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Improving Public Understanding of Economic Statistics: Presenting Labour Market Statistics to the Public

Claire Cathro, Johnny Runge, Jordan Whitwell-Mak,
Katharine Stockland, Nida Broughton and Jasmin
Rostron

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DISCUSSION PAPER

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Claire Cathro, Johnny Runge, Jordan Whitwell-Mak, Katharine Stockland, Nida Broughton and Jasmine Rostron

ESCoE Discussion Paper No. 2022-26

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Abstract

Previous research has found that the UK public feel economics and economic statistics are communicated in a way that is difficult to understand. Producers of economic statistics primarily write for technical audiences, such as policy makers and economists, and not the general public. This research therefore explores how the Office for National Statistics (ONS) could potentially communicate statistics about the labour market *directly* to the general population, with the aim to improve public comprehension, engagement, and trust.

We developed alternative versions of the ONS *Labour Market Overview*, a summary of the latest labour market statistics released monthly on the ONS website, that were designed to be easier to read and understand for non-technical audiences. We then tested these summaries with the general public through an online randomised controlled trial (RCT) with 3,849 adults from across the UK in January and February 2022. We found that the alternative summaries outperformed the control version on comprehension, engagement and trust. These results show that relatively small changes to how the statistics are presented or discussed can result in improvements in public comprehension of, engagement with, and trust in economic statistics – all critical outcomes for a national statistical agency like the ONS.

Keywords: Communication; trust in statistics; public understanding; economic statistics

JEL classification: D83, D90, C91

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Improving Public Understanding of Economic Statistics

Paper 1: Presenting labour market statistics to the public

Claire Cathro, Johnny Runge, Jordan Whitwell-Mak, Katharine Stockland, Nida Broughton & Jasmin Rostron

Executive Summary

Research goals and methods

Previous research has found that the UK public feel economics and economic statistics are communicated in a way that is “confusing”, “complicated” and “difficult to understand”, (Runge & Hudson, 2020; Ecnmy, 2017). We also know that the UK public want to hear more economic information directly from economic statistics producers who they trust (Morgan & Cant, 2019) and without the usual filters of the media and politicians (Runge & Killick, 2021). This study – carried out as part of the research programme of the Economic Statistics Centre of Excellence (ESCoE) and funded by the Office for National Statistics (ONS) – therefore explores how ONS could potentially communicate statistics about the labour market *directly* to the general population, with the aim to improve public comprehension, engagement, and trust.

One challenge is that few members of the general public are likely to search out information about the labour market on a regular basis and find the ONS website; however, those that do may find that the material there is inaccessible to them. Therefore, this research has focused on creating communications outputs targeted at the general public, rather than specialist audiences, that would live on the ONS website. A further step would be to think about how to increase traffic to the ONS website by the general public, or to find other ways of reaching the public “where they are”. This second subject was not a focus of our research, but we have provided reflections on this as an area for future research.

To achieve the first objective, we developed alternative versions of the *Labour Market Overview*, a summary of the latest labour market statistics released monthly on the ONS website, informed by previous research. These summaries were designed to be parallel and complementary to the existing release and targeted at a different audience; however, some findings from this research can also be applied to improving the existing release.

Through an iterative process, the initial designs were further revised based on feedback from advisors and staff at the ONS and through 28 interviews with members of the public. This resulted in the following five summaries to test against a control, which was an adapted version of the existing *Labour Market Overview*:

- **Simplified** – same structure as the control version, but with simplified text (shorter sentences, less technical language), and simplified concepts and categories
- **Simplified + Structure** – same content as *Simplified*, with additional changes to layout and structure of the summary, breaking up content into topics
- **Methodology** – same content as Simplified + Structure, with the addition of a prominently placed box describing how labour market figures are collected
- **Relatable** – uses infographics instead of graphs and other figures and uses first- and second-person pronouns and examples of how statistics are relevant to daily life
- **Personas** – uses infographics and case studies about fictional people to present main statistics, explaining how they were categorised in official statistics

We then tested these summaries with the general public through an online randomised controlled trial (RCT) with 3,849 adults from across the UK in January and February 2022.

Findings

In our online experiment, we found that the alternative summaries outperformed the control version on our three headline outcome measures, comprehension, engagement and trust, with the Simplified + Structure and Methodology summaries performing best.

Four summaries, Simplified + Structure, Methodology, Relatable and Personas, outperformed the control version on overall comprehension, which measured whether participants were able to identify key statistics from the summary they saw, and apply concepts. Self-reported ease of understanding was also highest in these arms. Differences in comprehension are driven by improvements in participants' ability to identify key statistics from the text, rather than answer the applied questions. Participants who saw the Relatable summary answered comprehension questions the fastest, suggesting they more easily understood and found information in that summary compared to others. Interestingly, comprehension was lower among people who reported more engagement with economic news or having previously studied economics. Additionally, the Simplified summary, which simplified language but otherwise was unchanged, performed similarly to the control version on comprehension, suggesting that simplifying language is not enough to improve comprehension, in absence of other changes.

All treatment summaries outperformed the control version on engagement, or whether participants thought the information was interesting or important. Engagement with the materials was higher among those who have studied economics, and/or read economic news more frequently, and those who were older, from London and had higher income. All treatment summaries increased the proportion of people who said they would use the ONS website over the control version.

Additionally, the Simplified + Structure and Methodology summaries outperformed the control version on our trust score. These differences were driven by more people thinking that the statistics were free from political interference, rather than more people thinking that the statistics were accurate. Trust in the statistics was higher among those who are older, have higher income, live in London and engage more frequently with economic news.

Interviews with members of the public corroborated our findings from the online experiment. In general, interview participants found the existing releases technical, jargony and difficult to understand. While there were mixed views, most interview participants thought our summaries were easier to read than the control version, and we saw more engagement with the material. Many participants found the statistics interesting or surprising. Despite this, some members of the public still misunderstood some content in the summaries or were distrustful or disliked certain elements, highlighting the difficulty in creating communications that work for everyone.

These results show that relatively small changes to how the statistics are presented or discussed can result in improvements in public comprehension of, engagement with, and trust in economic statistics – all critical outcomes for a national statistical agency like the ONS. However, the gains are relatively modest and there is still a sizeable portion of the population that scored low on comprehension, engagement and trust. Below, we set out *recommendations* for how to implement the findings from this research, and *areas for future research* about different ideas to test that could have bigger impacts.

Recommendations

Based on the findings of this research, we make several recommendations for how to improve communication of economic statistics – both for the ONS and for others that produce or communicate economic statistics, whether academics, think tanks or media.

Recommendations for improving ONS labour market communications

This research has suggested several ways that the ONS, and other statistical institutes, could better communicate labour market statistics to the general public, as well as some ways that existing publications could be improved to better serve existing primary audiences.

Box 1: Recommendations for the ONS about communicating labour market statistics for the general public

1. Launch a separate, standalone labour market summary aimed at the general public. To make it as effective as possible:

- **Simplify language**, with shorter sentences and less jargon than existing communication tools. This can be tested using Flesch-Kincaid reading grade scores; communications aimed at the public should aim for a reading grade level equivalent to Grade 9 (Year 10) on this score, while existing Labour Market Overviews typically were at College (Higher-education) grade level.
- **Shorten the length of the summary**, compared to existing releases but not indiscriminately, e.g., removing plain language description of terminology that is unlikely to be commonly understood.
- **Include the statistics that people most care about or are most relevant to peoples' daily lives and remove other statistics**; both this research and previous research suggest that people care most about employment, unemployment, inactivity, vacancies and pay; however, ongoing research with the public may be needed to understand changing needs and interests.
- **Include information that corrects commonly held misconceptions**, such as around how data is collected, how many people are working on zero-hours contracts, or who is counted as “unemployed”.
- **Break content up by subjects or topics**, like unemployment, and vacancies, rather than types of content such as text, figures, definitions, to improve ease of reading, and embed definitions and graphs within each section.
- **Use various types of graphs and visualisations** within communications to cater to people with different preferences. Infographics and diagrams, like those used in the Relatability and Personas may help with contextualising headline labour market metrics for unfamiliar audiences. Where graphs are used, add explanations about what they show in the form of arrows, captions or overlaid explanatory boxes to aid comprehension, rather than presenting a graph on its own without context.
- **Consider making additional content like definitions, figures, and graphs only visible to those who want to see it**, e.g., by having definitions pop-up on hover, or a “click to see graph” option which expands the content.

2. Consider making changes to existing labour market communications, including:

- **Simplifying language and making definitions more salient**, to improve comprehension among more technical readers. Our findings here and in the accompanying report about journalists (Stockland et al., 2022) suggest that there are gaps in knowledge among more technical audiences on knowledge about basic statistics; therefore, plain language explanations and salient definitions may benefit existing audiences.

Recommendations for other producers of economic statistics

Many of the recommendations above can be generalised for other organisations and researchers who produce publications or communications about economic statistics publications or communications. The below recommendations outline some ways to improve these communications to aid comprehension, engagement and trust among the general public and other audiences.

Box 2: Recommendations for improving communication to the general public for other producers of economic statistics

- **Reduce the complexity of language used for communications by shortening sentences and replacing economic terms with plain language explanations.** Use measures such as Flesch-Kincaid scores to test readability ahead of publication. As noted above, this could help existing audiences as well as the general public.
- **Keep communications aimed at public to a reasonable length,** but do not shorten indiscriminately, particularly if it means removing plain language description of terminology that is unlikely to be commonly understood.
- **Break-up large blocks of text with paragraph breaks, white space, and other types of content,** e.g., figures and graphs.
- **Use various types of graphs and visualisations** within communications to cater to people with different preferences.
- **Where graphs are used, add explanations about what they show** in the form of arrows, captions or overlaid explanatory boxes to aid comprehension, rather than presenting a graph on its own without context.

Areas for future research

We additionally believe that this research has uncovered a few areas for future research which the ONS and others could explore to shed light on how communication could be further improved and for whom. These highlight the importance of iterating and testing different ways of communicating with the public to understand and implement those that work best.

Box 2: Future research by the ONS and others on public understanding of economic statistics could explore:

- How different summaries work for people with different characteristics, e.g., levels of education, engagement with news, or trust in statistics, to identify the summary that works best for those users currently disengaged or with lowest levels of comprehension. Similarly, how different types of visuals and graphs improve comprehension for different types of users; we hypothesise that the use of infographics and diagrams may particularly help to explain concepts for people with limited numeracy skills.
- The impact of channel, format, or medium of message and the best was for driving greater engagement by the general public with the ONS.
- How to convey uncertainty in estimates to improve public comprehension.
- The impact of providing information for specific regions or demographics, particularly if interactive so that people can look at labour market activity for people like themselves.

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Introduction

Background and aims

Previous research has found that the UK public feel economics and economic statistics are communicated in a way that is “confusing”, “complicated” and “difficult to understand”, written about in a language that feels “alien, abstract, and expert-dominated” (Runge & Hudson, 2020; Ecnmy, 2017). Furthermore, studies have found that people are frustrated that they receive unreliable, untrustworthy, and biased information on the economy through the media, especially by politicians, and that the media presents official economic figures dishonestly and with an ideological agenda (Ecnmy, 2017; NEF, 2018). While this leads some people to simply become disengaged with the economy, most say they are still interested in the economy and wish they understood it better, as they recognise its importance to their daily lives and personal finances (Runge & Hudson, 2020). Generally, previous research has identified a desire among the UK public to hear more economic information directly from economic statistics producers who they trust (Morgan & Cant, 2019) but without the usual filters of the media and politicians (Runge & Killick, 2021).

As such, existing evidence suggests that the UK public would welcome information on economic statistics that is more accessible, relevant, and engaging directly from organisations such as the Office for National Statistics (ONS) – the UK’s national, independent statistics institute. For such information to be useful, it needs to be aimed directly at and written specifically for a non-technical public audience. In particular, the public would like to be able to access economic information that they think is accurate, unbiased, and relevant. For this reason, we chose UK labour market statistics as the focus of this study. It is a good case study as previous research has found that people are interested in those statistics, but at the same time that there are some misperceptions about the figures (Runge & Hudson, 2020).

Currently, most of ONS’ products on labour market statistics are aimed at its primary, more technical audiences such as policymakers, journalists, government departments, and academics (Runge & Killick, 2021). The main output is the monthly *Labour Market Overview* on the ONS website.¹ The UK public does receive this information, but almost only *indirectly* through various intermediaries, especially journalists and the media. A parallel report, published alongside this one by the same authors, will explore the media as an intermediary in communicating ONS labour market statistics (Stockland et al., 2022). It examines how labour market data are reported in the media through a content analysis, and it considers the views and experiences of journalists through interviews.

In contrast, this study – carried out by the Behavioural Insights Team (BIT) and the National Institution of Economic and Social Research (NIESR) as part of the research programme of the Economic Statistics Centre of Excellence (ESCoE) and funded by the ONS – explores how ONS could potentially communicate the latest labour market statistics *directly* to the

¹ ONS Labour Market Overview, UK: February 2022:
<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/uklabourmarket/february2022>

general population, with the aim to improve public comprehension, engagement, and trust. As part of the study, we developed and tested five alternative labour market summaries which could potentially be published as a complement to the existing release. Each of the summaries goes a step further away from the ONS *Labour Market Overview*, including by making the language simpler, changing the structure and format, and by making the statistics more relatable to the public. While not of primary focus, findings from this research may also shed light on how the existing release could be improved to better serve existing audiences.

We recognise that this research does not touch on “demand” for ONS labour market statistics outputs aimed at the general public; much of the public is unlikely to search out information about the labour market on a regular basis and use the ONS website where these labour market summaries would sit. We see improving the accessibility of the material there as a critical first step. A further step would be to think about how to increase traffic to website by the general public, or to find other ways of reaching the public “where they are”. This second subject was not a focus of our research, but we have provided reflections on this as an area for future research.

Methodology

Informed by existing research, we developed five alternative summaries of the Labour Market Overview, to test against a control version. Through an iterative process, these initial designs were then further revised based on feedback from advisors and staff at the ONS and through 28 interviews with members of the public. This process is outlined in **Chapter 1**. The chapter also shows the final summaries, and how they differ on different characteristics, such as length and reading ease.

We then tested the summaries with the general public through a randomised controlled trial (RCT) – sometimes also known as an ‘A/B test’ or simply an ‘experiment’. Using BIT’s online experiment platform, Predictiv, we had 3,849 adults from across the UK, who were randomly allocated to interact with either the control version, our alternative summaries (the “treatments”) or no version at all (the “baseline”) between 21 January and 1 February 2022. This random allocation ensured we generated robust findings on how the different summaries’ designs impact upon people’s understanding, and views. The methodology and the results of the online experiment are described in **Chapter 2**.

We also collected in-depth qualitative data from the UK public, through 28 semi-structured interviews with members of the public as well as open-ended responses to the online experiment. This provides detailed information about people’s reactions to the existing ONS labour market release and the summaries and helps explain the results of the online experiment. The methodology and the results of the interviews are reported in **Chapter 3**.

Chapter 4 brings the insights from the previous two chapters together and discusses our findings.

The **conclusion** provides brief conclusions, and points to recommendations for future research and practices in the area of economic statistics that could help improve public understanding, engagement and trust.

Chapter 1: Alternative labour market communication tools for the general public

1.1. Designing alternative labour market summaries

In this chapter, we explain how we designed the alternative labour market summaries aimed at the general population. This chapter will outline the considerations and choices that we made throughout the design process. The initial drafts were informed by existing research evidence (see Box 3 below for what evidence was included). Through an iterative process, the drafts were then revised, based on feedback from advisors and staff at the ONS, and testing through 28 semi-structured interviews with members of the public. Throughout this process, we considered many aspects of the alternative labour market summaries, such as messenger; format; what labour market concepts to present and how to present them; how to present statistical figures and numbers; the complexity of the language; and the relatability of how the information was presented. Meanwhile, we also had to consider practical aspects so the labour market summaries were designed in a way that would make them feasible to potentially publish on the ONS website in the future, as a parallel and complementary summary to the existing ONS *Labour Market Overview* release.

Box 3: Overview of evidence used

The main sources on public understanding of labour market statistics that we used to inform the design of the alternative summaries include the studies that are part of the current ESCoE research programme and funded by the ONS. This involved research using focus groups and surveys (Runge & Hudson, 2020), workshops with economists and members of the public (Runge & Killick, 2021) and interviews with public participants (Runge, 2021a). Other studies include the ongoing surveys on public confidence in official statistics funded by the UK Statistics Authority (Morgan & Cant, 2019; Butt, Swannell & Pathania, 2022); a recent study involving interviews about the economic impacts of COVID-19 (Runge, 2021b); and ethnographic research on different public understandings of the economy (Killick, 2017). We also used other insights about public understanding of the economy (for instance, Ecnmy, 2017; NEF, 2018) and about communication of economic issues, including previous work on communicating the Bank of England's monetary policy summary (Bholat et al., 2019). At the same time as we compiled this report, we also studied how labour market statistics are reported by the media, which also fed into this report (Stockland et al., 2022).

1.1.1 Complexity of language

Previous studies have found that the UK public feel economic news are communicated in an inaccessible way, in a language that feels “alien, abstract, and expert-dominated” (Ecnmy, 2017; YouGov/Rethinking Economics, 2016; YouGov/Post-Crash Economics Society, 2015). Another example is our original study, where focus group participants felt economic issues and data were communicated using “economic jargon”, and they described the economy as “confusing”, “complicated” and “difficult to understand” (Runge & Hudson, 2020). This was also apparent when we tested the ONS *Labour Market Overview* during interviews as part of this study. For all other summaries that we tested, participants would immediately speak about specific points made in the material, for instance highlighting something about the UK labour market that they found interesting or surprising. However, for the control version, all

participants immediately spoke about the difficulty in absorbing the information. Many stated, for example, that they would need to read it several times to understand it, and said the text was “too technical”. Participants also expressed a lack of understanding of specific terms and meanings, such as ‘percentage points’, ‘pps’, ‘economic inactivity’, ‘nominal changes’, ‘headline’, ‘base effects’, ‘compositional effects’, and so on. Generally, a number of participants recommended that it should be written in “layman’s language” and “dumbed down”.

Existing studies have shown that the public are interested in the economy and economic issues, they recognise economics’ relevance to their everyday lives, and they want to improve their understanding of the economy (Runge & Hudson, 2020). Those studies have also shown that members of the public are, in fact, quite knowledgeable on topics such as labour market issues, providing “rich”, “nuanced” and “robust” observations, and often confounding the expectations of economists (Runge & Killick, 2021; Williamson & Wearing, 1996; Killick, 2017; NEF, 2018; Ecnmy, 2017). Rather than lacking understanding, it can be argued that the public simply view the economy from a different, much more personal perspective than economists, and that they speak about the economy in a different way (Killick, 2017; 2018). Sometimes economic terms are used extensively by the general population in their everyday lives, such as “unemployment”, “inactivity” or “consumption”, and those terms acquire a different and parallel meaning, which may or may not differ from how economists understand them (Darriet & Bourgeois-Gironde, 2015). It is therefore argued that there are two (or more) parallel understandings of the economy, as the public at large have defined a “new economic reality with its own logic and definition of the economy” (Ibid.).

This has led to suggestions to communicate economic issues to the general population in a more accessible and engaging way, using simpler and less technical language that is closer to the public’s way of speaking about the economy (Runge & Killick, 2021). In joint research by BIT and Bank of England which used an online experiment similar to this project, simplifications in language (as measured by Flesch-Kincaid reading grade scores, which use word and sentence length to estimate how difficult a passage is to read) was a key driver of increases in comprehension of Bank of England inflation reports (Bholat et al., 2019).

