The University of Manchester

A step-change in quantitative social science skills

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Opsmorph: Informing COVID-19 Recovery Policy with Data Driven Insights

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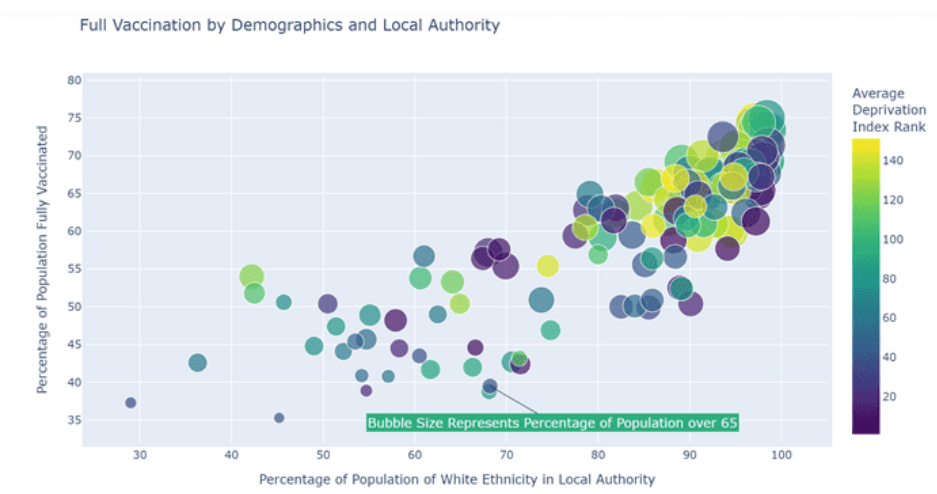
Overview

During my internship I worked with the tech company Opsmorph to analyse social and economic trends that are key in informing effective COVID-19 recovery policy. I began my research by investigating the priorities of local governments in their recovery policy for the pandemic, identifying areas for further analysis. My analysis was focussed on three key areas that we believe to be of high significance for COVID-19 recovery, identifying trends of vaccination rates, furlough and unemployment rates and changes to transport usage. I published these results in a series of blog posts on the Opsmorph company website

Data Analysis

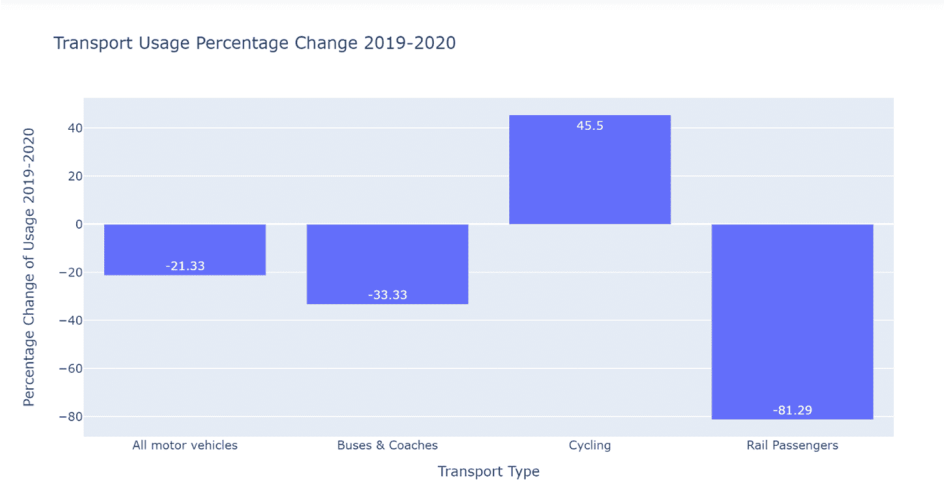
I used Python to conduct my data analysis, using the Pandas packages to manage large sets of data from CSV files, visualising such data with Plotly and Ipyleaflet packages. I used data from a range of sources, including from Government APIs and using the NOMIS packages in Python, giving me an improved understanding of how and where to access data. I produced a range of graphs and maps that represent the key trends identified to be relevant for COVID-19 recovery policy and accompanied these with a written analysis in a series of blog posts.



Vaccination rates by demographics. Second dose data as of 21/07/2021. Bubble size indicates percentage of population over 65 (larger indicates greater percentage). Bubble colour indicates deprivation (blue colours are more deprived, yellow colours are less).

Findings

- At the time of conducting my research, 93.7% of over 50s who are white had received their first vaccination dose, compared to 66.8% of Black Caribbean's in the same age category.



Percentage change of transport usage between 2019 and 2020 by transport type.

- A correlation exists between vaccine uptake and age, deprivation and ethnic diversity in a local authority, epitomised by the example of the London borough of Newham which had among the lowest vaccination rates and an ethnically diverse, relatively young, highly deprived population.
- Furlough rates were highest among the Arts, Entertainment and Recreations sectors, and the Accommodation and Food Services sector which saw rates of 40% and 44% respectively.
- Between 2019 and 2020 there was a drop of 81.29% of rail passengers, showing that the rail industry was hit hard by the pandemic. There was also a 45.5% increase in cycling, in a shift toward active travel that local governments are increasingly interested in maintaining.

Key Skills Learnt

My internship enabled me to develop my communication skills, with daily meetings with my boss to develop ideas for research and solve any issues I encounter with coding. Through these I learnt to effectively communicate my ideas and research findings in order to progress our project. These meetings also enabled me to develop my collaborative skills when coming up with new ideas to research. As for time management, we used JIRA to keep us on track and plan out my research each week. Using this software was useful to improve my time management skills, allowing me to track my progress and ensure I was on top of the tasks for each week. My creative skills have been enhanced by learning new visualisation techniques for data, with these I am able to present data in interesting ways that effectively communicate insights from the data. These new skills have allowed me to present my research in persuasive ways.

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