Labour Force Survey changes and its impact on the engineering footprint methodology

Changes to the Labour Force Survey

The Labour Force Survey (LFS) is a household survey, which is the basis for producing estimates of employment, unemployment, and economic inactivity in the UK[1]. The LFS is intended to be representative of the whole UK population. Given that respondents represent only a sample of that population, responses are weighted so that, for example, responses from groups with a lower-than-average response rate will be given more 'weight' and are scaled up to the proportion of that group's presence in the overall population.

Typically, the Office for National Statistics (ONS) reweight the LFS every 2 years to reflect updated population estimates and projections, incorporating any changes to the level and composition of the UK population. The most recent weighting exercise took place in late 2023/early 2024, with results of that reweighting published in February 2024.

The Covid-19 pandemic led to significant changes to the LFS methodology as the survey could no longer be conducted in a face-to-face environment. This led to changes in response rates and the make-up of who responds to the LFS, which in turn has had implications for how the LFS has been weighted in recent years. Response rates have fallen from around 40% pre-pandemic, to around 15% in 2023. One result of this is that the latest LFS estimates have not been fully aligned with the latest population estimates.

There have also been more recent challenges in falling response numbers to the LFS, which led to increased sampling variability. The LFS is produced quarterly, and each participant is invited to take part in 5 waves of the survey over 5 consecutive quarters. This means that 20% of the sample is replaced each quarter. But the response rate now varies greatly across the 5 waves for each quarter. For example, the overall response rate was 14.8% in October to December 2023 – but this ranged from 34% for wave 1 respondents down to 8.7% for wave 5. The resulting volatility in employment estimates led to the ONS suspending labour market statistics from October 2023 to January 2024 while they implemented improvements and reviewed the weighting approach.

An additional issue stemming from the re-weighting applied recently is that ONS only went back as far as Q3 2022 (July to September). This means we do not have a consistently weighted dataset for 2022 for comparison purposes.

The ONS are currently making several changes to the data collection and weighting/estimates (full details here), including the re-introduction of face-to-face interviews from October 2023.

The LFS is due to change to the Transformed Labour Force Survey (TLFS) in 2024. This transition is in progress. We won't understand the full impact of these changes for the 2024 data until later in 2024/early in 2025, so we will re-visit whether we need to make further changes at this point.

[1] For more about the Labour Force Survey, and the recent reweighting exercise, see here: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/articles/impactofreweightingonlabourforcesurveykeyindicators/2024

Impact on the engineering footprint calculations

Existing methodology

In recent years we have looked at the size and shape of the engineering and technology sector by using the engineering footprint – a list of occupation codes agreed between EngineeringUK, the Royal Academy of Engineering, and the Engineering Council. We have calculated this on an annual basis. Four quarters of LFS data have been collated to create an annual dataset with only waves 1 and 5 of the data used for each quarter (this approach counts every respondent to the survey in a given year only once). This is a standard approach, as using the full calendar year of data (4 quarters) allows for any seasonality within the data to be accounted for, while using just one quarter of data may produce different results depending on which quarter is selected. Each quarter is weighted to be nationally representative when published by the ONS. As we have been selecting 2 out of 5 waves of data, across 4 quarters of weighted data, we have also been re-weighting the data to keep it representative of the whole population.

Issues

In looking to analyse the 2023 data, which have much more variability in response rates across waves and a much lower overall response rate than in the past, we identified discrepancies between overall sample findings and that of the individual quarters. We believe that this is due to the recent issues in the response rate and subsequent weighting necessary to compensate for non-response and low response from certain groups, including very low response rates at wave 5. When we re-run the methodology on 2019 data, the figures are much more similar for the quarterly data vs. the annual data.

New methodology

As a result of the issues identified, for 2023 we have moved to looking at the quarterly data separately, and not combining across selected waves (1 and 5) and re-weighting to get an annual dataset.

Moving to quarterly data comes with its own problems, but it is easier to manage than those with the old methodology. The main issue with quarterly data is seasonality. As a sector, engineering and technology is less impacted in this way than say hospitality (peaks in summer) and retail (peaks around Christmas), but it is still a factor.

The other, more practical, issue with quarterly data is having a new figure each quarter. We are therefore going to continue to calculate an annual figure, using an average from across the 4 quarters. As stated earlier, the ONS only went back as far as Q3 2022 (July to September) in applying the recent re-weightings, so we have used the different available weighting to the 2022 quarters to create one annual 2022 figure, to enable a comparison with 2023.

We will review any necessary further amendments to the methodology once we know more about the 2024 data and the TLFS.