Title: Analysis of correlation between EOHO and COVID

Date: 9th December 2020

Headlines:

This report describes an analysis of correlation between take-up of the Eat Out to Help Out (EOHO) scheme and new cases of COVID-19 recorded during September and October 2020.

Currently, we find little evidence to support the claim that the EOHO scheme directly led to an increase in COVID-19 cases, on a UK-wide level. Generally, correlations are either weak or not statistically-significant. Subsequently, there are local authorities with very high EOHO take-up and relatively low levels of new COVID cases, as well as local authorities with high levels of new COVID cases and low take-up of the EOHO scheme.

Some significant correlations between EOHO and COVID data are found, mostly in Wales, where increased take-up of the scheme is found in areas where the number of cases is low. However, significant correlation can also be found when comparing EOHO data to the number of cases at the peak of the "first wave" in early April, which suggests that any significant correlations should be interpreted with caution.

Limitations:

This analysis has only investigated correlation and does not have the power to reveal whether or not any causal relationship exists, nor can this analysis reveal whether or not any unseen factors are responsible for driving the change in these two variables.

As testing increases, so too does the number of cases reported to be positive, including false positives. Greater insight could be obtained by controlling for the number of tests in each area. This data is available at the geographic level of NHS regions and would need to be merged with the EOHO dataset before any further analysis.

Details:

1. EOHO data for businesses with 25 or fewer outlets has been collated into local authorities using the postcode of the participating restaurant.
2. The raw quantities measured were the number of participating outlets, the number of meals claimed for and the total value of the discount claimed.
3. For each area, we calculated "meals claimed per head of population".
4. We investigated the relationship between this measures and the occurrence of new COVID-19 cases in the two-month period immediately following the end of the EOHO scheme.
5. COVID-19 statistics were obtained from the gov.uk dashboard (at https://coronavirus.data.gov.uk/).
6. For the analysis in this report the following requests were made.
    - Region type: lower-tier local authorities
    - Time span: Full archive (year-to-date as of 02/12/20)
    - Variables: "newCasesBySpecimenDate"
7. Typically, a period of time (possibly a number of weeks) would have to pass between exposure to a sufficiently high dosage of the SARS-CoV-2 virus and the onset of COVID-19 symptoms, which may then be followed by the production of a positive test case after a further period of time. To mitigate this delay we use the variable "new cases by specimen date", which is the date on which the specimen was obtained, rather than the later date on which the positive test was published.