It is worth noting that all the considerations above are for the general population as the audience. It may be that other audiences, such as journalists and policymakers, have different preferences in terms of the style of language. We explore journalists in the accompanying report about media reporting (Stockland et al., 2022). Broadly, the different preferences among different audiences apply to all the subsequent sections, which is why our summaries should be thought of as additional, complementary summaries, rather than something that replaces existing ones.

What did we do?

The alternative labour market summaries are written in a more simple and accessible language, as measured by Flesch-Kincaid readability tests. To reduce the reading level, we split long sentences up. We also aimed to replace longer technical terms with shorter ones. As much as possible, economic terms are either not used or when used, they are immediately explained, such as “economically inactive”, “unemployment” and “job vacancies”.

What could be done in the future?

It would be useful to add pop-ups with explanation of technical terms, similar to the monetary policy reports by the Bank of England. This was, however, not seen as feasible to implement on the ONS website.

The language could be made even simpler, though this may also risk pushback from participants in terms of feeling being talked down to.

The format of the summary could be changed, for instance to videos. A longer discussion of this is included in the feasibility section.

1.1.2 Figures and numbers

A report by Ipsos MORI, in partnership with King's College London and National Numeracy, found that more than half the UK working-age population has the numeracy level expected of a primary school child (Ipsos MORI, 2019). Younger age groups were found to be less numerate than older people, and women were more likely to say that they were not a "numbers person", and were more anxious about using maths and numbers. Finally, the study also found that the public value maths a lot less than reading and writing, and that people were less concerned about being bad with numbers (ibid).

Similarly, our ESCoE research on public understanding of economic statistics found that focus group participants demonstrated a weak understanding of the size of different economic indicators, and a lack of confidence in assessing and judging economic figures, whether they were expressed as absolute numbers or as proportions or rates in percentages (Runge & Hudson, 2020). The study showed that people would like guidance on the meaning of figures, especially by seeing the historic trajectory of the indicator or by seeing comparisons with other countries (ibid).

When we tested the existing ONS *Labour Market Overview* release, the reaction from interview participants echoed findings in the previous literature. People commented on the volume of numbers and figures in the text, and said it reduced the readability. Participants said it reduced their reading speed and their comprehension. For instance, Paul – a 56-year-old glassworker – said: *"It is a bit much to get your head around. There are too many numbers to try and crunch for an average person."* Similarly, Claire – a 25-year-old university graduate – said: *"When there is a number, you actually have to pay attention to what the number is. I have to remember maths about what percentage points means, because I know they are slightly different than just percentage."* In particular, some participants commented that the release included numbers that were not necessary, such as Jean – a 61-year-old self-employed: *"I think organisations could be a bit clearer and leave stuff out that is unnecessary. Knowing that the inactivity market decreased by 0.2% in September, what does that really mean?"*

Our previous research shows that some people prefer seeing labour market figures in percentages; others prefer absolute numbers especially if that is compared with the total UK working-age population (Runge & Hudson, 2020). This was again the case when we tested in interviews; therefore, we have presented both types of figures in all our summaries.

Another consideration was to fundamentally rethink what figures are presented for some measures. As an example, in our previous research, public participants have often

questioned why the employment and economic inactivity rates are based on 16–64-year-olds when the retirement age is now higher than 65 and the compulsory education or training age (in England) has been extended to 18 (Runge & Hudson, 2020). Similarly, while people rarely notice, they would undoubtedly question why the unemployment rate is based on people aged 16 and over, with no upper limit.

As such, there are many alternative ways that you could compute the rates of labour market figures. Some of those alternative ways of computing the statistics would arguably have worked better for a public audience in our online experiment, and made some of the explanations easier; however, we also had to consider how this would have fared in a real-world scenario outside an online experiment, where the figures enter public debate. The main concern, highlighted by journalists and the general population in other studies is that differently defined figures provide opportunities for cherry-picking, and that it can feed distrust and the common belief that statistics can be used to show anything (Stockland et al., 2022; Runge, 2021b). As an example, the UK government has recently cited HMRC PAYE figures to argue that there were now more people in employment than before the pandemic began, which was criticised as a misleading and selective use of data by the UK Statistics Authority (2022) because the self-employed numbers had fallen further. Ultimately, we presented the standard labour market figures, according to the ILO convention, which is what is most realistic and feasible in a real-world scenario, outside the online experiment.

Another issue to consider is whether to convey the uncertainty in labour market figures to the wider public, and with how much certainty to communicate changes in the figures. Currently, both ONS and media communicate the figures, and changes in the figures, as if they are exact measures. Existing literature is mixed. On other economic concepts, including GDP and productivity, experimental survey studies have found that communicating the uncertainty in those figures increases public comprehension about the uncertainty without undermining trust (Galvao & Mitchell, 2021). On unemployment figures, a recent survey experiment found the same (van der Bles et al., 2020), but another study using semi-structured interviews found it more challenging to communicate uncertainty of labour market statistics, leading to confusion and further questions among public participants (Runge, 2021b). Similarly, to the considerations above, participants in that study also expressed concern that such ambiguity could be misused and deliberately misinterpreted by different actors, including politicians (ibid). The issue is the same as above; there may be differences in how a labour market summary performs in an online experiment compared to the real world.

Finally, we considered how to report changes in labour market statistics, as well as the balance between communicating levels and changes. One of the key findings of our interviews was that participants preferred to see both absolute and percentage figures alongside each other, including information about the total population and about the development over time to contextualise the figures.

What did we do?

While still maintaining the key figures from the existing labour market release, we tried to include as few figures and numbers as possible, especially in the main text. In some versions, we removed charts, replacing these with infographics that we hypothesised would be easier to understand for people with lower numeracy levels. We added more absolute numbers, in addition to percentage figures.

What could be done in the future?

Online experiments could be used to test different ways of conveying uncertainty in estimates

Figures for different age groups could be presented to mitigate the confusion around why 16 and 64 are used as thresholds and to show the difference in labour market activity for different age groups. A recent UK example of this was done by Jonathan Boys.²

Our charts showed the data across seven years from 2014 to present day, compared to the ONS key charts that show the same data for a 15-year period, from 2006 to present day. The advantage with our charts is that the period around the pandemic is more visible for participants, while the ONS charts included the financial crisis. Our interview findings suggest people would ideally like to see both, suggesting that interactive charts that allows the participants to change the time period themselves would be preferable, including to see developments further back in time.

1.1.3 Employment, unemployment, and economic inactivity

Currently, headline figures from the Labour Market Survey (LFS) are communicated by the ONS according to the standardised international definitions of the International Labour Organisation (ILO). The main focus is on three figures: the employment rate (aged 16-64), unemployment rate (16+) and economic inactivity rate (16-64). In the *Labour Market Overview* on the ONS website, this is done as text in the section on *main points*, and as graphs in the section on *latest indicators at a glance*. On the ONS Twitter page, the communication also headlines those three figures, for instance on the day of the February 2022 publication (Figure 1).

Figure 1: ONS Twitter communication about headline labour market indicators



² Jonathan Boys, Twitter post, 23 February 2022.
<https://twitter.com/JonathanBoys/status/1496450304086261760?s=20&t=vzWUCoRBVoAW84wrX0ft0A>

Existing evidence show that only the first two – the employment and unemployment rate – are commonly communicated in the UK media. In fact, economic inactivity figures are almost absent from media reporting even while it was increasingly flagged as important by economic commentators (Stockland et al., 2022). For instance, Tony Wilson from the Institute of Employment Studies argued that there was a “missing million” workers in the UK labour market, driven primarily by people dropping out of the labour market through illness and early retirement. Given the media focus on the first two figures, it is perhaps not surprising that our original study showed that people often assumed labour market statistics are a binary measure: either you are working (employed), or you are not working (unemployed) (Runge & Hudson, 2020). When presented to them, public participants in all our previous research studies always expressed surprise about the term “economically inactive” and said they had “never heard of it” (Runge & Hudson, 2020; Runge 2021b; Runge & Killick, 2021).

Our studies suggest this is, at least partly, one of the drivers of the distrust in labour market statistics (Morgan & Cant, 2019). The binary perception of labour market statistics held by the general population implies a very different set of figures than the ternary definition held by statisticians and economists. The public perception implies that 75.5% are working (‘the employment rate’). This is the same as the February figures above. However, it also implies that 24.5% are not working (‘the unemployment rate’), which is very different from the statistical definition of the unemployment rate (4.1%). The contrast between those two figures is stark. The difference is between 1 in 25 people and 1 in 4. It should therefore not be surprising that our research participants often express surprise and scepticism that official unemployment figures are so low, and that they argue strongly that it does not match their local and everyday experiences.

To address this, one approach would be to educate the public about how economic statisticians measure people outside work through two concepts – unemployment and economic inactivity – and in this way explain why unemployment figures are lower than most people expect. This approach has some appeal. Economic inactivity is not necessarily a difficult concept to understand. When reflecting in more depth about labour market statistics during focus groups and interviews, most people agree that people who are studying, caring, suffering from illness, or retired are fundamentally different to those who are looking actively for work (Runge & Hudson, 2020; Runge, 2021b). Furthermore, it could be argued that the labour market situation at the time of publishing this report, with a rise in the rate of economically inactive people, provides an opportunity to communicate this concept more clearly to the wider public.

However, for whatever reason, it is safe to say that the concept of economic inactivity is not yet part and parcel of the shared public understanding of labour market statistics. Public participants in our previous research studies sometimes reacted with cynicism when “economic inactivity” was explained to them, and sometimes described the term as a “smoke screen” or as a “loophole”, suggesting that some care needs to be taken when explaining the concept to people (Runge & Hudson, 2020).

In this context, we decided to use another approach recommended by some economists in one of our previous studies (Runge & Killick, 2021). They advocated that the economics profession should become better at meeting the public halfway, rather than educating the public in advanced economic terminology and concepts (ibid). Therefore, in the alternative

labour market summaries, we first presented the binary figures (working and non-working), matching the perceptions held by most of the public, and only then explained the different sub-categories of non-working people.

The same was done for the figure for people in work. We presented the figure for the employment rate first, and then explained some sub-categories. Our previous research has shown that the UK public are keenly aware that people in work are employed in a variety of different types of employment, including in terms of hours, pay, contract type and job conditions (Runge & Hudson, 2020). It is common among focus group and interview participants to argue that not all jobs should be counted fully towards official employment statistics, for example those on zero hours contracts. As such, the existing evidence suggests that the 75.5% figure, at the very least, needs to be complemented with subcategories describing the nature of the employment, such as the number of hours, the length of the contract, whether it is a zero hours contract, and the pay. In the summaries, we chose to show breakdowns by number of hours.

What did we do?

Apart from the control version, all labour market summaries used two headline numbers for people “in work” and “out of work” (in percentage terms 75.5% and 24.5%, respectively; and in absolute numbers 31.2 million and 10.1 million, respectively).

These were immediately followed by figures and explanations about the characteristics of people in work and out of work. For people out of work, this included graphs and explanations about how many were looking for work, and how many were not looking for work, for instance due to studying, long-term sickness, caring for family, early retirement, or for other reasons. The summaries explained that in official statistics these people were referred to as “unemployed” and “economically inactive”, respectively. For people in work, this included graphs and explanations about how many people worked more and less than 30 hours per week.

What could be done in the future?

The existing ONS release uses three headline numbers (employment, unemployment, and inactivity). Our treatment summaries used two headline numbers (in work and out of work). However, there are many more alternative options that could be explored, and which could be subject to an online experiment in itself. This would also include the standard three headline numbers, but with more explicit and accessible explanations of especially economic inactivity and unemployment.

1.1.4 Payrolled employees, vacancies, earnings, and benefit claimants

The ONS labour market statistics include a wealth of different concepts and figures. The *Labour Market Overview* on the ONS website highlights only a subsection of those: employment rate, unemployment rate, inactivity rate, redundancy rate, hours worked (all based on the LFS), payrolled employees (based on HMRC PAYE), job vacancies (based on the ONS Vacancy Survey) and nominal pay and real earnings (based on ONS MWSS). Claimant Count (based on DWP benefit data) is another common measure, which we also considered for the alternative treatment summaries. Inevitably, just as the ONS has had to prioritise some statistics over others in the Labour Market Overview, we faced the same challenges.

In the previous section, we discussed how we covered the main LFS figures. Among the other data, we included the job vacancy data in the last section of the treatment summaries, but did not cover figures on payrolled employees, earnings, or benefit claimants. In our early interviews we tested the *Labour Market Overview* from October 2021, published on the ONS website on 12 October 2021. Interview participants found that the release contained “too much information” and that it was “too wordy” and “overwhelming to read”. This led many to say they would “lose interest” if they came across this in their daily life. It was clear that our alternative labour market summaries – aimed at a public audience – would need to cover fewer concepts.

The number of job vacancies were chosen at the time, as complementary to the LFS figures. Labour market shortages were a key media story at the time, and the ONS statistics showed job vacancies reaching a record high, which was often picked up in media reporting, including as the main focus (Stockland et al., 2022). Furthermore, our early interviews suggested that members of the public found the vacancy figures very interesting. Perhaps more than any other figure, the vacancy numbers and especially the breakdown by sectors were seen as relatable and important for their everyday lives, and for some participants even as something that could potentially inform key personal decisions, such as whether to apply for jobs and what sectors to target in their job search.

If we had done the online experiment at another time, either at another time in the past or in the future, we might have chosen another labour market statistic to complement the LFS figures. As an example, during periods of the pandemic, the payrolled employee, furlough or redundancy figures might have been more engaging for the general population. At other times, such as the current cost of living crisis, the earning figures may have complemented the LFS figures more effectively.

What did we do?

In addition to the main LFS figures (employment, unemployment, and economic inactivity rate), we covered job vacancy statistics in all labour market summaries we tested, as part of the last section. At the time of this study, the number of job vacancies reached a record high in the UK and were reported widely in the media. In addition, our early interviews showed that job vacancies were seen as relevant and relatable to people’s personal lives, especially the breakdown by sectors.

What could be done in the future?

We did not cover payrolled employees, benefit claimants, earnings, or redundancy figures. If the online experiment had been done at another time, it may be that some of those figures would have complemented the main LFS figures better than job vacancies.

In the *Methodology* summary, we considered the possibility of including information about alternative administrative data on the labour market, such as payrolled employee figures (based on PAYE HMRC data) to complement the employment rate figures, and benefit claimant figures (based on DWP Claimant Count data) to complement the unemployment figures. As part of the *Methodology* summary, this explained how that information was collected, and how it differed from LFS. However, based on testing in the interviews, it was decided to maintain the simplicity of only presenting the LFS figures.

1.1.5 Relatability

One of the strongest findings in the existing literature is that the general public view economic issues through the lens of their familiar “personal economy” rather than the abstract “national economy”. For instance, people tend to focus on how the economy relates to and impacts their own daily lives and personal finances (Runge & Hudson, 2020; Killick, 2017, 2018; Ecnmy, 2017; NEF, 2018). Similarly, the literature shows that people talk about the economy in a different language than economists (Runge & Killick, 2021) and they understand complex phenomenon such as the economy and economic statistics by “anchoring” them to familiar concepts and experiences (Leiser & Shemesh, 2018; Moscovici, 1988). One example of this is the tendency to use metaphors to describe the economy, and attaching economic phenomena to things like natural disasters, the weather, and machines etc. (NEF, 2018; Ecnmy, 2017; Leiser & Shemesh, 2018).

The question then is how do you make a summary of ONS labour market statistics, still based on national figures, relatable and relevant to the UK public? Our last two summaries – *Relatability* and *Personas* – try to address this, by using more relatable language which has been found to improve comprehension and trust (Bholat et al. 2019) as well as narratives, which have been found to change beliefs and behaviour (e.g., see Green, 2006). In the last summary, we included stories about fictionalised people, *Personas*, which may make the material more tangible and memorable, by grounding the national figures and abstract concepts in individual people.

Another option was to present figures for people’s regional or local areas, in comparison with other areas or with the UK figures. This was tested briefly in the interviews as part of this study, and while it is undoubtedly a promising approach backed up by previous evidence (Runge & Hudson, 2020), we dropped this summary mainly because it would require multiple versions to be created, and would likely a specific study to be fully explored.

What did we do?

In the Relatable arm, we used infographics and images instead of graphs to convey information. We also used more colloquial language and first- and second-person pronouns, for example “we” instead of “The ONS” and “you”. For example, under the ONS logo we added a line that read: “We collect and produce information independently of the government so that everyone in the UK has access to trustworthy statistics.”

In the Persona arm, we included stories about fictional people, explaining how they were categorised in official statistics and how many other people there are “like them” in the UK. These were presented alongside the infographics from the Relatable version.

We chose to communicate the job vacancy figures, with particular emphasis on sectoral breakdowns, as the interviews showed this to be a very relatable concept for participants.

What could be done in the future?

Creating interactive reports that allow people to look at statistics for their region, or by demographic. This could for instance allow people to create their own personas to explore the labour market activity for like themselves.

More broadly, there is a fundamental challenge for national statistics institutes and other economic organisations that some economic statistics are naturally more relatable, but

sometimes the most important information may be less relatable. There is a question about how much organisations such as the ONS should be telling people about the concepts they already find intuitively interested, compared to trying to steer what people show an interest in.

1.1.6 Messengers

Who is the best messenger when communicating official labour market statistics to the public? Currently, people predominantly receive economic data through the media. However, in our original study, focus group participants highlighted that it was difficult to assess the state of the economy, as they felt they received “conflicting” and “biased” information through the media by politicians and experts, making it hard to “know who to believe” (Runge & Hudson, 2020). Similarly, other studies have found that people thought information in the media about economics was unreliable and untrustworthy (Ecnmy, 2017) and that the media presented official statistics figures dishonestly (Morgan & Cant, 2019; Simpson, 2016; Bailey et al., 2010) and with an ideological agenda (NEF, 2018; Ecnmy, 2017).

In one of our previous studies, we found a desire among focus group participants to hear directly from statistics producers and economists, for instance through the ONS website, without the usual filters of the media and politicians (Runge & Killick, 2021). In that study, participating economists observed a widespread public distrust of labour market statistics, including the common suspicion that the government manipulates unemployment statistics to reflect well on government performance. They argued that it would be useful to boost the awareness that the statistics were collected and produced by the ONS, and that they were independent of government. In addition to receiving the information directly from the horse’s mouth, existing evidence suggests that the UK public generally trust the ONS and their statistics, including believing that it is free from political interference (Morgan & Cant, 2019). Our interviews as part of this study furthermore suggest that it is likely that the awareness and trust in the ONS have increased since then, due to its prominent profile during the COVID-19 pandemic.

Given the above, when designing the summaries, it was important to consider some potential limitations the ONS has as a messenger for the general population. As an official and independent national statistics producer, they need to maintain impartiality. This is exactly what appeals to the wider public because they will trust that the ONS is not driven by an ideological agenda. However, compared to journalists and other potential messengers, it also limits their ability to provide narrative, interpretation, and contextual information (Tong, Runge & Srinivasan, forthcoming; Stockland et al., 2022).

