

Using Big Data for COVID-19 response



GWG Big Data Conference

31 August 2020

Frankie Kay

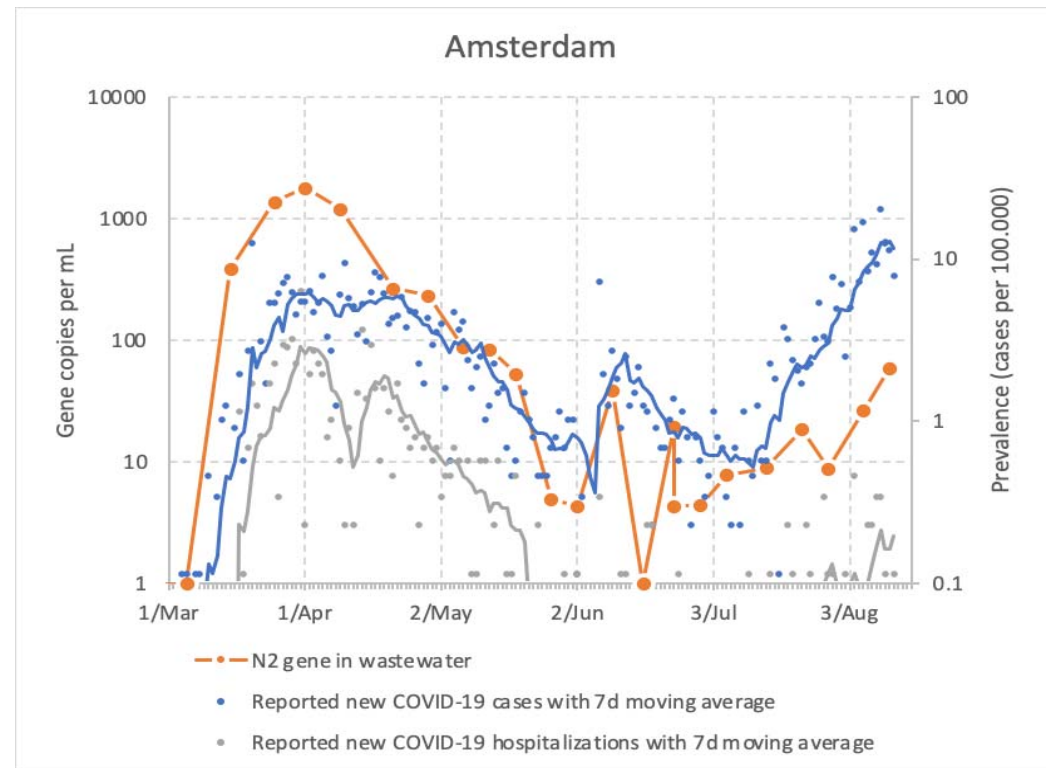
Interim Deputy National Statistician and Director General for Data Capability

Identifying Covid-19 hotspots for the UK's Joint Biosecurity Center

Build a secure environment	Google Cloud Platform Partitioned: secure / share with approved users
Assess novel data sources	•Risks: population, mobility, employment etc Predictive: wastewater, pharmaceutical products, Zoe app – symptom self-reporting
Build and test predictive models	Anomaly detection Machine learning
Share learning	Automated daily dashboards Publish reports and code

Monitoring sewage water

- Covid-19 can be found in fecal matter in waste water
- Can this be used as a non-intrusive method to assess prevalence in populations?
- The Campus is exploring how well it performs as an indicator of outbreaks



Source: KWR Water, NL

Google Places

Converting PDF reports to inform the UK government response to COVID-19 by providing insight into mobility patterns.

Google released [Community Mobility Reports](#) for 131 countries as individual PDF reports.

Within 48hrs the Campus [published a pipeline](#) to convert the reports from pdf to csv

ONS's geospatial and data visualisation teams produced bespoke geographic tools to analyse and map outputs.

Informed the Government's rapid response to Covid.

