

Impact of Covid on Cyclists and Pedestrians in Zurich

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Introduction

Covid19 had a huge impact on our society. It changed the way we interact on a professional and social level. Home offices, lockdowns, and partially closed stores have had a particularly severe impact on urban centers.

In this paper, we will examine the impact of the pandemic on the number of pedestrians and bicycles in different areas of Zurich.

The city of Zurich automatically collects data on pedestrians and bicyclists through counting loops installed in the ground in different areas of the city. We can get a clear view of the impact of Covid19 on our daily lives by looking at the data of pedestrians and cyclists in 2020 and comparing it to the previous year.

Data

All the data regarding Zurich are pulled from the official website of the city of Zurich *Open Data Stadt Zürich*. The following information are used in this paper:

- Number of pedestrians and bicycles counted in 2020 and 2019
- The location of the counting stations.
- The different *Stadtkreise* and their geodata points.
- The different districts in Zurich with the corresponding geo data points.
- A categorization of different areas based on their usage and building development.

The Covid19 data for Switzerland including the categories *cases*, *deaths*, *test*, *hospitalization*, and *vaccinations* are based on the research of Roser et al. (2020) and pulled from the *Our World in Data* website. In this paper, we will use the smoothed numbers of newly infected people in Switzerland. We decided to use the smoothed numbers since the newly reported cases are directly linked to the working week of medical staff, laboratories, and the Federal Office of Public Health Switzerland (FOPH). As a result, often fewer cases are reported on the weekend and more cases are listed in the beginning of the working week.

Due to the smoothing of the data, the first recorded Covid19 case in our dataset is from 01.03.2020, while the first recorded case actually appeared on the 25.02.2020.

Preparation

In the initial dataset summarizes the counted pedestrians and cyclists into time frames of 15 minutes. Due to our interest into daily, weekly and monthly changes, we bring the counting data into needed format. Additionally, several adjustment to the data are made for a simpler comparison. The counting stations indicate whether an individual is going into or going out of a center. Since we are interested in the total number of individuals walking or cycling in the area, we summarize them into one number each:

- Total cyclists
- Total Pedestrians

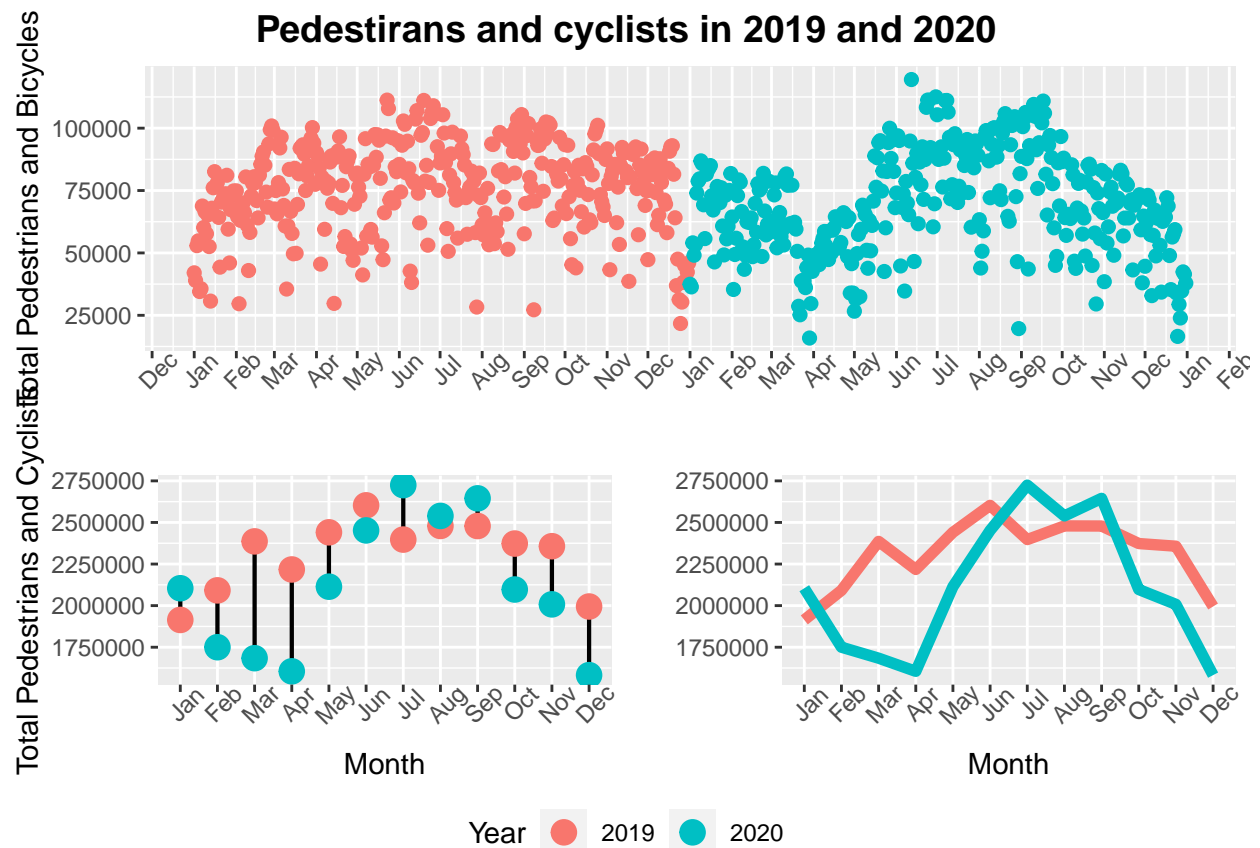
Furthermore, we also summarize those two numbers into one single number containing all the measured pedestrians and cyclists at each location:

- Total People

In a second step, we join the smoothed Covid data to our daily records of cyclists and pedestrians. Before 01.03.2020 there are no Covid cases.

Based on the information of the Swiss Tourism Federation (2021) we additionally the two lockdowns in 2020. The first lockdown from March 16th 2020 until Mai 11th 2020. The second lockdown starting in 22nd December 2020 and ongoing in the next year.

Visualization



Conclusion

It would be interesting to quantify the impact of the two lockdown on the number of pedestrians and cyclists statistically. For this we a longer time series than just two years.