The second potential challenge is how the ONS is perceived by the public as an organisation. Despite the general high level of trust in the ONS, our original study showed that people often assumed that the government produced and collected labour market statistics (Runge & Hudson, 2020). This was driven by the belief that unemployment figures were collected through benefit claimant data produced by DWP and employment figures through National Insurance information produced by HMRC. The belief was also driven by the fact that people usually heard about the figures from politicians who discussed the figures in the news (ibid.). Among older people, it was also driven by memories of changes to the definition of unemployment in the past, which are often seen to have been

implemented to show a reduction in unemployment that didn't exist (Wilmot et al., 2005; Runge & Hudson, 2020).

What did we do?

All six labour market summaries we tested had the ONS as the messenger.

All six summaries had the ONS logo with the full name, "Office for National Statistics", in the top left corner. In some summaries, we accompanied the logo with small text explaining what the ONS does: e.g. "We are the UK's largest independent producer of official statistics and its recognised national statistics institute.", or "We collect and produce information independently from government so that everyone in the UK has access to trustworthy statistics", depending on the summary.

Furthermore, one of the summaries (Methodology) includes a box that explains in detail how the ONS collect labour market data through the Labour Force Survey, to further highlight how the data collection is independent from government. This uses personal language, in particular: "At the Office for National Statistics, we invest significant effort and resources in making sure we interview as many people as possible, from all walks of life."

What could be done in the future?

The labour market summaries could include more detail about the ONS as an organisation, to further promote awareness of the organisation and the independence of the figures. They could also include even more detailed information about how labour market statistics are collected, including the difference between those based on the Labour Force Survey and administrative sources.

The impact of different messengers could be tested specifically through an online experiment, where participants are shown very similar or identical content that is branded as if coming from different organisations. This could help understand how people perceive the same information if it comes from the ONS versus if it comes from media websites such as the BBC, academic websites such as universities, Institute for Employment Studies, Learning and Work Institute, Resolution Foundation, or Economic Observatory; or trusted individual economic messengers. This would not just be an academic exercise, but useful in terms of determining how these types of summaries should be taken forward, and by who.

1.1.7 Feasibility

Regardless of how this study is taken forward by the ONS, our findings contain valuable insights for other organisations about ways to improve communication of labour market statistics. However, as the study was commissioned by the ONS as part of the ESCoE research programme, we aimed to make the different versions of the alternative labour market summaries feasible and realistic, such that it would be possible to publish a similar summary on the ONS website in the future. This would be in parallel and as a supplement to the existing monthly ONS release, but aimed at a different, less technical, audience.

This had some implications. As already discussed, the ONS is an independent organisation with a strong commitment to impartiality. This meant, in particular, that the summary could not contain any references to whether the statistics were objectively "good" or "bad" and limits the amount of explanatory narrative that was included.

To make it feasible for the ONS labour market division to potentially publish it, we also decided to make it a “standing page” or “explainer”. This means that the summaries do not refer to changes in the past month or quarter, but only longer-term trends. As we have already seen, as it turns out, this is generally what seems to be preferred by the general public. This means that the summary should not require wholesale changes from month to month, but mostly an update of the figures.

We could also have been more creative with the format of the summaries. The one used in this study is a traditional website version, with text, graphs, and visualisation. This was chosen, in part, due to feasibility and ease of implementation. Other ways of communicating could be through more interactive visuals, videos, podcasts, social media, apps, quizzes, and games.

1.2 What do the alternative summaries look like?

This section provides an overview of the labour market summary versions that were used in this research. An overview of each, links to see each of the versions and the rationale for testing is provided in Table 1 and described in more detail below.

Table 1: Overview of summary shown in each experiment arm

Name of group:	Baseline	<u>Control</u>	<u>Simplified</u>	<u>Simplified + Structure</u>	<u>Methodology</u>	<u>Relatable</u>	<u>Personas</u>
What's being tested	No summary shown, baseline understanding	Control, adaption of existing release	Simpler language	Simpler language + different structure	Simpler language + different structure + explanation of methodology	Simpler language + different order + infographics + relatable language	Simpler language + different order + infographics + relatable language + stories about different personas
Key features	N/A	Technical language Graphs, no other visuals	Simpler language Graphs, no visuals Absolute numbers (in addition to percentage figures) Binary (in-work & out-of-work)	Different order of content, with graphs & definitions embedded as you go More space between text Summary bullet points	Different order of content, with graphs & definitions embedded as you go More space between text Summary bullet points Explanation of methodology	Infographics instead of graphs Relatable language + examples (using we & you, explaining implications)	Infographics instead of graphs Relatable language + examples Content explained through perspective of "personas", stories about fictional people
Graphs	N/A	4	4	7	7	0	0
Figures	N/A	0	0	1	1	5	5 + people icons
Word count (excluding figures)	N/A	530	450	442	563	542	734
Reading ease (excluding figures)	N/A	Reading ease: 48 ³ Reading grade: College ⁴	Reading ease: 62 Reading grade: Grade 8-9 ⁵	Reading ease: 68 Reading grade: Grade 8-9	Reading ease: 67 Reading grade: Grade 8-9	Reading ease: 67 Reading grade: Grade 8-9	Reading ease: 68 Reading grade: Grade 8-9

³ Lower reading ease score indicates the text is harder to read; a higher score means it is easier to read.

⁴ Equivalent of post-secondary education

⁵ Equivalent of Year 9 or Year 10

1.4.1 Control version

We used a revised version of the monthly *Labour Market Overview* release from January 2022 to act as our control version. This is the version that we test others against to see how they perform relatively. We revised the summary to focus on figures from the Labour Market Survey, including employment, unemployment and inactivity, and vacancy rates. We excluded information on wages and real-time payrolled employee figures. As explained in the previous section, this allowed us to focus on the statistics that previous research indicated were most commonly misunderstood and most important to people, whilst keeping the length of the summary to a length that would be feasible to test in the online experiment.

The control version also only included certain sections from the monthly labour market overview: particularly: *Main Points*, which provided a narrative on the latest figures, *Latest Indicators at a Glance*, which provided line graphs showing 15 years of history for each of the indicators discussed, and *Glossary*, which included definitions for the main concepts. Wherever possible, we kept the content in these sections identical to what was in the January *Labour Market Overview*, or similar information from a previous month's release. We removed the following sections to reduce the amount of content and detail in the summary: *Other pages in this release*, *Labour market data*, *Measuring the data*, *Strengths and limitations* and *Related links*.

The main content of the control version that we tested (excluding figures & graphs and accompanying text) was approximately 530 words. Based on Flesch-Kincaid readability tests, it had a reading ease score of 48, indicating it was written for "College" level readers, or requiring people to have greater than school-level education to understand it.

Figure 2: A section from the Control Version

The screenshot shows the top section of a webpage from the Office for National Statistics. At the top left is the logo for the Office for National Statistics. To the right, there are links for 'English (EN) | Cymraeg (CY)', 'Release calendar', 'Methodology', 'Media', 'About', and 'Blog'. Below this is a breadcrumb trail: 'Home > Employment and labour market > People in work > Employment and employee types > Labour market overview, UK'. The main heading is 'Labour market overview, UK: December 2021' in large white text on a blue background. Below the heading is a sub-heading: 'Estimates of employment, unemployment, economic inactivity and other employment-related statistics for the UK.' A white box contains the text: 'This is the latest release. [View previous releases](#)'. Below this is the 'Release date: 14 December 2021' with the ONS logo. On the right side, there is a green button that says 'View all data used in this statistical bulletin'. Below that is a grey box with the text 'Contact details for this statistical bulletin' and the contact information for Debra Leaker: 'labour.market@ons.gov.uk' and 'Telephone: +44 1633 455400'. On the left side, under the heading 'Main points', the text begins: 'Following a period of employment growth and low unemployment, since the start of the pandemic the employment rate generally decreased, and the unemployment rate increased. However, since the end of 2020, both have shown signs of recovery. Our latest Labour Force Survey estimates for August to October 2021 show the'.

1.4.2 Simplified

The Simplified summary looked very similar to the control version and utilised the same structure: *Main points*, *Latest Indicators at a glance* and *Glossary*. We simplified the text in *Main Points* and *Glossary* sections to reduce the reading level, using shorter sentences and less technical terminology. We also led with high-level binary categories for labour market statistics, in work vs. out of work, and sequentially broke these down further. The in-work category was further broken down into the number of people working more than 30 hours vs. those working less. We broke the out-of-work category down into those inactive and those unemployed. A headline overview of the ONS and what it does was also added to the very top of the page below the logo.

The main content in the *Simplified* summary contained 450 words. The reading ease score for this summary was 62, meaning the reading level was approximately Year 9 or 10.

Figure 3: A section from the Simplified summary

The screenshot shows the top section of a webpage for 'UK labour market figures'. At the top left is the Office for National Statistics logo and tagline: 'We are the UK's largest independent producer of official statistics and its recognised national statistical institute'. To the right are links for 'English (EN) | Cymraeg (CY)', 'Release calendar', 'Methodology', 'Media', 'About', and 'Blog'. Below this is a breadcrumb trail: 'Home > Employment and labour market > People in work > Employment and employee types > Labour market overview, UK'. The main heading is 'UK labour market figures' in large white text on a blue background, followed by the subtitle 'Estimates of employment, unemployment, economic inactivity and other employment-related statistics for the UK.' A white box contains the text 'This is the latest release. [View previous releases](#)'. Below this is the 'Release date: 14 December 2021' with the ONS logo. The 'Main points' section begins with the text: 'Among the 41.3 million people of working age (16-64 years old) in the UK, around 75.5% (31.2 million) are working. 24.5% (10.1 million) are not working. That means three in four are working and one in four are not working.' To the right of the main points are two boxes: a green one that says 'View all data used in this statistical bulletin' and a grey one titled 'Contact details for this statistical bulletin' listing 'Debra Leaker', 'labour.market@ons.gov.uk', and 'Telephone: +44 1633 455400'.

1.4.3 Simplified + Structure

The *Simplified + Structure* summary built on the *Simplified* version by changing the layout and structure of the summary.

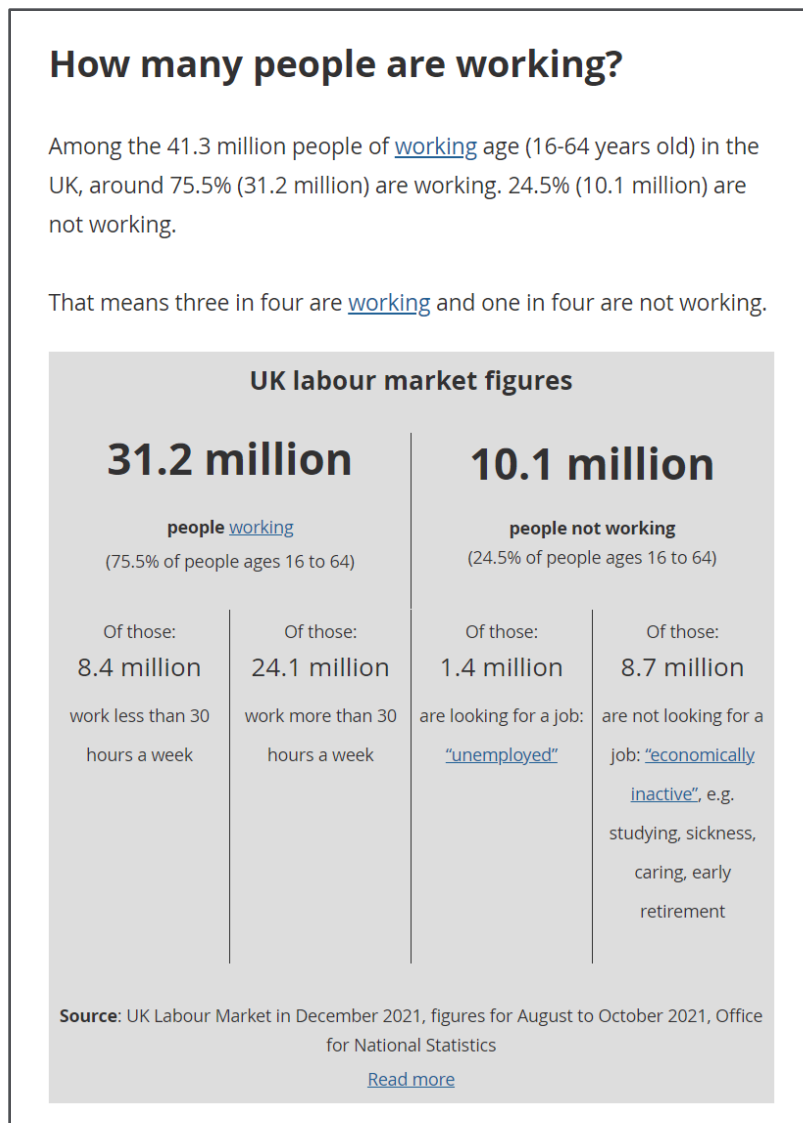
A *Summary* section with 3 bullet points was added, and the main content was broken up into three topics: *How many people are working?*, *How many people are in work compared to before the pandemic?*, and *How many job vacancies are there?*

We included graphs and definitions within the text, rather than separately. For example, if the text was discussing unemployment, the definition would be provided in the next sentence and that section would be followed with a graph of unemployment. We also included a table which further highlighted the binaries discussed above and highlighted key figures outside of the text (Figure 4).

Finally, this summary included additional information to make the definitions of key concepts more tangible. For example, when defining unemployment, we included a bar graph that breaks down the reasons why people were unemployed. When discussing people who are working, we included details on the number of hours worked.

This version had 442 words in the main content. The reading ease score was 68, and the reading level was at approximately the Year 9 or 10 level.

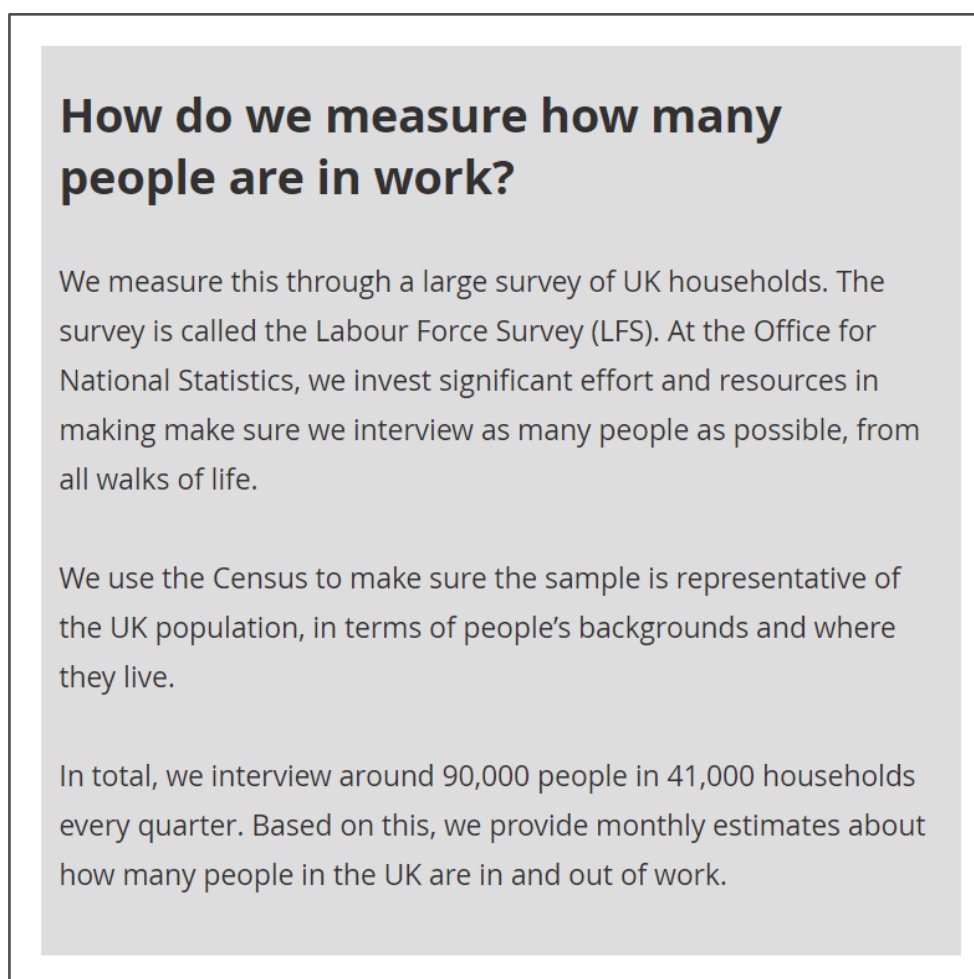
Figure 4: A section from the Simplified + Structure summary



1.4.4 Methodology

The *Methodology* summary was the same as the *Simplified + Structure* summary but featured a prominently placed box describing how labour market figures are collected (Figure 5). This summary was slightly longer with 563 words. The reading ease score was 67 and the reading level was Year 9 or 10 level.

Figure 5: A section from the Methodology summary



1.4.5 Relatable

In the *Relatable* arm, we replaced graphs and figures from previous versions with infographics (e.g., see Figure 6) and updated language so that it was more relatable. We used first- and second-person pronouns, for example “we” instead of “The ONS” and “you”. We updated the description of the ONS under the logo along these lines to read: “We collect and produce information independently of the government so that everyone in the UK has access to trustworthy statistics.” We also added sentences to demonstrate how the information might be relevant to people’s daily lives, such as “You may have noticed more signs in shop windows advertising positions or more adverts on online job sites than usual”.

We used language that was more colloquial or everyday than in previous versions, for example replacing the word “employed” with “working”.

This version had 542 words in the main content (excluding graphs and figures). The reading ease score for this content was 67 and the reading level was Year 9 or 10 level.

Figure 6: A section from the Relatable summary

Office for National Statistics
We collect and produce information independently of the government so that everyone in the UK has access to trustworthy statistics.

English (EN) | [Cymraeg \(CY\)](#)
[Release calendar](#) | [Methodology](#) | [Media](#) | [About](#) | [Blog](#)

[Home](#) > [Employment and labour market](#) > [People in work](#) > [Employment and employee types](#) > [Labour market overview, UK](#)

What’s happening with jobs in the UK?

You can use this month’s Labour Market Summary to see the most recent official job figures and to learn about how many people are in and out of work and how it has changed over time.

This is the latest release. [View previous releases](#)

Release date:
14 December 2021

[View all data used in this statistical bulletin](#)

Summary

- 76% of adults aged 16-64 have jobs, according to the latest data for August to October 2021.
- The number of people with jobs has gone up recently, but the number of people with jobs still is not as high as it was before the pandemic.
- Employers are advertising more job openings than usual.

How many people have jobs?

According to the latest data for August to October 2021, of the **41.3 million** people aged 16-64 in the UK

Category	Count	Percentage
Have a job	31.2m	75.5%
Do NOT have a job	10.1m	24.5%

Source: ONS LFS
[Read more](#)


Among the 41.3 million people of working age (16-64 years old) in the UK, around 15 in every 20 people [have a job](#) and 5 in 20 do not.

1.4.6 Personas

Our last version used stories about people, what we called “Personas”. These took the form of case studies about fictional people, explaining how they were categorised in official statistics and how many other people there are “like them” in the UK (Figure 7). These “case studies” were presented alongside the infographics from the Relatable version.

This summary had 734 words, making it the longest summary, and a reading ease score of 68, or a reading level of Year 9 or 10.

Figure 7: Example of case study from the Personas summary



Case study: Esme & Oliver

Neither **Esme** nor **Oliver** are working at the moment. There are 10.1m other people in the UK who are not working like them.