Retail & recreation

-84% compared to baseline



Grocery & pharmacy

-36% compared to baseline



Parks

-34% compared to baseline



Transit stations

-77% compared to baseline



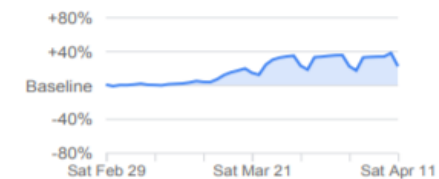
Workplace

-64% compared to baseline



Residential

+23% compared to baseline



Analysing COVID-19 notices from business websites

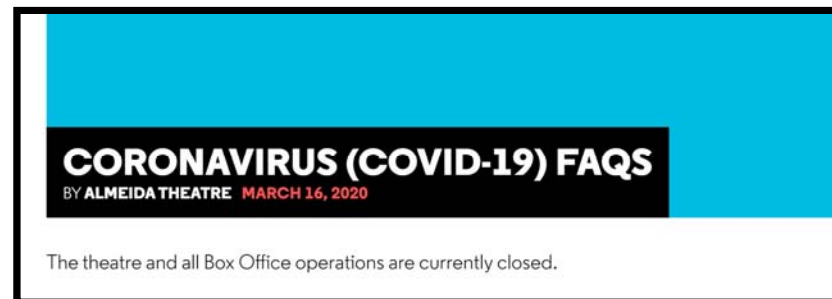
Using data extracted from business websites to inform business survey decision making and response chasing efforts.

Text extracted from 500,000 business websites by private sector partner glass.ai, subsequently linked to the Inter-Departmental Business Register.

COVID-19 notices identified by keywords (e.g. "coronavirus", "government advice", "social distancing").

An analysis of the proportion of businesses using their websites for COVID-19 communications was carried out by sector and size band.

Natural language processing techniques were used to classify snippets according to the response of the business.



<https://almeida.co.uk/> © Almeida Theatre, London N1 1TA Registered Charity No. 282167

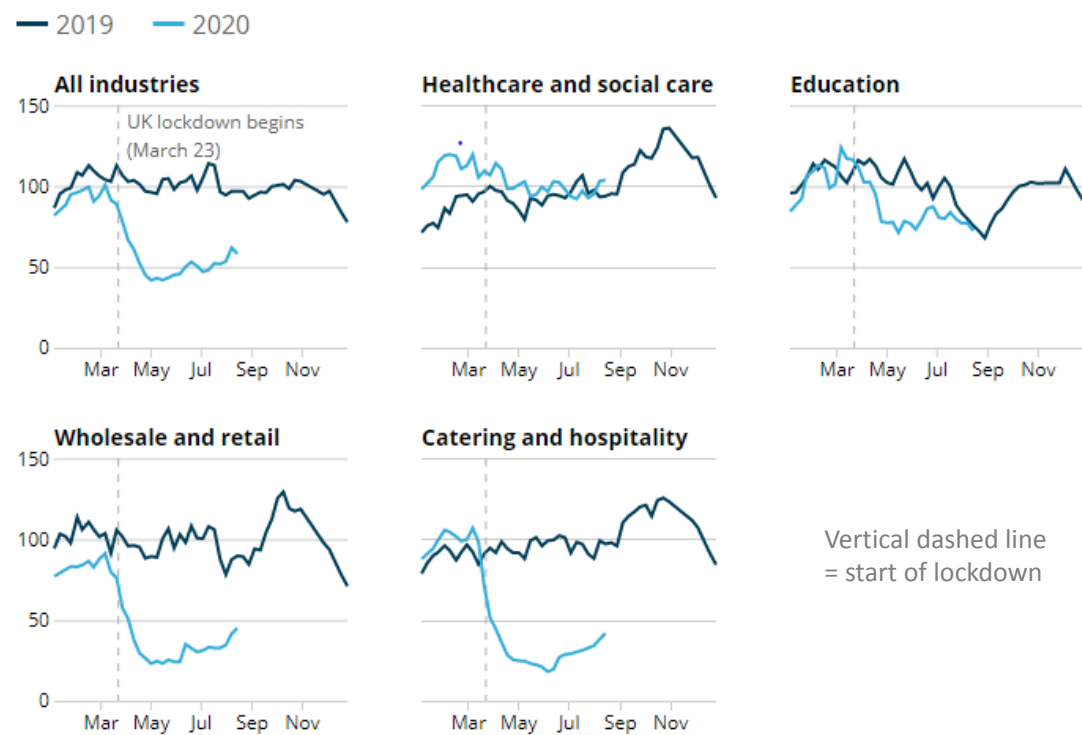


<https://www.madametussauds.com/london/> © Merlin Entertainment Group 2018, all rights reserved. © & TM Lucasfilm Ltd.

Using Adzuna data to derive an indicator of weekly vacancies

- [Adzuna](#) is a comprehensive online job search engine that collates information from thousands of different sources in the UK.
- > 100 million job adverts in the time series to date from February 2018.
- Broken down by job category and by region, based on the information included in the job advert.
- Adzuna's neural network assigns suitable categories to the job adverts based on each advert's text.

Total weekly job adverts on Adzuna, UK, 4 January 2019 to 14 August 2020, index 2019 average = 100



[Faster indicators publication](#)