

Travel to work quality information for Census 2021

Known quality information affecting travel to work data from Census 2021 in England and Wales to help users correctly interpret the statistics.

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1 . Main points

- The Office for National Statistics (ONS) collected Census 2021 responses during the coronavirus (COVID-19) pandemic, a period of unparalleled and rapid change; the national lockdown, associated guidance and furlough measures will have affected the travel to work topic.
- We provided extra guidance to respondents affected by the pandemic on how to respond to travel to work questions, but it is not clear how this guidance was followed.
- There was an increase in home working from 10.3% in 2011 to 31.2% in 2021, but the government advised people to stay at home and only attend work if you had no alternative; there are also several other aspects to consider when interpreting results for this topic.
- As designed, we did not collect any workplace address information for those working at home, including those following government guidance to do so.
- Large numbers of people were still being supported by government furlough schemes, and it is not clear how the question guidance provided was followed; some people may have provided travel information for the last time they worked, or they may have answered based on their behaviours on Census Day.
- Restrictions on travel ended later in 2021, and while there will have been a shift back towards some behaviours from before COVID-19, hybrid and home working remain commonplace.
- We are researching the potential of using alternative data sources and modelling methods to produce travel to work statistics on a more frequent and timely basis, including workday populations and hybrid working patterns.

Tell us what you think about this publication by [answering a few questions](#).

2 . About the travel to work topic

Census 2021 in England and Wales collected information about the resident population's places of work, their workplace addresses and their method of transport to the workplace. At the Office for National Statistics (ONS), we use this information together with people's address data to estimate a distance travelled to work variable.

Policymakers and planners use these data to understand the flows of people around the country to their workplaces. This informs:

- planning of public transport
- understanding of how people with different characteristics access the job market
- planning about how net zero and levelling-up targets can be achieved

The data also underlie Travel to Work Areas and Workplace Zones, which are geographies that represent principally self-contained areas of the country where the population live and work.

Travel to work data are closely connected to labour market data. Read about [labour market quality information for Census 2021](#).

3 . Coronavirus (COVID-19) pandemic context

Census 2021 was conducted during a time of unparalleled change because of the coronavirus pandemic. On Census Day, 21 March 2021:

- a nationwide lockdown was still in place, with government guidance requiring people to work from home wherever possible
- those key workers who were working outside of their homes were encouraged to avoid public transport where possible to reduce transmission
- non-essential retail and businesses were closed
- up to 5.6 million people in England and Wales were supported by a national job support scheme known as furlough
- households were not able to meet with others outside of their bubble
- the roadmap for moving out of lockdown had just been released, with children and students beginning to return to educational establishments
- the [Coronavirus Infection Survey \(CIS\)](#) estimated up to 170,000 people were infected with COVID-19 in England and Wales
- approximately 7% of the population of Great Britain (3 million people) were self-isolating with symptoms consistent with COVID-19

Travel data were expected to be substantially different from past censuses because of the pandemic, with changes in travel mode and increased home working. Behavioural change would vary across geographies, industries and personal characteristics, and responses from people on furlough would add further complexity to the data. Data collected would be a snapshot in time, but with limited utility in measuring pre- or post-pandemic travel patterns.

4 . Coronavirus (COVID-19 pandemic impacts on the quality of travel to work data

As Census 2021 was taken in a period of rapid change, there is uncertainty as to how people responded to the travel to work question. At the Office for National Statistics (ONS), we provided supporting documents to give extra guidance on questions. However, our analysis suggests that this guidance may not have been followed in all instances.

We issued specific guidance for the labour market and travel to work questions, as the question routing for labour market directly influences the travel to work topic. For the labour market question (number 33 on the paper questionnaire) that asked “In the last seven days, were you doing any of the following”, people on furlough were guided on-screen to choose “temporarily away from work”. This meant that they would remain within the economically active population because, while not working on Census Day, they remained employed.

All economically active people were then shown the travel to work question “How do you usually travel to work”. On-screen text stated: “answer for the longest part, by distance, of your current journey to work. If the coronavirus pandemic has affected your journey to work, please select the answer that best describes your current circumstances”. The specific guidance document for this question included the instruction: “if you are away from work on furlough, in isolation or in quarantine, answer about how you used to travel to work before your circumstances changed”.

We instructed people to look at the guidance if they were unsure how to respond to any questions. However, we cannot be sure how the questions for travel to work were interpreted by those on furlough. They may have read the guidance, or they may have felt that they should respond based on their travel behaviour on Census Day, potentially selecting any method of travel that they used or “working from home” if they remained at home. Part of our quality assurance indicated inconsistencies between the “temporarily away from work” group and data from other administrative sources.

So, census travel to work data are a mixture of pandemic and pre-pandemic travel behaviours. The data will also include a substantial number of responses from those who were furloughed, and it is not clear how these furloughed responses were intended.

5 . Coronavirus (COVID-19) pandemic-related behavioural changes in travel to work data

All censuses are carried out during periods of change. However, the pandemic was an unprecedented situation, with rapid shifts in government guidance and legislation over a very short period of time. This will have influenced many people's travel behaviours.

The guidance to work from home where possible will have increased the number of people selecting the "Work from home" box for their place of work and method of transport. The shift from other methods of transport to "working from home" may not represent longer-term trends pre- and post-pandemic. In line with our previously tested question design, people working from home were not asked their workplace address, as this is assumed to be the same as their home address. The increase in the proportion of home workers during the lockdown means that a smaller proportion of the population have provided their "usual" workplace address. This could result in decreases in average distance travelled in some occupations and industries that would ordinarily have longer commutes but now have high levels of home working.