Esme was recently laid off from her job at a bank and is in the process of looking for a new one. Because Esme is not working and is actively searching for a new job, we refer to her as [unemployed](#). Approximately 1.4m people in the UK are [unemployed](#).

Chapter 2: Testing through an online experiment

2.1. Methodology and experiment design

2.1.1 What an online experiment can teach us

Having developed alternative labour market summaries, we wanted to test how the designs would perform at helping users understand labour market statistics, and whether the different presentation would impact their engagement with the statistics and their trust in the statistics. We therefore set up a randomised controlled trial (RCT) – sometimes also known as an ‘A/B test’ or simply an ‘experiment’ – to collect a range of quantitative data about users’ perceptions of the summaries.

In an RCT, participants are randomly assigned to one of multiple trial arms where they experience only one version of a given service (in this case, one version of the labour market summary). Due to the fact that the assignment is random, we can say, with a high level of confidence, that any systematic differences between the trial arms are due to differences between the summaries themselves, rather than other differences, such as individual differences between participants. An RCT can thus provide much more conclusive data on this question than, for instance, qualitative observations or interviews.

2.1.2 Why this approach was chosen here

Instead of testing the summaries in the real world, we opted to run an online lab experiment, as it gave us the opportunity to measure a range of outcome variables, from testing users’ understanding of the provided information to users’ subjective opinions about the provided information. We wouldn’t be able to easily capture these metrics for an unbiased sample of users on a live website.

The downside of running a lab experiment is that there may be various ways in which users’ interaction with the websites systematically varies from how they would interact with them in the real world. For example, we have a “captive audience” of respondents who are incentivised to read and answer questions about the labour market summaries. We tried to minimise this risk with the following design choices:

- 1) **Closely replicating the look and feel of the ONS website**, to make participants feel like they are interacting with a real website.
- 2) **Making the task as similar as possible to how a real member of the general public would review the ONS website looking for statistics**. For example, with the comprehension questions, questions were displayed below the labour market summary and could be answered at any point, without the need for memorisation, mimicking how a member of the general public may use the website while looking for specific information or reading to better understand the labour market.

2.1.3 What we did

Using BIT's online experiment platform, [Predictiv](#), we had 3,849 adults from across the UK interact with either a control version, adapted from the existing monthly ONS labour market release, or alternative summaries between 21 January and 1 February 2022. People were allocated randomly to see one of six versions of the labour market summary or see no version. This random allocation ensured we generated robust findings on how the different summaries' designs impact upon people's understanding, and views. Our sample was broadly representative of the UK general population.

Participants were shown the different summaries, and then asked a series of questions, which covered comprehension, engagement, and trust. They were allowed to view the summary as they answered these questions, and there was no time limit. This set-up was chosen to simulate the behaviour of a typical user of the summary: a member of the public looking for information on labour market statistics, such as the unemployment rate, on the ONS website. Importantly, this meant that we were testing understanding of the content at the moment it was presented and ability to find information within it, rather than ability to recall information later after navigating away from the site.

We also collected data on a number of other measures, including demographic characteristics, time spent completing the survey, and other feedback on the labour market summary.

2.2. Results

The key findings from the experiment are summarised in Figure 8 below and the results on our three headline outcome measures are also provided in Table 2.

- Four summaries, Simplified + Structure, Methodology, Relatable & Personas, outperformed the control version on our composite comprehension score.
- All summaries outperformed the control version on engagement, whether participants thought the information was interesting or important.
- Additionally, the Simplified + Structure and Methodology arms outperformed the control version on our Trust score.
- Overall, the Simplified + Structure and Methodology summaries performed best across the three outcome measures.

Figure 8: Main findings from online experiment

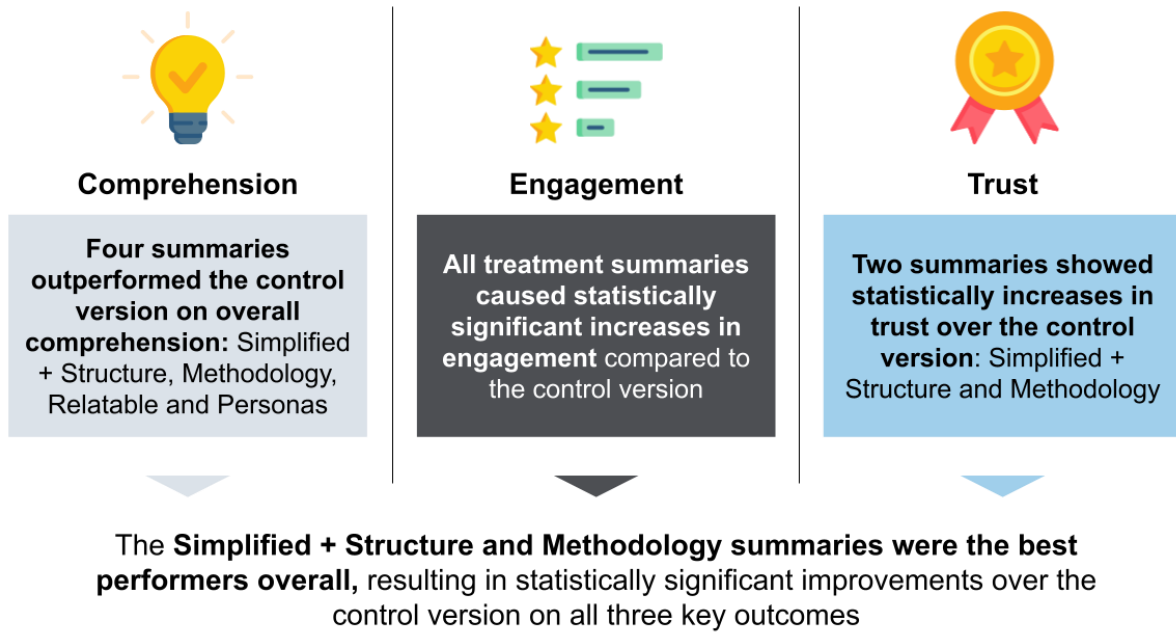


Table 2: Performance by arm on three headline measures, comprehension, engagement, and trust.
 Green shading indicates values statistically significantly higher than the control arm at the 5% significance level

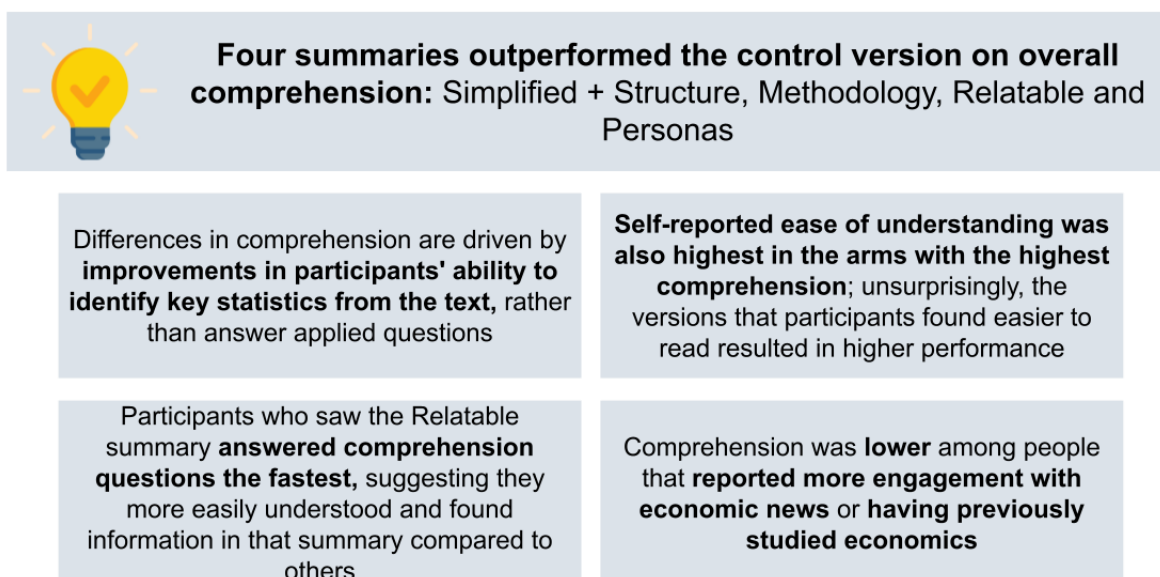
	Control, (N=588)	Simplified (N=589)	Simplified + Structure (N=591)	Methodology (N=569)	Relatable (N=626)	Personas (N=607)
Comprehension score (primary outcome) The percentage of 14 questions that respondents answered correctly	65%	66%	69%	69%	69%	69%
Engagement score (secondary outcome) The percentage of respondents that reported finding the information in the summary interesting and/or important	62%	67%	69%	70%	67%	69%
Trust score (secondary outcome) The percentage of respondents thinking the information was accurate, free from political influence, and/or reflected experience of themselves or friends/family	62%	65%	67%	67%	64%	65%

The numbers in the above table represent descriptive statistics for the average outcome in each group. The bar charts for each of these outcomes, included below, show the predicted treatment effect relative to the control arm; this means there are minor differences between the two.

2.2.1 Comprehension

Our primary focus for this experiment was comprehension of the material presented in the summaries. To gauge comprehension, participants were asked 14 questions: 5 requiring participants to **identify** numbers from the text (e.g., the current unemployment rate) and 9 testing participants' understanding of the definitions of key concepts; we call these “**applied**” comprehension questions. Our overall comprehension score is the percentage of questions that participants answered correctly. Our key findings are summarised in Figure 9 and explained in more detail below.

Figure 9: Comprehension findings



Overall, we find that **Simplified + Structure, Methodology, Relatable and Personas summaries significantly increased the number of comprehension questions overall that participants were able to answer correctly, over the control version (Figure 10).**⁶ We also asked participants whether they thought the information was easy to understand, and the proportion of people agreeing was highest in these arms, and statistically different from the control arm.

Differences in comprehension are driven by improvements on the **identification questions**, i.e., in participants' ability to identify key statistics from the text. The average score on identification questions was 58%. Baseline knowledge of these statistics was low; participants in the group that saw no summary could answer fewer than 2 of these 5

⁶ We conducted a sensitivity analysis (detailed in section 2.5 of the Technical Annex) because our sample was slightly imbalanced on race, such that the control arm had a lower proportion of White participants compared to the other treatment arms. Following this analysis, **we are confident that the treatment effects of improving comprehension are robust for the Methodology, Relatable and Persona labour market summaries, compared to the control.** We are less confident that the Simplified + Structure release is robust to changes in sample composition; however, given it had significantly higher comprehension than control at the 10% significance level, we have included it here as a top performer.

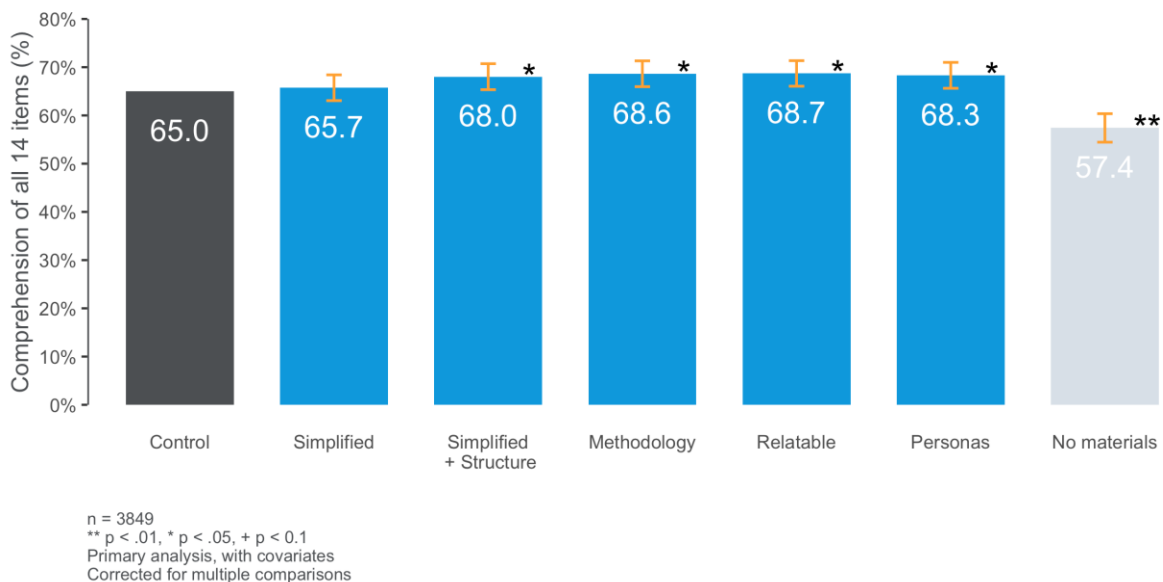
questions correctly, while in the control and treatment arms participants answered around 3 of these questions correctly.

Three summaries, Simplified, Simplified + Structure and Methodology, *reduced* the proportion of people correctly able to identify the unemployment rate. These summaries first presented employment figures as people-in-work vs. people-out-of-work, which may have introduced some confusion between the latter category and unemployment. However, the Reliable summary also used this same breakdown without impacting ability to identify the unemployment rate.

Contrastingly on the **applied questions**, which were focused on testing understanding of definitions and how different people would be categorised in labour market statistics, comprehension was relatively high. The average score on applied questions was 72%.

No summary resulted in an improvement on answering applied questions over the control version, and the baseline performed as well as the control version; that is, participants that saw no summary were just as likely to answer these questions accurately. When looking at specific applied questions, the baseline group actually outperformed the control version and treatment arms on three questions. This suggests that the information provided may actually introduce some confusion.

Figure 10: Comprehension score (%) for all 14 items for each summary, compared to the control version (Percentage of 14 comprehension questions answered correctly)



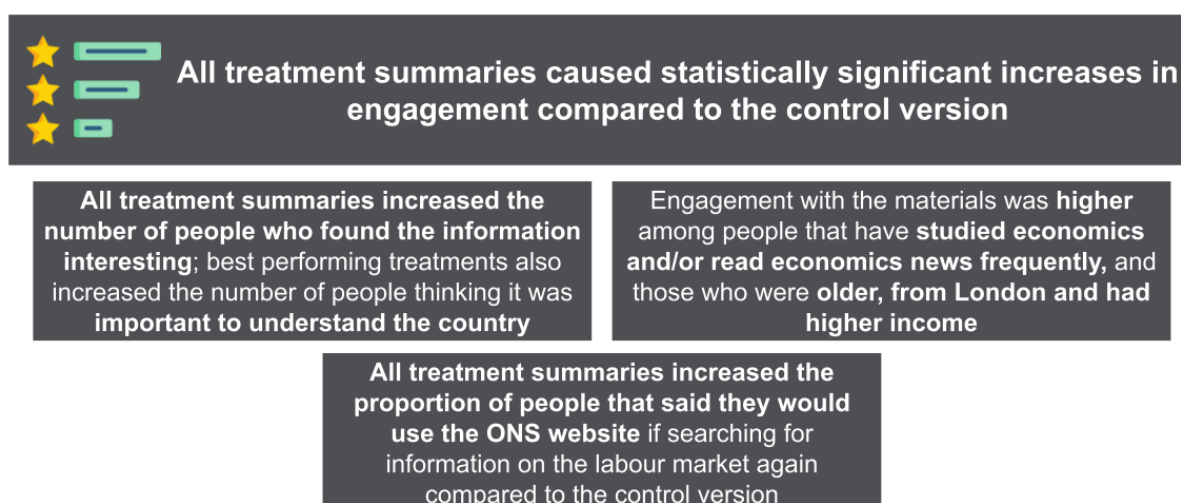
People that performed better on comprehension overall tended to be female, older, and more educated. Interestingly, comprehension was lower among people that reported more engagement with economic news or having previously studied economics; these people spent less time reviewing the summaries on average and reported that the information was easy to understand. This suggests that people who are highly engaged or have previously studied economics may struggle to understand basic labour market concepts but be overconfident in their knowledge.

Average time reading the summaries was highest for the Personas summary, which also was the longest in terms of word count. Participants who saw the Relatable summary answered questions the fastest. As mentioned above, this was among the summaries that scored highest on comprehension, suggesting participants more easily understood and found information in that summary compared to others.

2.2.2 Engagement

To measure engagement, we combined results from two questions that asked whether participants found the labour market summary interesting and if they thought the information in the summary was important to understand the country. While engagement may be better measured using data on participants actual behaviour (e.g., whether they read more, whether they visit the webpage again), this was not possible in an online experiment environment; therefore, these questions were chosen to get at key perceptions that may be indicative of engagement. Our engagement score is therefore the average percentage of participants that thought the information was interesting, and thought it was important to understand our country. Key findings on these metrics are outlined in Figure 11 and described below.

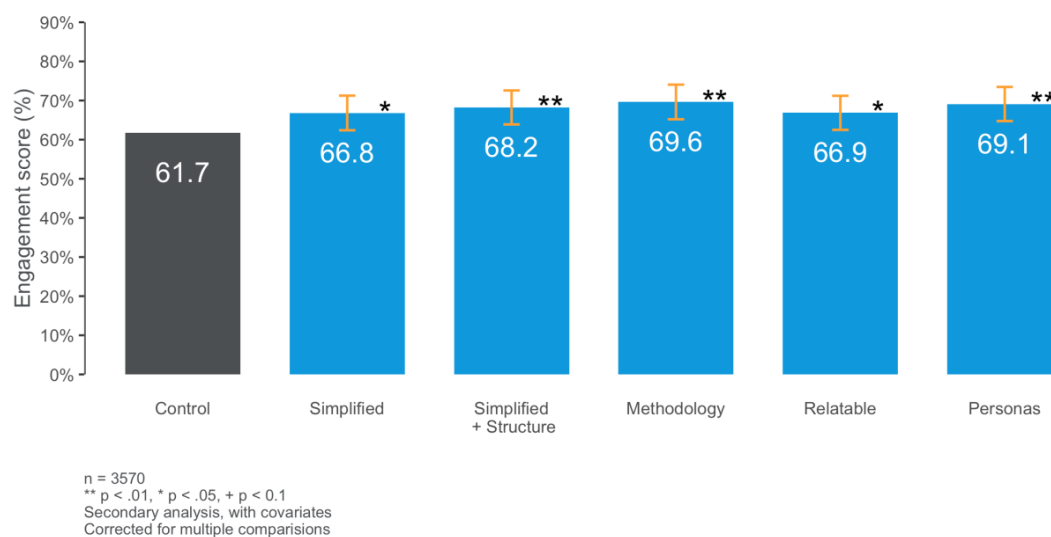
Figure 11: Engagement findings



We find that **all treatment summaries caused statistically significant increases in engagement compared to the control version (Figure 12)**. All treatment summaries increased the number of people who thought the information was interesting; the best performing summaries for engagement, Simplified + Structure, Methodology and Personas versions, also increased the number of people reporting the information was important to understand the country.

Engagement with the summaries was higher among people that have studied economics and/or read economics news more than once a week (despite the fact that these groups performed worse on comprehension), and those who were older, from London and had higher income. All treatment summaries increased the proportion of people that said they would use the ONS website if searching for information on the labour market again, by 6 to 8 percentage points, statistically significant at 5%.

