

Measured NO2 and Corona

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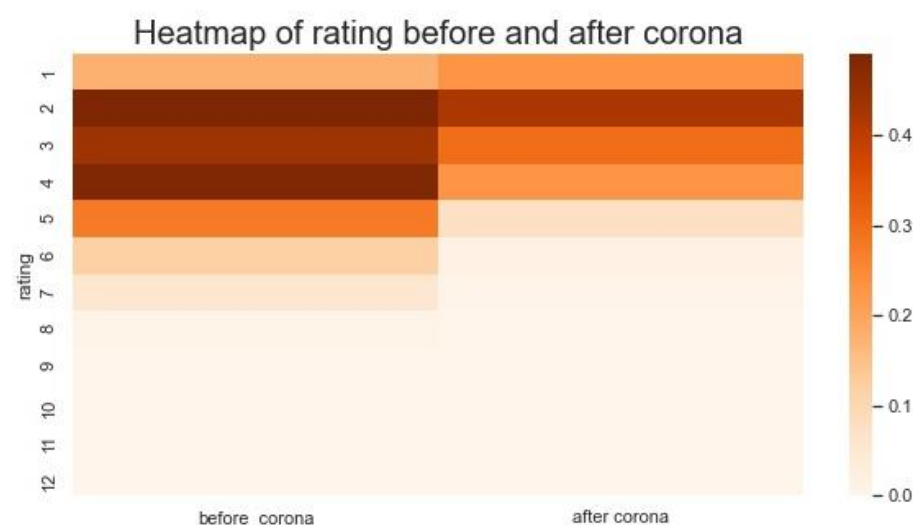
Introduction

NO₂, widely known as nitrogen in the news, is a well-known Dutch problem nowadays. It caused a construction stop, as well as farms being closed. Could less traffic influence this? In this poster, the effect of covid in a particular measuring station, NL10240, on the concentration of NO₂ will be investigated. The covid measures influenced the amount of traffic movements on the road, which could've affected the measuring station that is next to the A27.

Methods

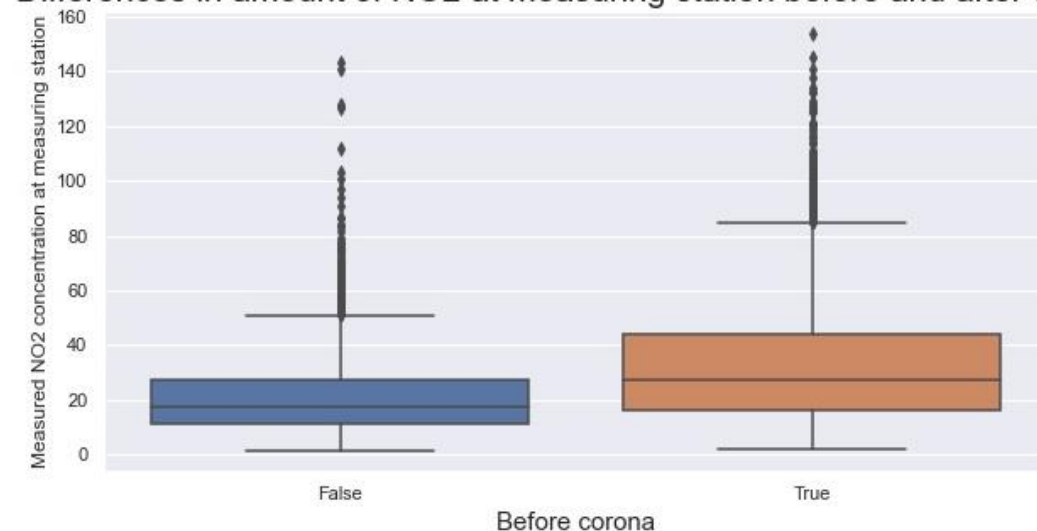
To look at how the concentration of NO₂ might've changed during corona, first a heatmap is made, to compare the rating of the concentrations before and after corona, to look at a first possible connection. Then a line plot is made, with filtered data and averaged over each 28 days, to get a clearer insight in how NO₂ changes month by month and year to year. A boxplot is made, comparing the amount of traffic before and after covid in rush hours, to look at the effects of covid in the busiest moments on the road. Lastly, a hypothesis test is done to look if the change with covid is within margin of error.

Results



The ratings of NO₂ seem to be lower during covid

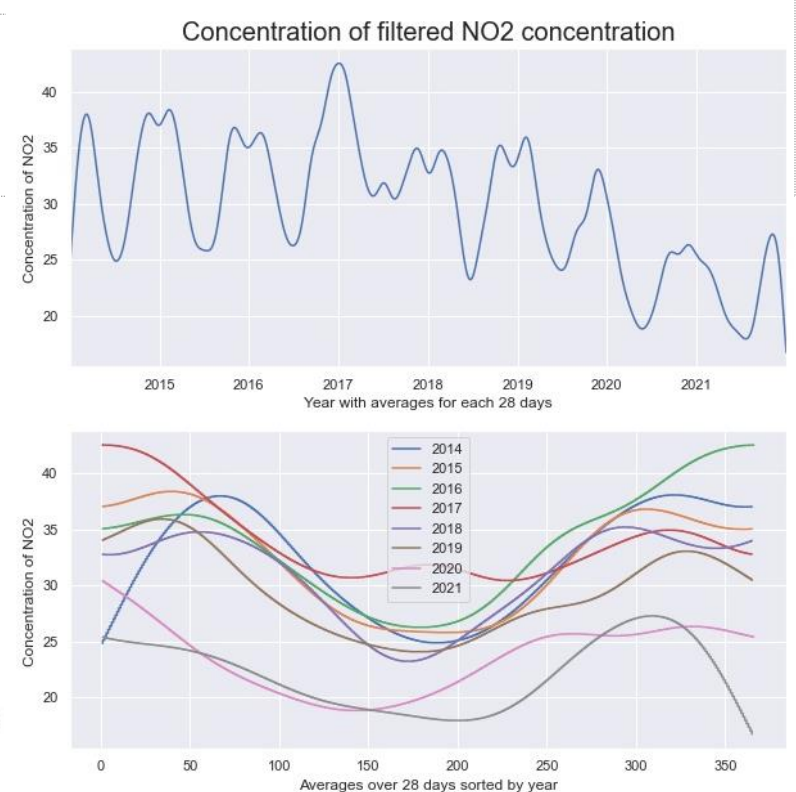
Differences in amount of NO₂ at measuring station before and after corona



There seems to be notably less traffic during rush hours in covid times

Discussion

The graphs and hypothesis test do all seem to point in the same direction, while using filtered or non-filtered and condensed data. This congruency shows that filtering the data in different ways doesn't completely change the outcome. The data in the line graph might've been too condensed to not be accurate enough anymore. Per week would give more accurate data at the cost of visibility.



The concentration of NO₂ is lower during every part of the year

The hypothesis test had an outcome

of $2.7924736927400316e-101$, Which means the NO₂ concentration was basically always lower during covid compared to other years

Conclusion

The concentration of NO₂ seems to have almost definitely lowered during covid, as seen in the graphs and hypothesis test. Looking at the boxplot of the data during just rush hours, cars seemed to have an impact on the concentration, since during these hours it is clearly way less during covid, and the traffic station is next to a highway.