Guidance for furloughed workers requested that they provide their "usual" travel behaviours, so they may have provided workplace type and address. This could lead to increased average distance travelled in industries or occupations with concentrations of people on furlough. For those occupations and industries where there are both furloughed and home workers, these changes may cancel each other out. Distance travelled may also have been affected by behavioural changes for those who were travelling into work – for example, travelling shorter distances to local workplaces rather than city centres. This may correlate with industries that were more likely to commute longer distances, such as workers in the financial sector in London.

Government guidance was to avoid public transport, if possible, to reduce transmission. For those who continued to travel to work, there may have been substantial changes in travel behaviours. For example, someone who regularly took a train into work may have swapped to driving to reduce their risk of contracting COVID-19. This may also be correlated with other characteristics, including:

- age
- health
- industry
- occupation

We do not have information on the "business as usual" behaviours of these people, so we are unable to reconstruct their pre-pandemic travel patterns. As this guidance is no longer in effect, it is also unclear how representative the method of travel information is for the present day with the rise of hybrid working.

6 . Using the data

Take care not to overinterpret the data from the travel to work topic. We are unsure whether people on furlough followed guidance as intended. Because of this and complications resulting from some inconsistency in the guidance, it is unclear how representative the method of travel, distance travelled, and derived variables are of Census Day.

This is further complicated by the substantial shifts in behaviour because of the coronavirus (COVID-19) pandemic. This makes it difficult to know whether patterns detected are concentrations of:

- furloughed populations
- pandemic-related changes in behaviour
- longer-term trends

The issue is likely to be concentrated in populations with high rates of furlough. We expect this to be closely connected with characteristics variables such as:

- health and age
- employment variables including industry and occupation
- geographical concentrations of these variables

For this reason, take extra care when interpreting multivariate travel data or data for geographies below “Region”.

Census 2021 travel to work data use the 2001 travel to work specification, which is a method consistent with variables from the 2001 and 2011 Censuses. Compared with the 2011 specification, Census 2021 data do not include figures for people who work from home but use other transport for their employment. As a result, home-working figures may be higher than the 2011 variable because of definitional differences.

7 . Processing furlough responses

At the Office for National Statistics (ONS), we published extra guidance to help people on furlough to answer the census questions about work and travel to work. This guidance said that they should identify themselves as “temporarily away from work”. This would ensure they were still included in the economically active population. It would also provide travel to work information for the last time that they went to work before their behaviours changed.

We are unable to determine how furloughed people followed guidance. However, our research suggests that there are inconsistencies between the number of people answering “Temporarily away from work” in Census 2021 and the equivalent in other administrative data sources. This may result in scattering of furloughed responses through other labour market categories. Our [An overview of workers who were furloughed in the UK: October 2021](#) article suggests that furlough is associated with other characteristics, including:

- age
- health
- location
- industry
- occupation

It is possible that the interaction of furloughed responses with technical aspects of census processing, such as edit and imputation, could increase values in the observed census data. There is no specific flag for furloughed people within the data, and we are unable to quantify the effect that they may have had on the travel data. Neither are we able to make any adjustment. We recommend caution when using the travel to work data, as multivariate and small geographies are more likely to contain concentrations of this effect.

Travel to work data also underlie the Travel to Work Area geographies, which are used in economic analysis to understand access to jobs and the labour market. These geographies may be less representative of where people are living and working. At the moment, we advise users to continue to make use of the 2011 Travel to Work Areas for analytical and statistical work, and we will continue to update users on future developments.

8 . Future plans

We recognise that travel to work data, including origin-destination matrices, and method and distance of travel, are used by a wide range of stakeholders. They use these data sources to understand travel behaviours, plan service provision, and as the basis for economic geographies such as Travel to Work areas.

At the Office for National Statistics (ONS), we are researching the use of alternative administrative data sources and survey data combined with modelling approaches to produce more frequent and timely measures of travel to work statistics. This may also provide the opportunity to measure:

- hybrid working
- workday populations
- non-work-related travel behaviours
- travel outside of standard working hours
- seasonal changes

We are investigating potential alternative sources of these data as part of our ambitious Census and Data Collection Transformation Programme. There will be a user consultation in 2023 about the future transformed system for population and social statistics. We will be publishing further information on our plans in the near future.

9 . Related links

[Labour market quality information for Census 2021](#)

Methodology | Released 8 December 2022

Known quality information affecting labour market data from Census 2021 in England and Wales to help users correctly interpret the statistics.

[Quality and methodology information \(QMI\) for Census 2021](#)

QMI | Last revised 28 November

Details the data strengths, limitations, uses, users and methods used for Census 2021, England and Wales.

[How we assured the quality of Census 2021 estimates](#)

Methodology | Last revised 7 November 2022

Methodology for the validation of Census 2021 population estimates for England and Wales, including the assurance of processes, assessment of estimates, and involvement of local authorities.

[Travel to work variables Census 2021](#)

Supporting information | Released 5 December 2022

Lists variables and classifications used in Census 2021 data about travel to work.

[Labour market variables Census 2021](#)

Supporting information | Released 5 December 2022

Lists variables and classifications used in Census 2021 data about the labour market.

10 . Cite this methodology

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