Figure 12: Engagement score (%) for each summary, compared to the control version (average percentage of participants that thought information was interesting, and/or important to understand the country)



2.2.3 Trust

Figure 13: Trust findings

Two summaries showed statistically increases in trust over the control version: Simplified + Structure and Methodology

Increases in trust were driven by **more people thinking that the statistics were free from political interference**, rather than improvements in perceptions of accuracy

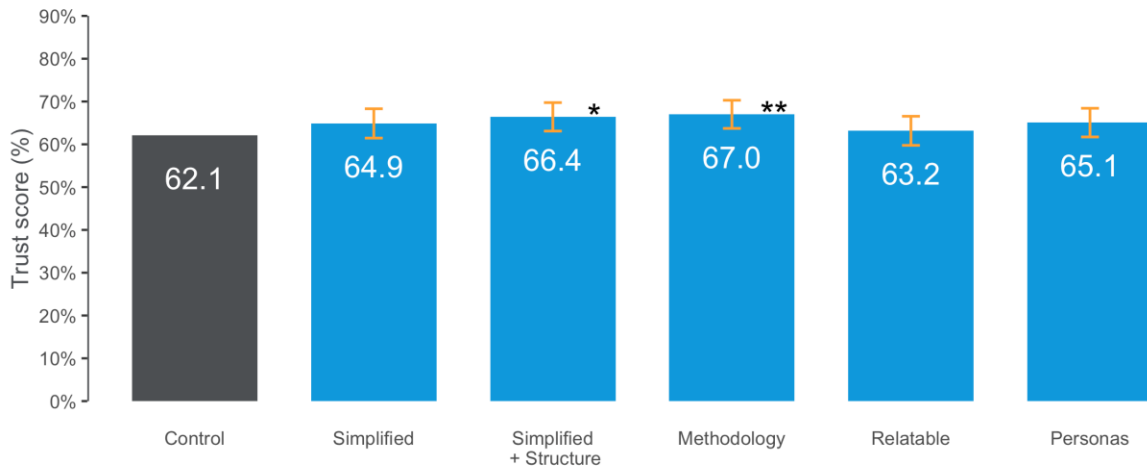
People who are **older, have higher income, live in London and engage more frequently with economic news** had higher trust scores

To measure trust, we combined results from three questions, which asked whether participants thought the information in the labour market summary was accurate, (not) politically influenced, and if it helped them understand what they, their friends or their family had experienced in the labour market recently. These questions were chosen as previous ESCoE research found that members of the public felt that ONS statistics could be fudged or manipulated by the government to make their performance appear better or that figures weren't accurate and did not reflect their personal and local experiences (Runge and Hudson, 2020). Our overall trust score is therefore the average percentage of participants in each arm who believed that the material in the summary was accurate, not politically influenced and/or helped them understand the experience of their friends.

Two summaries showed statistically increases in trust over the control version - Simplified + Structure and Methodology (Figure 14). Increases in trust were driven by more people thinking that the statistics were free from political interference. No treatment summaries resulted in a statistically significant increase in perceptions of accuracy of the statistics over control version.

People who reported that they engage more with economic news had higher trust scores than those that did not. There was no difference in trust score between participants who had or had not previously studied economics. People who were older, had higher household income, and those from London tended to report higher levels of trust than others.

Figure 14: Trust score (%) for each summary, compared to the control version (average percentage of participants who believed that the material in the summary was accurate, not politically influenced and/or helped them understand the experience of their friends.)



n = 3570
** p < .01, * p < .05, + p < 0.1
Secondary analysis, with covariates
Corrected for multiple comparisons

Chapter 3: Insights through interviews

3.1. Methodology

We collected in-depth qualitative data through 28 semi-structured interviews with members of the UK public. During the interviews, we gathered detailed information about people's reactions to the existing ONS labour market release and the alternative summaries (the treatments) we designed, to help explain the results of the online experiment.

The interview participants were recruited by a professional recruitment company (MRFGR) and sampled to include a wide variety of different people across the UK, with different demographic characteristics such as age, gender, ethnicity, education, occupation, and interest in economic issues. The public participants were each paid £30 as a bank transfer for their participation in the 45-minute interview.

The results section is structured as follows. Section 3.2.1 outlines how interview participants perceived the existing ONS release. An adapted and updated version of this acted as the control version in the online experiment. The subsequent sections (3.2.2 to 3.2.6) explore their perceptions of the summaries. These were tested in a variety of different versions during the interviews. This included some early working drafts as well as the final summaries that were subsequently tested in the online experiment. Due to the limited sample sizes, the sections below should only be seen to provide additional detail to understand the findings of the online experiment. The strength of the interview data is its ability to provide depth and nuance into the variety of views of the UK public, rather than necessarily being generalisable to the wider population.

These sections (3.2.2 to 3.2.6) will cover how participants viewed different aspects of the alternative summaries, such as the language, the use of figures and visuals, as well as people's understanding of different labour market concepts and their perceptions of the messenger. It will also explore how participants perceived specific aspects of the summaries, such as the information about data collection and the relatability features. Based on the views of interview participants, it will also discuss whether people are likely to engage with the summaries outside the experimental setting, including what format it should be in and what improvements could be made.

3.2. Results

3.2.1 Existing ONS release

We tested the *Labour Market Overview* from October 2021, published on the ONS website on 12 October 2021.⁷ All interview participants found this bulletin difficult to follow and understand. Many stated, for example, that they would need to read it several times to understand it. The release was often described as “too technical”, and participants

⁷ ONS Labour Market Overview, October 2021:

<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/uklabourmarket/october2021>

commented on the number of numbers and figures in the text, which reduced its readability. They also commented that there was a lot of information in a few paragraphs, which made it “too wordy” and “overwhelming to read”. This led many participants to say they would “lose interest” if they came across this in their daily life, and some argued it should be “dumbed down”. Some examples were:

‘It’s not written in layman’s speech. It went over my head. If I had to pass on the information to someone else, I would have to reread it, to try and get it all clear in my head first... There was probably too much information, and too many percentages and figures, and for it to be clear at the end of the day, what was it actually saying?... Knowing that the inactivity market decreased by 0.2% in September, what does that really mean?’ **61-year-old self-employed from Chesterfield.**

‘There’s a lot of numbers to take in. I feel like I need to write it down and then work it out like an equation. It is a bit much to get your head around. There’s too many numbers to try and crunch for the average person.’ **56-year-old glassworker from Doncaster.**

‘I read that much slower than my normal reading speed... I found myself re-reading the information more than I would when text has no or few numbers in.’ **25-year-old in Wales, not working due to a health issue.**

Participants also expressed a lack of understanding of specific terms and meanings. This included: ‘pps’, ‘percentage points’, ‘nominal changes in pay’, ‘headline’, ‘base effects’ and ‘compositional effects’. There was also confusion about the term ‘economic inactivity’. Many participants stated that they did not know what this referred to in the ONS release. This is discussed in more detail in Section 3.2.3.

Perhaps the most substantial difference for the existing release compared to other summaries was the extent to which interview participants engaged with the content of the latter. When we tested the different summaries, we always asked people the sample question after they had read the summary: “what is your initial reaction to reading this?” For all other summaries that we tested, participants would speak about specific points made in the summary, highlighting something they found surprising or interesting, whether that was the information about vacancies, economic inactivity, or the changes since the start of the pandemic. For the existing release, however, the immediate reaction among participants was almost always to speak about the difficulty in absorbing the information, rather than reflecting on the actual content.

Overall, the interviews support and explain the findings of the online experiment, in particular why the *Labour Market Overview* exhibits lower levels of engagement and comprehension compared to the alternative summaries.

3.2.2 Accessibility (language, visuals, numbers)

While there were mixed views, by far most interview participants thought the alternative summaries were easy to read, and certainly easier to read than the control version. Participants often described the alternative summaries as “quite simple to understand”, “easy to read”, and that it was “written in a straightforward, easy to understand language”. Some examples were:

‘I think they were all simple to understand. They were explained very clearly, the graphs weren’t overbearing, you could quite easily read that, and like I did, understand the gist of the story and what picture is being painted. there wasn’t too much information on any one page.’ **31-year-old man, lives in Nottingham, works as a teacher.**

I didn't think anything there would kind of boggle anyone who has like a very fundamental understanding of just like numbers, and very basic understanding of kind of like the working world. So, I think it's definitely easy to interpret for an average person.' **20-year-old man, lived in Scotland, studies at university.**

However, while this was the majority view, we also interviewed participants who found the document less accessible. The most common criticism among those participants was that the summaries were too long, and participants doubted whether they would read all of it. For instance:

'I think I found it difficult to read. Not because I need something big and bold to catch my attention, but I found it a bit long-winded. It could have been a lot briefer... I feel it could have been shorter and more to the point.' **30-year-old man, lives in Manchester, works in mental health.**

'I suppose it repeated itself a lot in different ways... I don't know if people would go and read four or five pages.' **56-year-old woman, lives in Halifax, retired teacher.**

Compared to the control version, the alternative summaries did not receive the same types of comments that there were too many numbers and percentages, and that it was too technical to read. However, we still identified a range of views of how people received the information, particularly about the balance between text, visuals, and numbers. Many said they liked the balance in the alternative summaries, especially that it combined all elements and broke up the text with visuals and charts. This compared to the control version that had all the text and numbers in one section, and all the charts in another. Some examples:

'It was quite easy to understand. Because of the percentage, and then the graphs to show you. I guess some people might work better with percentages, some people might work better with graphs, so you can see it both ways.' **42-year-old man, lives in London, self-employed electrician.**

'I thought it was really nice, easy to read, not loads on one page and it tended to have a bit of writing and then a nice little visual diagram, which is really good.' **24-year-old woman, lives near Stoke, medicine student.**

There were also some participants who commented that they preferred to read the information as text compared to visuals, and others vice versa. The participants who said the former said they did not look that closely at the graphs. Some said they found them “intimidating” but others said they were “nice visual cues” even if they did not necessarily look at them in depth. Others said they were more visual and admitted that they would only normally skim read the text and then look in more detail at the charts. These participants often praised the charts:

'It was quite easy looking at the graphs because that really paints a better picture than the numbers. Because it's there in black and white, where the trend is, and how it's going.' **52-year-old man, lives in Cheshire, does not work due to long-term illness.**

'I'm quite a visual person, so I enjoyed interpreting the graphs.' **33-year-old man, lives in London, works in IT.**

Some of these suggested there could be more visuals, and that the summaries were “text book like”. For instance, some participants suggested to add more interactive visuals, such as videos and GIFs, and more colour and images. However, overall, most participants liked that the information contained both text, numbers, and visuals. We found no evidence that it is not possible to communicate statistical numbers and visuals to the public, as long as it is done in an accessible and engaging way.

In terms of the visuals, our interviews revealed both positive and negative perceptions of all the types of visuals used across our summaries. Some preferred the graphs in *Control*, *Simple and Structure* and *Methodology* showing the development of those indicators over time, which enabled them to benchmark and compare with the past, including their personal experiences in the past. Some preferred the box in the *Simple and Structured* and *Methodology* summaries that highlighted the absolute and percentage figures for people in work and out of work, which gave them a quick overview. Some preferred the 3x3 table in the *Relatable and Persona* summaries, which provided an overview of the absolute and percentage figures and provided a sense of development over time, without using charts. Some preferred the graphics with the figures in the *Relatable* and *Persona* summaries, which enabled them to visualise the proportion of people. Some preferred the case studies in the *Personas* summary, which made the information relatable. However, during the interviews, we also received negative comments for all those visuals, from participants who wanted the information communicated in another way.

Overall, it was clear that the public is a highly diverse entity, and it is very hard to design something that works for everyone at the same time. As such, the most important finding is that the information needs to be balanced, incorporating different elements such as text, numbers, and charts. Even when using one, it was sometimes appreciated having several ways of visualising that element. The most prominent example was that participants appreciated when the summaries showed both the absolute and percentage figures next to each other. Many participants said this improved their understanding of the figures. For instance:

'It was nice how you had the number but then also the percentage as well, because sometimes numbers don't really mean anything on their own.' **24-year-old woman, lives near Stoke, medicine student.**

3.2.3 LFS figures: unemployment, employment, and economic inactivity

The traditional ONS information breaks the UK population into three groups when presenting labour market statistics, that is those who are employed, unemployed and economically inactive. All our treatment summaries presented those figures as those who are in work (employed) and those who are out of work (unemployed and economically inactive). This section explores whether this helped comprehension, engagement, and trust in the figures.

The information about economic inactivity struck a chord with many participants, and it was highlighted as one of the key takeaways, and participants said they found this information interesting. It was clear that very few participants had heard about the concept of economic inactivity before. However, when participants reflected on what they had read, many demonstrated a clear understanding of the concept and figures relating to economic inactivity. Some examples were:

'If you ask me in a couple of days, I'd be saying, "there is a high percentage of people who are not working, but it's not because they can't find a job. There is a lot of people that are inactive, economically." **41-year-old woman, lives in Leeds, self-employed interpreter.**

'I've learned some stuff today. I didn't realise that of the people who aren't working, the majority of those people are not only not working, but they're not economically active. So they're not really putting anything back into the economy as such, but they are doing other

things which helps, like carers, which again takes the weight off the government, which saves money, which again helps the economy.' **60-year-old man, lives in North East, unemployed.**

Participants were often surprised about the high number of people of working age who were out of work. Many recalled the information in the summary that 25%, or a quarter, of working-age people were out of work. Some thought this figure was interesting, but some also expressed shock, especially that the number of economically inactive was so high, and that it had increased substantially during the pandemic:

'The specific numbers of how many people are basically unemployed or inactive are quite alarmingly high.' **33-year-old man, lives in London, works in IT.**

'I was quite shocked about the number of people who are actually sick. The 1.2 million, I was just like, wow! I didn't realise that number would have been so high.' **41-year-old woman, lives in Leeds, self-employed interpreter.**

'Economically inactive has increased by 350,000 since the start of the pandemic, that's like wow... The number of students has increased by 260,000, again, that's logical, but still wow, that's interesting. People have clearly been put into a position with the pandemic that they have taken an option to retrain potentially.' **52-year-old man, lives in South East, works in housing.**

Some participants read an earlier version of the summaries that included the wording "people who simply don't want to work". For some participants, this seemed to take precedence over any other information, as they started to reflect on the UK benefit system and the luxury of being able to choose not to work. For this reason, this reference was amended in future versions to more neutral language. A couple of participants also reacted with cynicism upon seeing the different categories, arguing that it was a way to make the unemployment rate look smaller. For instance, this participant expressed this view, but still found the information interesting:

Lots of different categories. Everybody seemed to be put into different brackets rather than just a straight unemployed or employed. I suppose the cynic in me would say it's fiddling the figures because [if you are] long term sick and then you're still claiming the benefits and then you're not on the unemployment rate. Then it looks better that way. And, certainly with other things like the students. Yeah, it's very interesting reading actually. There's lots of detail there.' **52-year-old man, lives in Cheshire, does not work due to long-term illness.**

Generally, many noted that, while the high level of non-working people had surprised them, it made sense to them when it was explained and broken down into different categories of people. The participant below concluded that "economically inactive" was a big term when reflecting on the figures:

'It was quite surprising.... a quarter of people not working aged 16-64, that was quite a heavy statistics for me. I didn't realise there was that many. But then you break it into students and things like that. It's not just people not working, it's people who are otherwise engaged and doing other things, or can't work. 1.5 million of those are looking for a job. 8.7 million are not looking for a job, economically inactive. Well, economically inactive is a very big term.' **59-year-old, lives in Liverpool, works in a garden centre.**

As reflected in the findings of the online experiment, the information about people out of work, including economic inactivity, sometimes did create confusion among interview participants. Most prominently, people who clearly understood the information and the distinction between unemployment and economic inactivity still sometimes used the term 'unemployed' and 'unemployment' to refer to all people out of work. Some examples were:

'I didn't realise... of the people who are unemployed, I didn't realise that the bulk of them are actually people who aren't able to work, or aren't looking for work, the economically inactive ones are actually a lot more than the one point odd millions of people who are just, like me, looking for a job.' **60-year-old man, lives in North East, unemployed.**

'One thing that actually really surprised me was about how unemployed was only categorised as those that were actively looking for a job. I actually didn't know that, in comparison to those... there was a word used, what was it, economically inactive? That was really interesting.' **20-year-old woman, university student in Birmingham.**

'I wasn't aware that the number of unemployment people was so high. It's a lot of people who aren't working. But then having seen the breakdown of those people, that gave it a bit more validity and context to why the number is so high.' **20-year-old man, lived in Scotland, studies at university.**

'Economically inactive, is that exactly the same as being unemployed, because technically they are unemployed if that makes sense?' **30-year-old man, lives in Birmingham, unemployed.**

This demonstrates the challenges in potentially introducing the term into public debate. Many people will already have pre-conceived (and often incorrect) definitions of the term 'unemployment'. At the moment, we implicitly accept this, but those misconceptions become even more apparent when people are introduced to the term 'economically inactive'.

The confusion happened especially when participants were reading the alternative summaries, and they sometimes came to premature conclusions, but then usually understood the information as they read on. For instance, this participant, at first, expressed surprise about the figure for people out of work, but having read the whole summary, she was no longer surprised:

'Now I do [understand it], and it makes sense. To me, people not working, I just expected people that are claiming Jobseekers Allowance, that are looking for work and desperately actively searching for work. So, now I understand it, and that figure is not high at all. Because there are a lot of people with health care issues or carers and students. But my initial thought when I saw that number, I was like "wow"!' **41-year-old woman, lives in Leeds, self-employed interpreter.**

Interview participants made less references to the other LFS figures, such as the employment and unemployment rate when reflecting and commenting on the alternative summaries, compared to the control version. Some appreciated the information about number of hours for people in employment. In previous research on this topic, we usually received a lot of comments about different types of employment, such as people working on zero-hours contracts and other insecure employment. However, it was notable that the employment figures in these summaries were taken more at face-value, possibly due to the information about hours worked.

The unemployment figures were mostly discussed with reference to economic inactivity, as described above. There was some confusion about how the summaries introduced the concept of unemployment. In the beginning of the summaries, only the absolute number of unemployed people were mentioned, that is 1.4 million people. This seemed easy for participants to understand. However, later on when introducing the concept of the unemployment rate, some participants got confused about the attempt to explain the denominator that is used in the calculation of the unemployment rate, that is that it is only the share of "the people who either have a job or are looking for one". While only a few participants commented directly on this, it could be that many more simply did not engage

with this. There were also some participants who asked for more information about the unemployment, in particular how many of those were on benefits.

Finally, there were some participants who noted that the figures were based on people aged 16-64 and wondered why the upper age threshold was not set at the new retirement age.

3.2.4 Methodology (explanation of data collection, administrative data)

We tested slightly different versions of the methodology summary. They all included the same type of information as the final summary, such as about the Labour Force Survey and collection methods, but some also had more detailed information about the differences to HMRC payrolled employees and DWP Claimant Count statistics.

The interview participants often found the information about methodology interesting and surprising.

'One thing I did learn was obviously it was showing how they actually got the information together, to actually create the figures. I always thought those figures were created simply by looking at the people who were actually claiming benefits. I didn't realise they also carried out surveys and interviewed people each month.' **60-year-old unemployed, former IT worker, in Sunderland.**

This interest was also reflected when we tested other summaries that didn't include this information; some people that saw these versions sometimes requested more information about how the data was collected, such as this person:

'So, are they actual facts? Where do you actually find out the facts? This here, it could be true, it could not be true. How have they found this information out?' **36-year-old woman, lives in Leeds, works in social care.**

For those who saw the information, the information was often described as surprising, as people often assumed the figures were collected using benefit claimant figures and tax data. Sometimes, participants said it was useful to know that the information was collected through a large household survey, and some appreciated that this provided an in-depth understanding of the UK labour market, for instance:

'That means they're actually talking to real people out there... I think that gives them a better understanding, it produces better figures, because you get an understanding of what those people are feeling about the situation. Rather than just relying on pure statistics essentially generated from a computer.' **60-year-old unemployed, former IT worker, in Sunderland.**

However, there were also evidence that the information brought up questions among many participants, and in some cases, scepticism. The most common example was comments about the low number of people in the Labour Force Survey, with people sometimes clearly comparing it to traditional small-scale surveys and opinion polls, and they doubted that a survey could be accurate when the sample was such a small proportion of the entire population.

