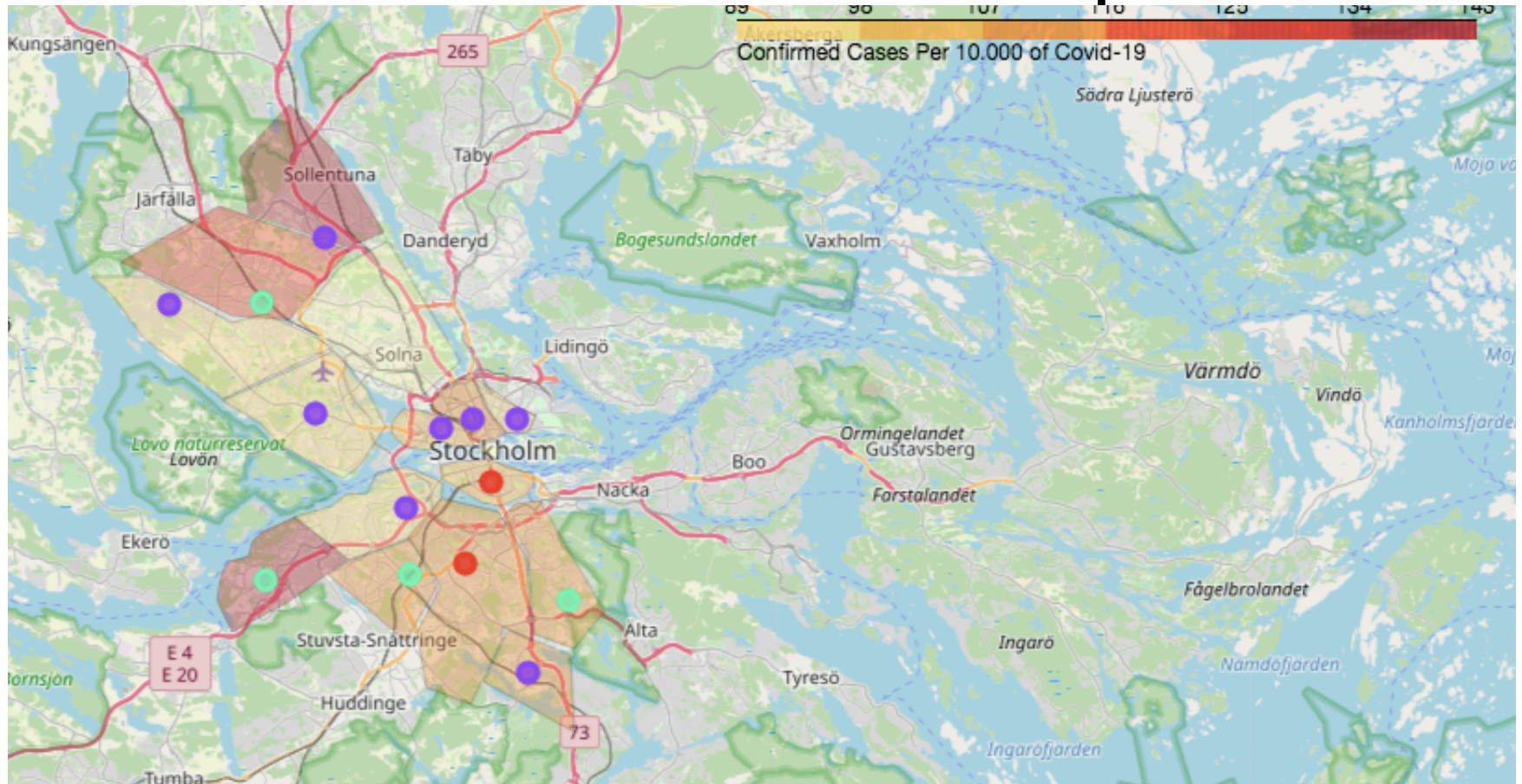




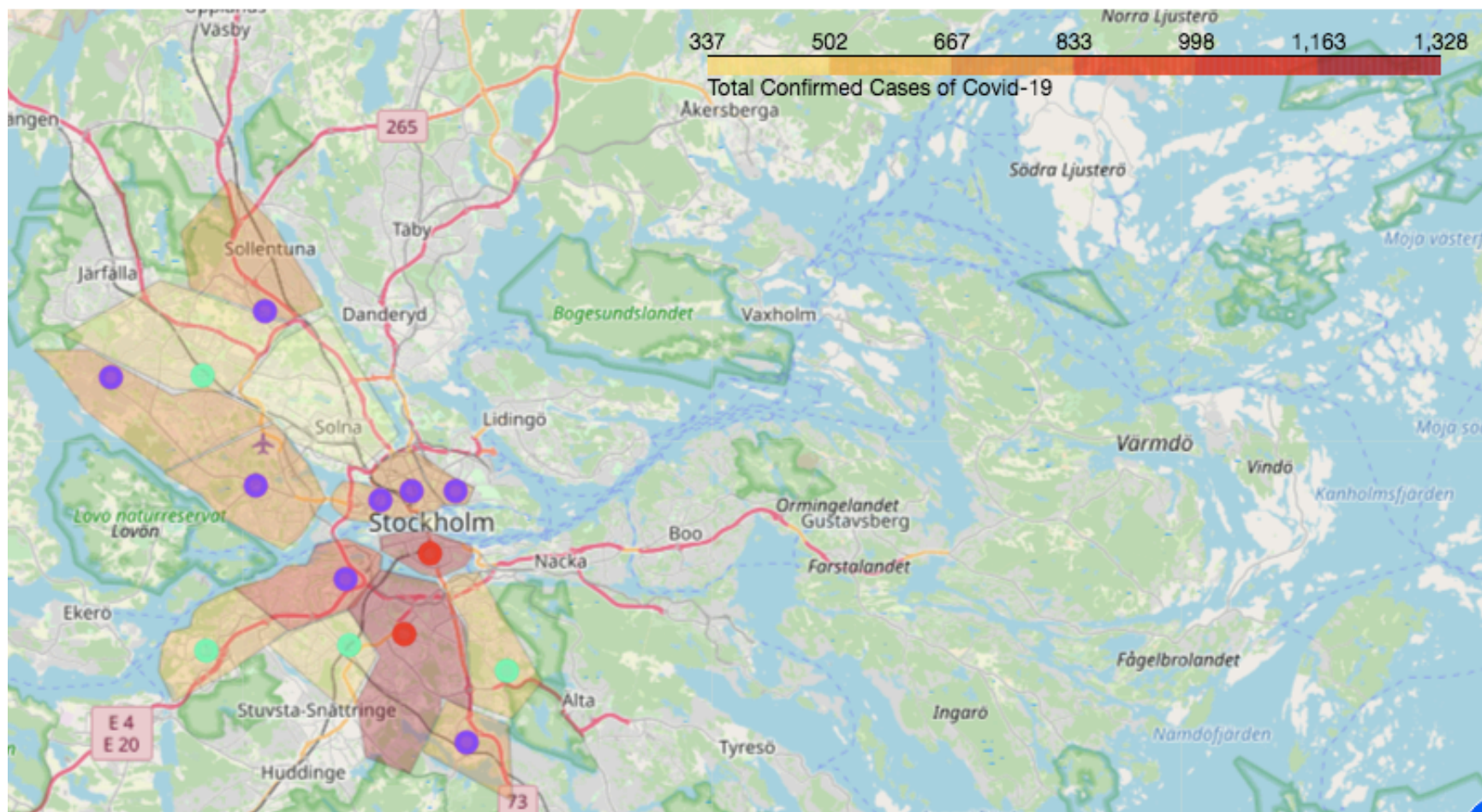
Clustering – K-means



Final Maps – Covid-19 cases and Number of Café shops



Red = High Number of Café shops
Purple = Medium number of Café shops
Green = Low number of Cafe shops



Conclusion

- The Swedish government made a good choice by remaining café shops open as there is no proof of correlation between number of café shops open and the number of covid-19 cases.