

Machine Learning project stage 1

February 2022

1 Introduction

Coronavirus pandemic is currently an ongoing global pandemic which started in 2019. Many countries' government tried to deal with the virus by recommending, mandating or prohibiting behavior changes, while others relied primarily on providing information. Finland also took similar measure as to control the virus spread. As such, the purpose of the report is an attempt to analyze whether the Finland government response level had an impact on the number of new deaths.

2 Problem Formulation

The government response can be measured using the Stringency Index, which is a metric calculated by Oxford Coronavirus Government Response Tracker (OxCGRT) project [1]. This metric is calculated with a combined measure of nine response metric, which are: school closures; workplace closures; cancellation of public events; restrictions on public gatherings; closures of public transport; stay-at-home requirements; public information campaigns; restrictions on internal movements; and international travel controls [1]. The index per day is an average of the nine metric and ranges from 0 to 100 where 100 is the strictest response. Daily covid cases and deaths by date reported to WHO were downloaded from WHO website [2]. The covid data were used alongside the Stringency Index data.

The data required some pre-processing, Finland data was extracted from the global Stringency Index and covid data at first. The Stringency index data was available later compared to the covid data so, the covid data had to be filtered based on the start and end date of Stringency Index data. Then Stringency index data was combined with covid data and also some data columns were removed. The date reported was converted to number

day counted from the beginning of available data. This was done since regression methods cannot be applied with date time. Then the data points are day, Stringency index, new cases and new deaths.

2.1 Summary of the problem

The features of the problem are day, Stringency index and new cases. The label is to predict the number of new deaths.

3 Reference

- [1] <https://ourworldindata.org/covid-stringency-index>
- [2] <https://covid19.who.int/info>