'I would assume it would be a wider spread. I thought it would be from more households. That's just an observation. When you say for the UK, that does not sound like a lot.' **20-year-old woman, university student in Birmingham.**

'In total, 80,000, I mean in comparison to the actual population of the country, I don't think that's good... I don't think that's an adequate amount of people to be interviewing.' **30-year-old teacher in Nottingham.'**

'It's a straw poll, isn't it? If you are dealing with numbers like that, 80,000 people out of a working population of 41 million. It's only a small sample in real terms. I wonder how they scientifically deal with regional differences.' **70-year-old retired civil servant from Birmingham.**

However, participants also brought up broader issues around methodology. This was especially the case among those participants who were presented with more detailed information about collection methods and different measures, including about payrolled employee and Claimant Count figures, and the advantages and disadvantages compared to the Labour Force Survey figures. This received mixed receptions. Some participants said it increased their trust in the information, because the summary was “transparent” and “honest” about the limitations of the data, contributing to their belief that the summary was “unbiased”. As an example, when asked later about whether he trusted the information in the summary, this participant drew on his understanding of the collection methods as outlined in the summary, and used that to support his view that the data and summary was trustworthy:

'Yes, definitely... This has been published by the HMRC, so it's right, and they have carried out certain surveys from certain places, it would be trustworthy... I'm definitely going to trust them.' **42-year-old man, lives in London, self-employed electrician.**

Some of those, however, made the point that they already trusted the ONS and would be inclined to believe their information in any case. One of these suggested it would be better to provide a link to a separate page with detailed and accessible information about the methodology and collection methods.

However, the detailed information about collection methods also led some participants to express their surprise that labour market statistics were not of higher quality. For instance, this participant reacted to the information that self-employed were not included in the estimate of payrolled employees, and that there could be some double-counting:

'It is a bit weird that there's not a system that is foolproof. I had assumed that HMRC would be the way they'd do it. I thought they would have systems in place that will allow to show how many jobs one individual has. And, even if someone is self-employed, they'd still have to be completing tax returns. So you would have thought they would have a picture from there. I hadn't realised that there were so many things that could affect that and make it unreliable.' **31-year-old man, lives in Nottingham, works as a teacher.**

Overall, these concerns meant we opted for testing the slimmed down version of the *Methodology* summary, which simply had information about how the Labour Force Survey figures were collected.

3.2.5 Relatability (language, personas, job vacancies)

The most relatable aspect of the summaries was the information about job vacancies. This was often highlighted as the key takeaway of the summary. It was common for participants to comment while reading the section on job vacancies. For instance, one participant said “wow” and described it as “very interesting”. Another commented immediately that “there is quite a lot of jobs going”. It was clear that the information was relatable to participants, and this was reflected in a number of ways in how they spoke about the summaries. First, people commented on the figures by comparing them to their own experiences and knowledge about the labour market. In many cases, participants stated that the job vacancy figures resonated with their observations from their daily life:

'[the number of vacancies] has gone back up, because obviously people don't feel safe, people are passing away, people are no longer fit to work. It does make sense.' **20-year-old woman, university student in Birmingham.**

'We've definitely seen that. I'm sure all of us have been to a shop where they don't have enough staff, or been to a pub or a restaurant where the staff are running around because there's not enough staff.' **52-year-old man, lives in South East, works in housing.**

'Some friends have been trying to recruit people for new jobs, and they're finding it so difficult.' **24-year-old woman, lives near Stoke, medicine student.**

In particular, participants were interested in the sectoral figures which they related to their daily experiences. This seemed to be one of the reasons why interview participants commented and reflected more on the vacancy figures after reading the treatment summaries, compared to reading the control version. As an example, participants said they were not surprised about the high number of vacancies in sectors, such as health, retail, and education, and then went on to provide potential reasons for why this might be the case as well as personal anecdotes about what affected the jobs market in those sectors, including how those sectors had fared during the pandemic.

Second, people related the vacancy figures to their own current or future job searches, or those of family members:

'Seeing those figures, it's confirmed that there are more jobs now available in my field. It's also shown me that I am in one of the fields where there are shortages. I'm obviously applying for several jobs every day, I need to get back into work. But the one thing about the figures, it's showing me that I am at least doing the right thing by sticking at my field, rather than looking around.' **60-year-old man, lives in North East, unemployed.**

'If I am applying for a job, it would be in care work or probably in retail. I know where I could work and where my skills are. So I think that's a good thing to know that there is actually work out there.' **36-year-old woman, lives in Leeds, works in social care.**

Similarly, some participants said this information would be useful if they were going to apply for jobs in the future, including to inform considerations about whether to stay in their current sector or potentially switching:

'If I was desperate for a job, I'd probably apply for a few different industries. I'd probably more apply for a hospitality or health job, just because there's a lot of jobs going. I'd love to do administration but I'd probably apply for them next because I can see that is not as much.' **27-year-old woman, lives in Sheffield, works in catering.**

'If I had been in my job for a couple of years and I was getting a bit fed up and I wanted a change or something. These statistics might give me an indication of the job market, and you know where it all stands and whether it's a good idea just generally to be looking elsewhere. But I think that won't necessarily sway me because I still want to go into the market and actually look at what's on offer.' **20-year-old man, lived in Scotland, studies at university.**

However, it should be said that some participants noted that to make this information truly relatable and useful to inform their job search and personal career decisions, the information would have to be more detailed, especially by breaking down the vacancy figures by occupations and regions. For instance, a participant gave a typical example:

'So it is better to know, for example retail assistant and management roles, because people that haven't got that management experience. So if it says there's 150,000 vacancies in retail, you could find that there's 90,000 managerial and 60,000 isn't... Then it is easier for the actual person who's looking at it to understand realistically to the public.' **30-year-old man, lives in Birmingham, unemployed.**

Though we did not test the *Relatability* and *Persona* summaries with many participants as those were only developed for the last wave of interviews, there was some evidence that interview participants found the case studies and personas useful to make the content more relatable. For instance, this participant said the scenarios were realistic and would resonate with many people.

'I understood it quite clearly, I think I followed it. I think the diagrams using figures of people and so on was quite good. And then obviously the case studies with little figures next to it just made it a bit more, you could think of it in your head as there's a face attached, although it is a cartoon, but still... I think they were real life, they're scenarios that people are in generally, because you've got people who are looking after children. I think there are things that people can actually relate to.' **31-year-old woman, lives near Birmingham, works in finance.**

3.2.6 Messenger and source

Many of the participants stated that they found the statistics presented in the summaries broadly trustworthy. Sometimes, participants based their trust on the fact that the information in the summary, for instance in relation to the developments during the pandemic, matched their personal experiences and knowledge. For instance, this participant argued that the statistics in the summary "made sense":

'I guess I did trust the statistics because they made sense. When you think about what's happened since the beginning of lockdown, then you look at the patterns on the charts especially the one about the vacancies, that would make sense.' **20-year-old woman, university student in Birmingham.**

Many participants highlighted that information came from the Office for National Statistics, with some referring to the header, with the ONS logo, and a text that explained they were UK's largest independent producer of official statistics. These participants typically said they trusted information from the ONS. For instance:

'I think this data is by the ONS, isn't it? ONS data is the most reliable data. Because they are one of the organisations that people look up to. They do data for the census and everything.' **46-year-old man, lives in South East, works in public sector.**

'Yes, definitely, because was it the ONS, the Office for National Statistics? So yes, just from my knowledge I would believe that information.' **24-year-old woman, lives near Stoke, medicine student.**

'They must have done some research to get this kind of information, so yes I trust it. It says Office for National Statistics, and then it's got a logo on the top, so I'm probably thinking it collected information from all the Jobcentres and everything, probably, or the main government website. But I am thinking, it is reliable. It looked like a reliable piece of information, that it wouldn't be just made up kind of thing. So, I'm sure some kind of research has gone into, to collate all this information, so, yes, I would go by it.' **41-year-old woman, lives in Leeds, self-employed interpreter.**

Some of these participants explained that the information that the data was collected independently of government, in particular, increased their level of trust in the summary:

'The title itself makes me think that it's not going to be manipulated by the government to make things look better than they are... This [release] to me is a bit of actual fact. I believe what's written there. It's not somebody's opinion. It is fact so that means it is true, which

would make me believe it more than anything that comes out of anything government-led.' **49-year-old woman, lives in Scotland, work in social care.**

Generally, as also illustrated in some of the quotes above, the views of participants often evolved around their trust in the ONS as a source, especially to what extent ONS were seen to be associated with the government and politicians, and to what extent they were able to influence the figures. This is demonstrated by this participant who reflected on the independence of the ONS:

'Yeah, it was the Office for National Statistics, and yes, I trust that source. Although it is a government department, it is an independent government department, insofar as any government department can be totally independent. Obviously, I never feel any government department is totally independent because their paymasters are obviously the current party in power. So I always have some scepticism against figures that come from any department that's sort of essentially funded by government. But I do tend to believe the more independent figures, the direct departmental figures.' **60-year-old man, lives in North East, unemployed.**

When interview participants did express distrust in the alternative summaries, it was typically driven by a perceived association with government and politicians, and the belief or suspicion that they were able to manipulate the figures. For instance, this participant was cynical about the different categories used to measure unemployment and stated that this contributed to his distrust in the figures:

'It's manipulating the figures, because if you're working part-time, only a few hours a week, it's not a full-time job, and you would still be claiming Universal Credit. I personally [think there is less people in employment]. I think it is just the way the figures are presented. It looks like there's more people. You just paint a better picture for the Government.' **52-year-old man, lives in Cheshire, does not work due to long-term illness.**

Similarly, this participant said employment might be defined in ways that would benefit the government:

'There's no definition of what a job is. You know, under the old Soviet regime nobody was unemployed but you'd have two men on one wheelbarrow. So a job opening, is it flipping burgers, is it doing something that required skills or not? The Government is grateful for anything that looks remotely like a job so that the Chancellor can say so.' **70-year-old man, lives near Birmingham, retired civil servant.**

These suspicions could sometimes be triggered or affected by certain words or phrases. For instance, the *Labour Market Overview* that we tested in interviews started with the sentence: "the most recent data show the labour market continuing to recover." The choice of the word "recover" made one participant raise issues of distrust:

'When they're using terms like that, then is there an agenda to make people think that it is all positive and we are on the recovery. So does that then mean, as a result of that narrative, they pick positive stats to confirmation bias to feed into that narrative?' **35-year-old man, lives in Cheshire, works in social care.**

These suspicions were also reflected in comments displaying a general distrust in statistics, including the perception that it could be used to show anything, and references to the famous phrase "lies, damned lies, and statistics".

'Again with statistics, you can't really trust statistics, can you? So, it's like vague, it doesn't tell you exactly what people are doing.' **56-year-old woman, lives in Halifax, retired teacher.**

'I'd like to believe that we're all human and in it together and we're not being lied to about statistics or vaccines or COVID or Brexit, but I don't believe in the Party that we've got governing this country and I don't know if I trust them. So, I'm not too sure if I feel lied to when it comes to the economy, but I'm also not sure whether I trust them as well. I'm a bit, I'm on the fence a little bit. I don't know if that answers the question, but I don't think I can.' **42-year-old man, lives in London, self-employed electrician.**

'It's not that the statistics are wrong. I would say the Office for National Statistics is independent. I'm not saying they are wrong, who am I to say? You'd have to look into the way they do it. Who knows what they're doing behind the scenes there? It doesn't mean I don't trust them; I just mean that you know, you don't know how these, I mean there's statistics, statistics, and damn statistics, isn't there?... What I took from that was, there's 24.7% people not working. So, now, who are you trying to impress with that figure? Or wake up, if you like, get angry about?... What's the agenda? What do you want me to do? What are you trying to achieve with this?' **30-year-old man, lives in Manchester, works in mental health.**

Those broader comments about statistics were common, including before the participants were shown the summaries. It presents an inherent dilemma when communicating official economic statistics. While the source – the ONS as a source – is typically trusted by people, there are many doubts about statistics in general as well as external influences such as the government.

Chapter 4: Discussion and recommendations

Our interviews and online experiment both provided valuable learnings about how changes to the presentation of labour market information may influence comprehension of the information, engagement with statistics and trust in their accuracy. We also uncover many areas which would benefit from future research; continued testing and iteration of communication tools to use with the public will be critical to understanding what works.

Complexity of language

A common piece of feedback we heard in interviews about the existing labour market release was that it was too technical, difficult to absorb, and included language or terms that were deemed “jargon”. All of our alternative labour market summaries therefore were written using less complex, simpler language, as measured by Flesch-Kincaid reading grade scores, and avoided use of economic jargon wherever possible. The Simplified version made no other changes except for simplifying the language.

Results from our online experiment show that it is unlikely that simplifying language *alone* is enough to improve comprehension or trust in significant ways; there were no differences on these outcomes between the control version and the Simplified summary. However along with other changes, which we discuss in more detail below, it is likely a key prerequisite for communication of labour market statistics to non-technical audiences.

Findings from our interviews also demonstrated that participants liked that the alternative summaries were “quite simple to understand”, “easy to read”, and “written in a straightforward, easy to understand language”. This aligns with research on communications to the public from the Bank of England and the Behavioural Insights Team, which found that reducing the reading grade had a significant impact on understanding (Bholat et al., 2019).

Critically, reducing complexity of language is something that is fairly easy to do and implement. Given that we saw those that reported more frequent engagement with economic news and/or studying economics performed worse on comprehension in our survey, simplification of language in existing releases may also benefit more technical audiences whose comprehension of these subjects potentially should not be taken as a given.

Recommendations:

- **For both existing release and a separate one for the general public, the ONS should reduce the complexity of language by shortening sentences and replacing economic terms with plain language explanations.**
- **All producers and communicators of economic statistics could benefit from testing reading grade, using measures such as Flesch-Kincaid, ahead of publication, and aiming for reading grades of approximately Grade 9 (Year 10).⁸**

Length and amount of information

When shown the existing labour market release, interview participants often described it as being too long or containing too much information. For this reason, and to ensure that the

⁸ **NB: [GOV.UK standards recommend writing for a 9 year-old reading age](#)**, so further simplification to achieve reading grades below Grade 9 would further improve accessibility of text.

amount of content included in the summaries was feasible to test in an online experiment, we reduced the number of statistics from the existing labour market release we covered and removed additional information for the control version and all alternative summaries.

Therefore, we cannot quantify what impact reducing the content had on the outcomes of interest; however, based on qualitative research, we believe that focusing on a smaller number of core statistics that are seen as the most important to the general public, is critical.

Surprisingly, our online experiment showed that the length of the summary, measured by word count, was not always the most critical factor in determining whether people thought the summary contained too much information. The Methodology, Relatable, and Personas arms all had more words than the control version; however, significantly fewer participants in these arms thought the summary contained “too much information”. Perceptions of “too much information” is likely mediated by how easy people find the information to understand; therefore, shortening the summary indiscriminately may actually impede comprehension rather than improve it.

Providing additional information, including on methodology of data collection, or hours worked, may also help with improving trust in the statistics by correcting commonly held misconceptions. This was something we saw in the interviews; some participants were initially surprised about statistics, but then understood it better when it was explained or broken down. Finding out what these misconceptions are and communicating in ways that are aimed at correcting them could improve public understanding and trust.

Despite the fact that we shortened the summary and focused on fewer statistics across all versions we tested, some interview participants did still remark that the summaries were too long, and participants doubted whether they would read it all. Therefore, further shortening summaries intended for the general public could still be beneficial.

Recommendations:

- **For a general public labour market release, the ONS should:**
 - **Focus on the statistics that people most care about or are most relevant to peoples’ daily lives; both this research and previous suggest that with respect to the labour market, these are employment, unemployment, inactivity, vacancies and pay; this may require ongoing research with the public to understand changing needs and interests.**
 - **Draw on commonly held misconceptions and communicate information that may challenge these, such as around how data is collected, how many people are working on zero-hours contracts, or who is counted as “unemployed”.**
- **All producers and communications of economic statistics should keep summaries aimed at public to a reasonable length, but do not shorten indiscriminately, particularly if it means removing plain language description of terminology that is unlikely to be commonly understood.**

Structure and order of information

Our best performing summaries, Simplified + Structure and Methodology, both used a modified structure, compared to the Control and Simplified versions. While the Control and Simplified versions had most content in a “*Main points*” section, followed by all graphs and

then definitions, the Simplified + Structure and Methodology summaries, as well as the Relatable and Personas summaries broke down the content into subsections which each focused on a subject, e.g. “*How many people are working?*”, which contained definitions and graphs within that section.

Our interviews suggested that participants liked that the text was broken up with visuals and charts. For example, one participant said about one summary “it tended to have a bit of writing and then a nice little visual diagram, which is really good”.

The summaries structured like this outperformed the control version on nearly all metrics. We hypothesise that this improvement in performance across all outcome measures for these summaries was at least in part due to the fact that readers had relevant information such as definitions and figures when they were reading about it, which better suits how people take-in information and minimises the need for scrolling up and down to different sections of text.

We did get some qualitative feedback that this doesn’t work for more knowledgeable users; they found the definitions and explanations of content distracting. A more sophisticated and tailored approach may be to find ways of displaying information to only the people that want to know more see it.

Recommendations:

- **The ONS should split up content into “subjects” – e.g., unemployment, vacancies – rather than types of content – e.g., text, figures, definitions – to improve ease of reading for a general public targeted labour market summary**
- **The ONS should explore how content like figures and graphs could be displayed only to those that want to see them, e.g., by having definitions pop-up on hover, or a “click to see graph” option which expands the content.**
- **All producers and communications of economic statistics should break-up large blocks of text with paragraph breaks, white space, and other types of content, e.g., figures and graphs.**

Figures and numbers

In our interviews, we found that members of the public found the quantity and types of numbers in the existing release overwhelming and difficult to understand. There was also some confusion over the meaning of specific terms like “percentage points” and “pps”.

The interviews also uncovered mixed reactions to each type of visual or graph, and to the balance of visuals and text. Overall, it was clear that there is wide variation in preferences in how members of the general public would prefer to receive this information; therefore, any communication targeted at the general public will likely need to incorporate different elements such as text, numbers and charts. Our best performing summaries, Simplified + Structure and Methodology, included information presented in several different ways, including as text, line graphs, bar graphs, and structured tables. This diversity likely played a large role in the improvements in outcomes we saw in the online experiments for these summaries.

In the Relatable and Personas arms, we replaced these with infographics. While we got good qualitative feedback on the infographics, and these arms performed well on comprehension and engagement, they didn’t perform well on trust. One reason for this could

have been that the infographics were accompanied by a lot of text, potentially duplicating information & causing confusion.

