Coronavirus pandemic in Berlin: When should the lockdown end?

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1. Introduction

1.1 Background

Until today almost three million coronavirus cases confirmed in 185 countries, with more than 205,000 deaths, according to data compiled by Johns Hopkins University. The virus was first detected in the city of Wuhan, China, in late 2019. COVID-19 is the name given to the disease associated with the virus. The US has by far the largest number of cases, with more than 900,000 confirmed infections. In Europe, the counties with the most confirmed infections are Spain, Italy, France, Germany and the UK. But fortunately, we in Germany, have less than the half of the recorded death in Spain, Italy, France and the UK (all recorded more than 20,000 deaths).

1.2 Problem

The coronavirus is spreading rapidly in many countries and the number of deaths is still climbing, also in Berlin. Berlin is the capital and largest city of Germany by both area (892 square kilometers) and population (around 3.6 million). Lockdowns have been essential for containing the spread of coronavirus, but they have huge negative effect on the economy and the population well-being. Where, when and which restrictions to lift, are big decisions for governments to make.

This project could contribute to the decision-making process. I will analyze if there is a relationship between population density in the different boroughs in Berlin and confirmed infections. I will also use location data to show if boroughs with the hottest places (i.e. many people in an area) have the highest confirmed coronavirus cases.

2. Data Description

I used the official website of Berlin to get the actual confirmed coronavirus cases in the different boroughs and for the Berlin boroughs data (including Density per km²), a Wikipedia page exists that has all the information I needed. I just needed to use the pandas.read_html function to read the data into a pandas dataframe. After some wrangling and cleaning, the data was in a structured format.

For creating Choropleth maps, I needed a geojson file. After a Google search, I found a Berlin boroughs geojson file on GitHub. For the location data, I used the Foursquare API to get the recommended venues and top picks in Berlin. The location data was used to create markers in the maps.