

The Battle of Neighborhoods – Hospitals & Covid19 in Rio de Janeiro, Brazil - Report

1. Introduction

1.1. Background

The current global pandemic caused by the Covid-19 virus has changed the way our world works. New challenges arise as mankind tries to understand and deal with this virus that has caused the loss of so many lives worldwide. The high contagion rate of this virus created chaos in most countries, as they tried to slow it down. One of the biggest issues that such an elevated infection rate causes is related to resources allocation. Most, if not all countries, do not have a medical infrastructure readily available for such an event. Thus, it becomes crucial for a country to properly allocate its resources in order to have the most efficient counter measure to this crisis. This major problem becomes even more pressing in underdeveloped countries, where resources are scarcer and healthcare system is less developed.

Brazil, as one of the underdeveloped countries, is currently struggling in the fight against Covid-19, clocking over 100,000 fatalities with one of the highest numbers of confirmed cases. The country also goes through an economic crisis, which shortens the amount of resources that the government can utilize. Lastly, due to a political clash, there is a lack of coordination between federal government and the mayors of part of cities in the country, which increases the difficulty of the situation.

1.2. Business Problem

Our goal is to use the available data to improve the management of the resources dedicated to deal with this pandemic. By knowing the distribution of Covid-19 cases, it is possible to decide where medical resources, such as more testing, hospital beds and workforce, and others, should be allocated to. For this project, we will use the city of Rio de Janeiro as a test case.

1.3. Target Audience

The target audience of this project is both the common people as well as government personnel. For the first, having knowledge of the hotspots of cases in the city can better their awareness of places that should be avoided, while for the second group it can help in strategic choices which can optimize resource management while improving the results in the fight against Covid-19.

2. Data

For this project, two main sources of data were used. The first one is related to the total number of confirmed cases of Covid-19 in the city of Rio de Janeiro and its distribution across the neighborhoods. This was obtained from the website below. It is important to highlight that the information displayed is updated daily, so the actual numbers are always changing. The data used was obtained on 04/08/2020.

<https://experience.arcgis.com/experience/38efc69787a346959c931568bd9e2cc4>

From this website, an excel file was downloaded and later, uploaded into IBM database for treatment. This will be described in the next section.

Lastly, Foursquare database was used to obtain the location of the main hospitals in the city. This will also be discussed in the Methodology section.