Recommendations:

- **All producers and communicators of economic statistics, including the ONS with content targeted at the general public, should:**
 - **Use various types of graphs and visualisations within communications, to cater to people with different preferences.**
 - **Where graphs are used, add explanations about what they show in the form of arrows, captions or overlaid explanatory boxes to aid comprehension, rather than presenting graph on its own without context.**
- **The ONS should explore how different types of visuals and graphs improve comprehension for different types of users; we hypothesise that the use of infographics and diagrams may particularly help to explain concepts for people with limited numeracy skills.**

Labour market categories and definitions

When asked to categorise fictional people into whether they would be classed as unemployed, employed, or inactive; participants were able to answer roughly 3 in 4 questions correctly and we didn't see differences in performance for participants that saw a labour market summary, compared to those that didn't, nor between the different types of labour market summaries. This suggests that when prompted to think about it, people intuitively understanding the concepts of employed, unemployed and inactive, and can see a difference between those that are unemployed and those inactive.

Despite this, members of the general public find it hard to understand the definitions of these concepts outright, and may have been unfamiliar with some concepts entirely, such as economic inactivity.

To address this, all our treatment summaries looked to clarify these concepts by presenting them as binaries, which we thought would be a more intuitive way for non-technical readers to understand the concepts and how they relate to each other. We broke down the UK working age population into either in work or out of work, and then further breaking down these categories; for example, for out of work, we further broke this down into unemployed and inactive.

In some summaries that used this distinction (Simplified. Simplified + Structure, Methodology), there was actually a reduction in the number of people that could identify the unemployment rate and the Simplified + Structure summary reduced the number of people that could identify the definition of unemployment relative to the control version, suggesting this binary presentation of statistics may have "backfired" and introduced confusion.

However, this was not universally the case; the Relatable & Personas summaries also used this presentation and did not see a reduction in the number of people able to identify the unemployment rate. We hypothesise that the reason for this is that these summaries did a better job of explaining the relationships between two subjects by using infographics, which may have made the relationship between unemployment, employment, and inactivity more salient or easier to understand.

This research has further highlighted the difficulty in trying to communicate these topics to members of the public and that it is far from a simple task to explain what the figures are and why they are used. A potential area for future research is to test how diagrams and other visuals can help improve understanding where relationships between concepts is especially important.

Recommendations:

- **The ONS should build on concepts from the Relatability and Personas summaries to test different ways of contextualising and explaining the headline labour market metrics by using infographics or diagrams.**

Messenger and relatability

In the Bank of England/Behavioural Insights study (Bholat et al., 2019), the ‘Relatability’ treatment improved overall comprehension and trust relative to simplification alone. We don’t see this out-performance here. A possible explanation is that an important facet of the Bank’s monetary policy summary is to explain what different statistics such as inflation, economic growth and unemployment mean for the overall state of the economy, how this has influenced the Bank’s interest rate decision, and what this decision will mean for peoples’ lives. In contrast, the ONS releases actively avoid interpretation or commentary. As a result, our “relatable” version could not go far in explaining what the statistics mean for peoples’ daily lives.

Something else we did not explore in this research was whether members of the public would actually visit the ONS website to look for labour market information. In both interviews, and our online experiments, we were presenting the information to a group of people who were being paid to look at and consider the summaries. In reality, it seems unlikely that many people will seek out the ONS labour market communications unprompted, even one written for a public audience, on a regular basis. Therefore, additional research is likely needed into the channels and mechanisms through which to disseminate this information to reach a wider audience. Ultimately, the labour market information would have to be published and disseminated online to explore the uptake and engagement outside an online experiment.

Recommendations:

- **Consider channels and mechanisms through which to disseminate this information to reach a wider audience and drive greater engagement with the ONS.**

Types of users

This research provided some indication that there were differences in outcomes for different types of users. For example, in our online experiment, we saw that people who had studied economics or were more frequently engaged in economic news did significantly worse on comprehension, compared to participants who were less engaged or had not studied economics. We also saw that engagement was higher among those who were older, from London and had higher income.

What we haven't been able to do, due to sample size, is look into whether different summaries improved outcomes particularly for some groups. It could be the case that our summaries improved comprehension, engagement, and trust among those that were less engaged or trusting to begin with, or those with lower education. This would be a critical area of study in the future, as it would help to understand whether these types of communications might have the biggest impact on those groups most frequently left-out or disengaged, further emphasising the importance of tailored communications.

Recommendations:

- **The ONS should explore how alternative summaries work for people with different characteristics, e.g., levels of education, engagement with news, or trust in statistics, to identify the summary that works best for those users currently disengaged or with lowest levels of comprehension whose needs are currently the least served by existing summaries.**

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Online experiment, technical appendix

1 Methodology & experiment design

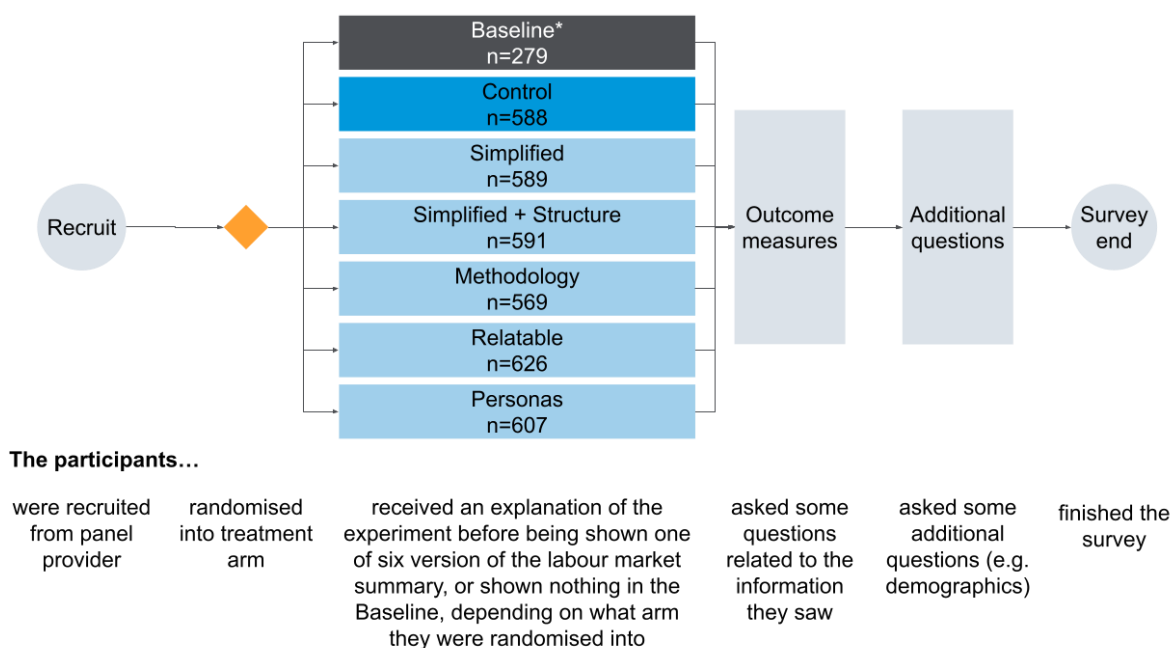
1.1 Implementation of the online experiment

The experiment was fully built and run on [Predictiv](#), BIT’s in-house online experimentation platform. Participants are recruited from a large international panel and are paid a fee for completing each experiment.

The experiment ran from 21 January to 1 February 2022. We recruited a final sample of 3,849 adults, broadly representative of the UK population on age, sex, household income, and (high-level) location.

The participant journey is outlined in Figure A.1. Following recruitment from the online panel provider, participants were randomised into an experiment arm, and then received an explanation of the experiment. Participants were shown one of six versions of the labour market summary or shown nothing if they were in the baseline arm. An overview of the summaries tested is described in the main report in [Chapter 1.2](#). Participants were then asked some questions about the summary before finishing the survey. While answering questions, participants were allowed to view the summary and there was no time limit; this set-up was chosen to better simulate how users would use the site in the real world.

Figure A.1: Participant journey



* Participants in the baseline group were not shown any summary

1.2 Outcome measures

To measure which labour market release performed best, we used several outcome measures.

Primary outcome: comprehension of the labour market information

Our primary outcome measure was comprehension of the labour market statistics. We asked 14 comprehension questions in total. Five questions asked participants to identify numbers or facts from the text, including the employment rate, unemployment rate, sector with highest vacancies, and how the number of vacancies and people in employment compared to before the pandemic. One question required participants to select the correct definition for unemployment. The remaining eight questions provided participants with a profile of an individual (e.g., “Louis, who has been made redundant and is looking for a new job.”) and required them to categorise them as employed, inactive, or unemployed.

We look at comprehension overall, looking at the percentage of questions (out of 14) that participants answered correctly. We also obtained a baseline comprehension score by asking the same questions to a group of participants who did not see any information.

Secondary outcomes: engagement and trust

Our secondary outcome measures are focused on engagement and trust.

To capture engagement, we combine results from two questions, which asked whether participants found the labour market release interesting, and if they thought it was important to understand our country. Because we are not testing in the real world, we’re unable to measure other markers of engagement, such as whether a user visits other pages for more information or if they visit the ONS site again in the future. However, these questions will give us some indication on whether participants generally found the material in the summaries relevant or interesting. Additional exploratory questions on how long participants spend reading the summary and whether they would visit the ONS again may also provide colour on engagement with the material in the summaries.

To understand how the labour market summaries influence trust, both in the statistics themselves and the ONS, we combine results from three survey questions, which asked whether participants thought the labour market statistics they saw were accurate, (not) politically influenced, and helps them to understand what they or friends/family experience in the real world. This was based on previous ESCoE research that found members of the public felt that statistics could be manipulated by the government and/or were not accurate.

Exploratory outcomes

Finally, we asked participants a number of other questions and collected data that provides additional detail or insight on participants comprehension, engagement and trust. These include:

- **Time spent looking at the web page and completing comprehension questions:** recorded in seconds on Predictiv. We will collect data on the time spent looking at each webpage, including the time spent while answering the comprehension questions, to provide insight on whether participants spent more or less time finding the information to answer the comprehension questions

- **Perceived ease of understanding:** this is the % of participants who think the information was ‘moderately’ or ‘very’ easy to understand
- **Intentions to search the ONS website for labour market information:** this is the % of people who, if they wanted to know something about the labour market, would search for the ONS over other sources (including online news articles, newspapers, google, the government website, social media or asking friends or family).
- **Would recommend to a friend:** % of participants who say they would recommend this labour market release to a friend.
- **Has right amount of information:** % of participants who say they think the labour market release has the right amount of information (rather than too little or too much)

1.3 Sample & attrition

We registered 6,089 unique participants. 11.5% failed our early-stage attention check and were immediately removed from the experiment. A further 25% dropped out after seeing the labour market release. This dropout rate was not unexpected considering this was an online experiment and the task required a high level of attention. Therefore, we removed this data without any imputation.

We tested for differential attrition from those who dropped out of the trial, we ran a linear probability model of the form:

$$P(\text{completed} \mid \text{seen materials})_i = \alpha + \beta_1 \text{Treatment} + \varepsilon_i$$

Table A.1: Check of differential attrition, compared to the control arm which had a 72% completion rate.

(n=5,160; no multiple comparison corrections required)

	Coefficient	Std. error	p-value
Intercept (Control)	0.717	0.015	
Simplified	0.012	0.021	0.579
Simplified + Structure	0.017	0.021	0.425
Methodology	0.007	0.022	0.751
Relatability	0.034	0.021	0.114
Persona	0.020	0.021	0.337
No summary (baseline)	0.265	0.030	0.000**

Table A.1 shows the results of this attrition check. Participants in the baseline arm, who did not see any summary were significantly more likely to complete the experiment than the control arm. Their task was somewhat less effortful compared to participants who were asked to read a labour market release, so this was not unexpected. Otherwise, there were no differences in dropout rates after seeing a treatment summary compared to the control. Figure A.2 provides a CONSORT diagram showing the flow of how participants dropped out of this experiment.

Table A.2 below shows all participant characteristics are balanced across treatments with no significant differences between arm at the 5% level (chi-squared test). We recognise that our control arm has more ethnic minority participants than our other treatment arms (22% vs 16% respectively). This is a function of randomisation rather than differential attrition in this arm; the control arm had slightly more ethnic minority respondents than the treatment arms even before we removed participants for failing the attention check or for not completing the survey.

We also find that the baseline tended to be more engaged with economics than the treatment arms. Considering only 5 participants dropped out of the experiment after seeing the comprehension questions, it is unlikely that this difference is a result of differential attrition, rather than randomisation.

We control for all of these covariates in our analysis and therefore can be confident that these slight imbalances do not threaten the validity of our results.

Figure A.2: A CONSORT flow diagram showing how participants dropped out of the trial at each stage

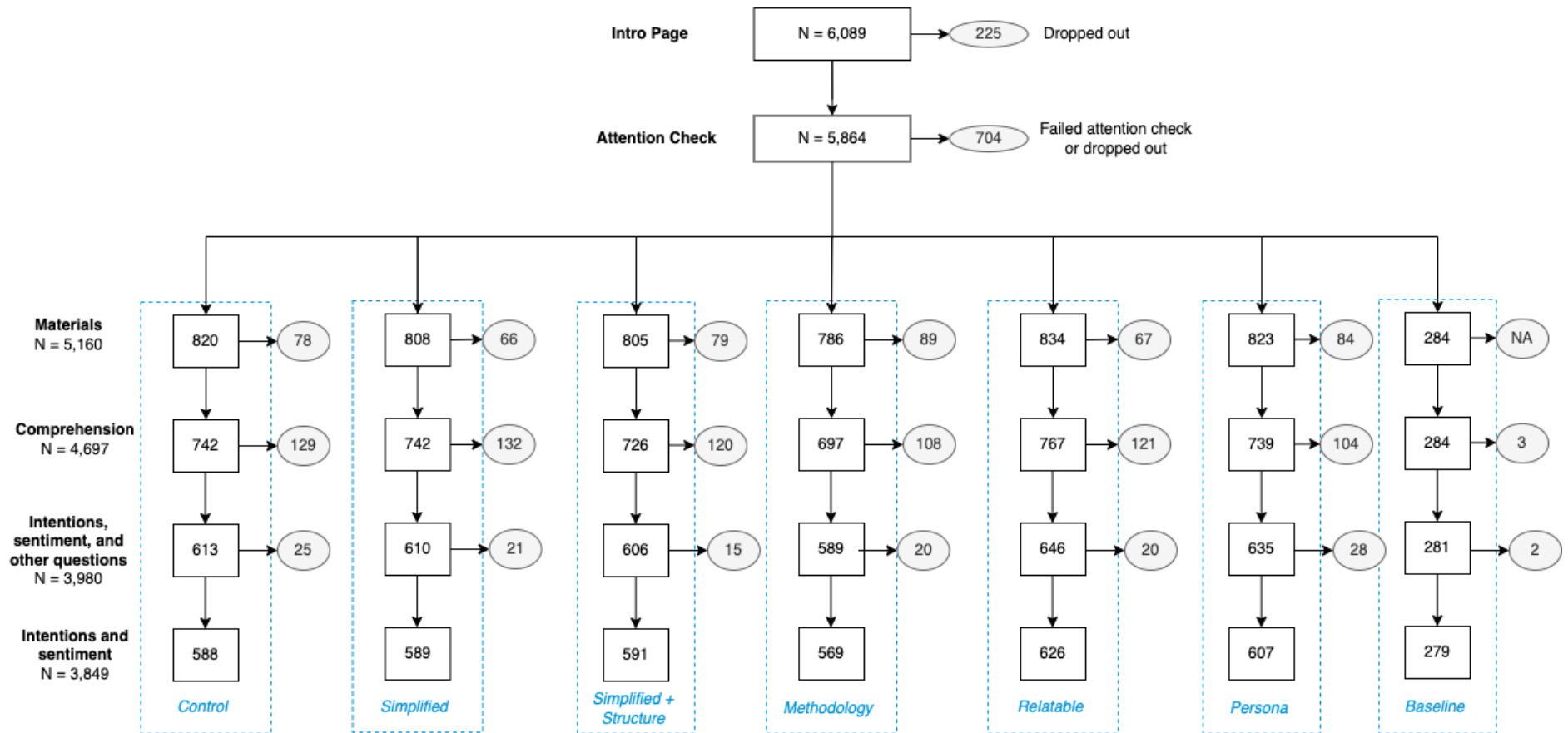


Table A.2: Participant characteristics and balance checks. All chi-squared tests are testing for independence across all arms (including the baseline arm). Where there was significant difference across arms, we used a second chi-squared test across participants who saw a labour market release only.

	Full sample (n=3,849)	Control (n=588)	Simplified (n=589)	Simplified + Structure (n=591)	Methodology (n=569)	Relatable (n=626)	Persona (n=607)	Baseline (n=279)
Total sample (n=3,849; excludes baseline)	-	15%	15%	15%	15%	16%	16%	7%
Gender	$\chi^2 (12) = 13.85, p\text{-value} = 0.311$							
Female (n=2,016)	52%	53%	51%	56%	49%	52%	52%	53%
Male (n=1,789)	46%	45%	49%	43%	49%	46%	46%	46%
Other (n=44)	1%	1%	0%	1%	2%	1%	1%	1%
Age	$\chi^2 (12) = 7.86, p\text{-value} = 0.7962$							
18-24 (n=516)	13%	15%	12%	13%	14%	12%	14%	14%
25-54 (n=2,074)	54%	53%	54%	53%	55%	55%	53%	51%
55+ (n=1,259)	33%	31%	34%	34%	30%	33%	33%	35%
Household income	$\chi^2 (6) = 5.27, p\text{-value} = 0.510$							
Less than £30,000 (n=1,978)	50%	50%	52%	47%	49%	50%	52%	53%
More than £30,000 (n=1,911)	50%	50%	48%	53%	51%	50%	48%	47%
Location	$\chi^2 (24) = 11.70, p\text{-value} = 0.983$							
London (n=487)	13%	14%	12%	12%	13%	13%	12%	12%
Midlands (n=61)	16%	16%	16%	15%	15%	17%	17%	15%
North (n=892)	23%	22%	25%	23%	24%	23%	23%	22%
South & East (n=1,133)	29%	30%	27%	31%	31%	29%	29%	29%
Wales, Scotland & N.Ireland (n=723)	19%	18%	20%	19%	18%	18%	18%	22%

Table A.2: Participant characteristics and balance checks. All chi-squared tests are testing for independence across all arms (including the baseline arm). Where there was significant difference across arms, we used a second chi-squared test across participants who saw a labour market release only.

