If the air quality record during the Covid-19 lockdown simulates the city's air quality once it is fully transformed to EVs. (part A)

Firstly to explore the impact of changes in transportation modes during the lockdown on key air pollution

As can be seen from Figure 1, when the data for the lockdown period is taken and averaged at a frequency of once every 15 days, the changes in NOx and the changes in traffic patterns are very similar, falling and rising at the same time almost concurrently.

Therefore, we can further assume that there is a high correlation between them. Thus in the second figure, a plot of the relationship between the data for the main air pollutants and the data for the change in transportation patterns during the non-lockdown and the lockdown periods is calculated and shows that the relationship between the two is very loose when the policy is relaxed, with data of only about 0.2. However, when the policy is implemented, the relationship between the two is as high as 0.9.

So it can appear that applying a similar policy to keep the rate of change in traffic patterns stable in a particular interval can improve air quality.

Therefore, a further study was done in Tableau. we can observe that the pollution figure is highest around Colston Avenue. Therefore, the money charged for petrol cars around Colston Avenue could be increased to limit travel. Also on the top right hand graph, a polynomial regression with a degree of 2 is used to represent the relationship between NOx and the rate of change in traffic. It can be observed that the decreasing trend is most significant when the rate of change in transport is maintained at around 60%. Therefore, a similar policy can be proposed, where maintaining the rate of change at around 60% can rapidly reduce air pollution, while the policy needs to be dynamically adjusted according to the index of NOx.