Race								
								$\chi^2 (18) = 31.32, p\text{-value} = 0.026^*$
								$[\chi^2 (15) = 24.49, p\text{-value} = 0.057^+ \text{ when excluding baseline}]$
White (n=3,196)	83%	78%	82%	85%	85%	84%	82%	88%
Black (n=167)	9%	11%	9%	10%	8%	8%	9%	6%
Asian (n=339)	4%	4%	5%	3%	4%	5%	5%	4%
Other ethnic minority (n=147)	4%	7%	4%	3%	3%	4%	3%	2%
Education level								
								$\chi^2 (12) = 11.29, p\text{-value} = 0.504$
No degree (n=2,680)	70%	71%	67%	70%	69%	70%	69%	73%
Degree (n=1,108)	29%	27%	32%	29%	29%	28%	29%	25%
Prefer not to say (n=61)	2%	2%	1%	1%	2%	1%	2%	1%
Employment status								
								$\chi^2 (12) = 9.98, p\text{-value} = 0.618$
Employed (n=2,542)	66%	67%	64%	63%	68%	67%	66%	67%
Economically inactive / Other (n=1,016)	26%	26%	27%	30%	25%	26%	26%	23%
Temporarily unemployed (n=291)	8%	7%	9%	7%	7%	7%	8%	10%
Engagement with economics and business news								
								$\chi^2 (6) = 11.93, p\text{-value} = 0.064^+$
								$[\chi^2 (5) = 3.37, p\text{-value} = 0.644 \text{ when excluding baseline}]$
Once a week or more (n=1,814)	47%	46%	44%	48%	47%	45%	48%	56%
Less than once a week (n=2,035)	53%	54%	56%	52%	53%	55%	52%	44%
Previous study of economics (or similar)								
								$\chi^2 (6) = 3.00, p\text{-value} = 0.809$
Yes (n=1,081)	28%	28%	27%	29%	26%	29%	29%	28%
No (n=2,768)	72%	72%	73%	71%	74%	71%	71%	72%

1.4 Analysis strategy

Primary analysis

We modelled the primary outcome with OLS regressions to test the effect of our treatments on comprehension. We used a model with treatment, standard covariates (A: age, gender, income, region, race, education, employment) and custom covariates (Cov: engagement with economic news, previous study of economics). We corrected for 6 multiple comparisons (1 per treatment arm + baseline arm) using the Benjamini Hochberg procedure.

$$\text{Equation 1a: } \text{Comprehension}_i = \alpha + \beta_1 \text{Arm}_i + \beta_2 A + \beta_3 \text{Cov} + \varepsilon_i$$

Where:

- Comprehension_i is treated as a continuous variable representing the percentage of questions answered correctly.
- Arm_i is a factor variable corresponding to the treatment assignment of participant i (including the baseline arm).
- A and Cov are the vectors of covariates as defined in the above paragraph, and
- β_2 and β_3 are the vectors of coefficients associated with covariates A and Cov , respectively.

In all these models, the error term will be estimated using the Huber-White method for heteroskedastic robust errors.

Secondary analysis

We modelled our secondary outcomes with OLS regressions to test the effect of our treatments on engagement (whether participants think information is interesting/important) and trust (in the statistics and the ONS itself). We corrected the secondary analysis for 10 comparisons (5 treatment arms x 2 secondary outcomes).

$$\text{Equation 2a: } \text{Secondary Outcome}_i = \alpha + \beta_1 \text{Arm}_i + \beta_2 A + \beta_3 \text{Cov} + \varepsilon_i$$

Where:

- $\text{Secondary Outcome}_i$ is treated as a continuous variable representing our engagement and trust outcomes.
- Arm_i is a factor variable corresponding to the treatment assignment of participant i (including the baseline arm for intentions only).
- A and Cov are the vectors of covariates as defined in the above paragraph, and
- β_2 and β_3 are the vectors of coefficients associated with covariates A and Cov , respectively.

In all these models, standard errors were estimated using the Huber-White method.

Exploratory outcomes

We modelled our exploratory outcomes (described above) with OLS regressions. We did **not** correct for multiple comparisons in our exploratory analyses.

Equation 4a: $Y_i = \alpha + \beta_1 Arm_i + \beta_2 A + \beta_3 Cov + \varepsilon_i$

Where:

- Y_i are continuous variables representing either:
 - Time spent looking at web page and answering comprehension questions (in minutes)
 - Perceived ease of understanding, % who say that information in the labour market release is moderately or very easy to understand
 - % who, if they wanted to know something about the labour market, would search for the ONS over other sources
 - % who would recommend the webpage to a friend
 - % who think the webpage has right amount of information
 - % who think journalists, politicians, themselves, and others should know about labour market statistics (analysed separately)
- Arm_i is a factor variable corresponding to the treatment assignment of participant i (excluding the baseline arm).
- A and Cov are the vectors of covariates as defined in the above paragraph, and
- β_2 and β_3 are the vectors of coefficients associated with covariates A and Cov , respectively.

In all these models, the error term will be estimated using the Huber-White method for heteroskedastic robust errors.

2 Results

In this section, we first discuss comprehension of the summaries. We then show how participant engagement and trust varied across the different labour market summaries.

2.1 Comprehension

2.1.1 Overall comprehension was highest among participants who saw the Simplified + Structure, Methodology, Relatable and Personas labour market summaries

First, we discuss our primary outcome measure, overall comprehension. This is a combined score across 14 questions total. 5 of these 14 questions were identifying numbers from the text and the remaining 9 were more applied understanding questions (as specified in section 1.2.3). Mean comprehension across all questions was 67% (sd = 24.6%).

Table A.3 below summarises the results of the linear regression. This is the pre-specified model (equation 1a, section 1.2.5.). Considering we have 1 primary outcome variable, 6 experimental arms and the baseline, we have corrected for 6 multiple comparisons.

Overall, participants who saw the Simplified + Structure, Methodology, Relatable and Personas summaries performed significantly better than those who saw the control version, by 3.1 to 3.7 percentage points. This is also shown in Figure A.3. This is equivalent to participants in these arms answering 0.5 more questions right on average (out of 14) than those in the control arm.

As expected, participants who saw any labour market release significantly outperformed those who did not see any information.

Equation 1a:
$$Comprehension_i = \alpha + \beta_1 Arm_i + \beta_2 A + \beta_3 Cov + \varepsilon_i$$

A.3: Regression table for the primary outcome: comprehension of all 14 items (%), compared to the control arm, which had an average comprehension score of 65%.

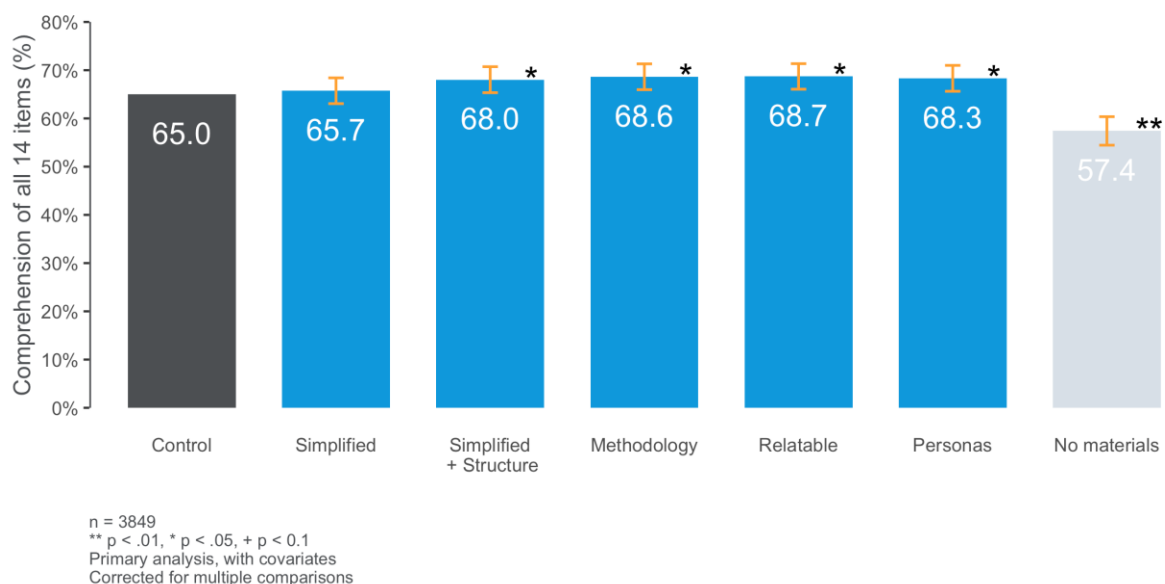
	Treatment effect compared to the control arm (regression coefficient) (change in comprehension score; 0.01 means 1 percentage point)						
	Constant (Control)	Simplified	Simplified + Structure	Methodology	Relatable	Persona	No summary
Coefficient (Robust standard errors)	0.505 (0.020)	0.008 (0.014)	0.031* (0.014)	0.037* (0.014)	0.037* (0.014)	0.033* (0.014)	-0.076** (0.015)
Covariates	Yes						
Adjusted R ²	0.098						
Observations	3849						

** p < 0.1, * p < 0.05, + p < 0.1

Covariates include age, gender, income, region, race, education, employment, engagement with economics and previous study of economics.

Corrected for multiple comparisons.

Figure A.3: Comprehension of all 14 items for each summary, compared to the control arm



2.1.2 People that performed better on comprehension overall tended to be female, older, and more educated; people who had previously studied economics or read economic news more frequently performed worse

We then looked at associations between covariates and our primary outcome (Table A.4); this tells us how different groups of people performed on the comprehension questions on average. We exclude baseline results here on account of imbalance between this arm and those that saw summaries and, and on account of the baseline group not having seen any summary. These are exploratory analyses, and as such we don't correct for multiple comparisons.

People that performed better were more likely to be female (7pp higher than male), older (aged 55+ 15pp higher than those aged 18-24), white, economically inactive, and have higher income and a degree.

People that reported being more engaged with economic news or having previously studied economics performed 5-7 percentage points worse than those without such background. As will be discussed in the next section, people who reported being more engaged with economic news spent approximately 1 minute less reviewing the summaries and answering the questions, while those who previously studied economics spent 45 seconds less. This could be a result of overconfidence, with participants thinking they understand labour market statistics more than they do, and so not engaging with the summaries as much.

Table A.4: Associations between total comprehension (%) and the covariates. p-values are the results of univariate linear regressions with Huber White standard errors

	Total Comprehension (%)	p-value	Significantly different from the top category within the group?
Total sample (n=3,570; excludes baseline)	68%		
Gender (Regression Model 1)			
Female (n=1,868)	71%		
Male (n=1,660)	64%	p < 0.01**	Yes
Other (n=42)	59%	p < 0.01**	Yes
Age (Regression Model 2)			
18-24 (n=477)	59%		No
25-54 (n=1,932)	66%	p < 0.01**	Yes
55+ (n=1,161)	74%	p < 0.01**	Yes
Household income (Regression Model 3)			
Less than £30,000 (n=1,789)	66%		
More than £30,000 (n=1,781)	69%	p < 0.01**	Yes
Location (Regression Model 4)			
London (n=453)	62%		
Midlands (n=573)	67%	p < 0.01**	Yes
North (n=830)	67%	p < 0.01**	Yes
South & East (n=1,052)	71%	p < 0.01**	Yes
Wales, Scotland & N.Ireland (n=662)	70%	p < 0.01**	Yes
Race (Regression Model 5)			
White (n=2,951)	69%		
Black (n=155)	61%	p < 0.01**	Yes
Asian (n=323)	62%	p < 0.01**	Yes
Other ethnic minority (n=141)	63%	p < 0.01**	Yes
Education level (Regression Model 6)			
No degree (n=2,475)	67%		
Degree (n=1,037)	70%	p < 0.01**	Yes
Prefer not to say (n=58)	55%	p < 0.01**	Yes
Employment status (Regression Model 7)			
Employed (n=2,355)	67%		
Economically inactive / Other (n=951)	70%	p < 0.01**	Yes
Temporarily unemployed (n=264)	66%	p > 0.1	No
Engagement with economics and business news (Regression Model 8)			
Once a week or more (n=1,659)	65%		
Less than once a week (n=1,911)	70%	p < 0.01**	Yes
Previous study of economics (or similar) (Regression Model 9)			
Yes (n=1,004)	63%		
No (n=2,566)	70%	p < 0.01**	Yes

** p < 0.1, * p < 0.05, + p < 0.1

2.1.3 Increases in overall comprehension were driven by increases in participants ability to identify information in the text; there were no statistically significant differences in *applied* comprehension across trial arms

Table A.5 below summarises the descriptive means across each arm for their overall comprehension scores, and separately for the 5 identification- and 9 applied-comprehension questions. The green shading in this table denotes values which are statistically significantly higher than the control, while red shading denotes values which are statistically significantly lower than the control, at the 5% significance level. This is exploratory analysis, and these are not corrected for multiple comparisons.

Decomposing the comprehension results by separately examining the identification and applied comprehension outcomes reveals that, while some treatment summaries did produce better overall comprehension, this effect was driven entirely by improvement on the 'identification' outcomes, and not the applied ones.

Identification comprehension questions

Specifically, the average comprehension of the identification outcomes was 58%. We see significant differences in performance for identification outcomes for participants who saw the Simplified + Structure, Methodology, Relatable and Personas summaries compared to the control (Table A.6). These summaries increased the proportion of facts participants were able to identify by 5-7 percentage points (the equivalent of moving from getting 2.75 questions correct in the control arm, to getting ~3 questions correct in the higher performing treatment arms).

Participants who did not see any labour market release performed significantly worse than all arms, with these participants answering only 36% of the questions correctly compared to 55% among those that saw the control version.. This suggests that baseline knowledge of these labour market statistics is low.

Table A.6 below displays the breakdown of the identification outcomes by individual questions. Most notably:

1. Simplified + Structure, Methodology, and Relatable summaries each resulted in a statistically significant increase in the proportion of people able to identify how employment has changed since the pandemic, the employment rate, and industries with the most vacancies.
2. The Simplified and Personas summaries also improved comprehension on some of these outcomes.
3. The Simplified, Simplified + Structure and Methodology summaries *reduced* the proportion of people able to identify the unemployment rate. These summaries presented the headline employment figures as people-in-work vs. people-out-of-work, which may have introduced some confusion between people-out-of-work and unemployment. However, the Relatable summary also presented the headline figure as people-in-work vs. people-out-of-work without this impacting on comprehension of the unemployment rate; there was no statistically significant difference on this question compared to the control.

Applied comprehension questions

On average, participants' average comprehension of applied outcomes was 72%. On these outcomes, there was no significant difference between participants who saw any labour market release and those who did not see any information, nor between any of the treatment summaries and control (Table A.7).

Table A.7 below displays the breakdown of the applied outcomes by individual questions. Most notably:

1. The proportion of people getting the question right was significantly higher in the baseline arms than the control for three questions ("Knew someone who had quit their job and was looking for a new one was unemployed", "Knew someone who is working part-time is employed" and "Knew someone who works 10 hours per week is employed"). This suggests that seeing the labour market summaries may have actually introduced some confusion for participants in identifying who was classified as employed, unemployed or inactive.
2. People who saw the Simplified + Structure and Baseline summaries were less able to identify the correct definition of unemployment. People that saw the Personas summary were best at recognising who was economically inactive, especially for carers and students.

Table A.5: Overview of comprehension outcome, split by identification and applied outcomes. Green (red) shading indicates values statistically significantly higher (lower) than the control arm, at the 5% significance level. Not corrected for multiple comparisons

	Control (n=588)	Simplified (n=589)	Simplified + Structure (n=591)	Methodology (n=569)	Relatable (n=626)	Persona (n=607)	Baseline (n=279)
Overall comprehension score	65%	66%	69%	69%	69%	69%	58%
Average of identification outcomes	55%	58%	62%	62%	62%	60%	36%
Average of applied outcomes	70%	71%	73%	73%	73%	73%	70%

Table A.6: Overview of identification outcomes. Green (red) shading indicates values statistically significantly higher (lower) than the control arm, at the 5% significance level. Not corrected for multiple comparisons

% who	Control (n=588)	Simplified (n=589)	Simplified + Structure (n=591)	Methodology (n=569)	Relatable (n=626)	Persona (n=607)	Baseline (n=279)
Average of 5 identification outcomes	55%	58%	62%	62%	62%	60%	36%
Knew there are fewer people in work now than before the pandemic	58%	63%	72%	69%	69%	67%	52%
Knew that are 75% of working age adults are employed	57%	70%	77%	77%	70%	71%	26%
Knew the number of job vacancies in the UK were higher now than before the pandemic	65%	64%	68%	69%	66%	65%	44%
Knew the 3 industries with the most job vacancies	43%	50%	55%	53%	53%	48%	28%
Knew the unemployment rate was 4.3%	52%	44%	40%	42%	55%	47%	31%

Table A.7: Overview of applied outcomes. Green (red) shading indicates values statistically significantly higher (lower) than the control arm, at the 5% significance level. Not corrected for multiple comparisons

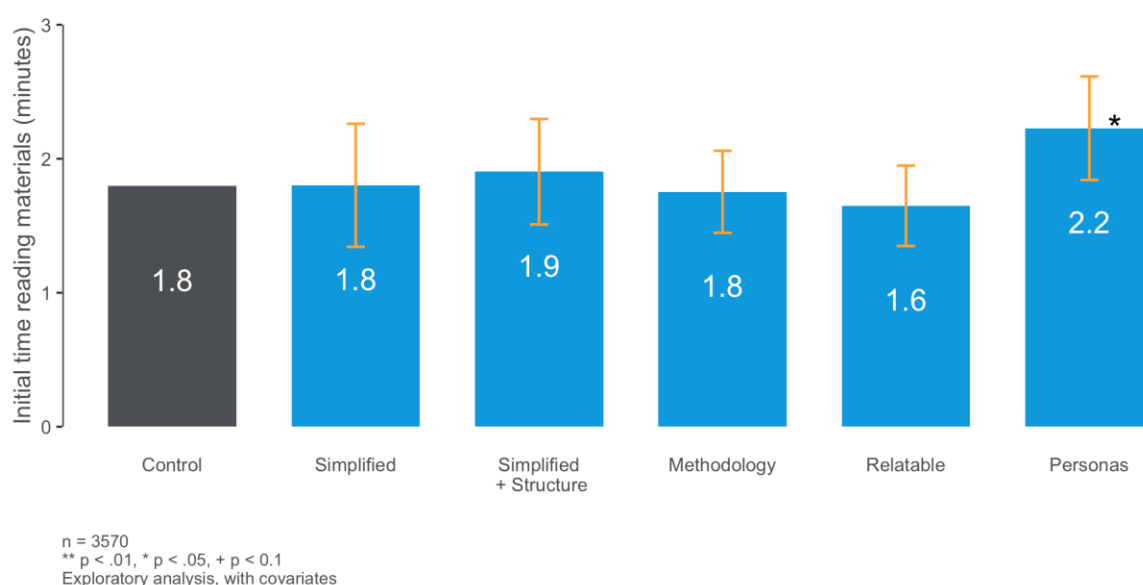
% who	Control (n=588)	Simplified (n=589)	Simplified + Structure (n=591)	Methodology (n=569)	Relatable (n=626)	Persona (n=607)	Baseline (n=279)
Average of 9 applied outcomes	70%	71%	73%	73%	73%	73%	70%
Knew definition of 'unemployment'	49%	49%	43%	45%	49%	48%	29%
Knew 'someone who had quit their job and was looking for a new one' was unemployed	81%	82%	83%	85%	84%	82%	88%
Knew 'someone who had been made redundant and is looking for a job' was unemployed	81%	82%	84%	83%	82%	81%	85%
Knew 'someone who is disabled and not looking for work' is economically inactive	73%	71%	75%	74%	74%	74%	69%
Knew a full-time carer is economically inactive	57%	58%	64%	62%	61%	69%	54%
Knew a full-time student is economically inactive	55%	60%	62%	61%	64%	66%	56%
Knew 'someone who is 63 years old and retired' is economically inactive	74%	72%	73%	74%	75%	75%	68%
Knew 'someone who is working part-time' is employed	82%	84%	86%	83%	85%	83%	89%
Knew 'someone who works 10 hours per week' is employed	81%	81%	86%	85%	82%	83%	89%

2.1.4 Average time reading the summaries was highest for the Personas summary; participants who saw the Relatable summary answered questions the fastest

We were also interested in whether time spent reading the summaries or answering comprehension questions would be impacted by the labour market release that people saw.

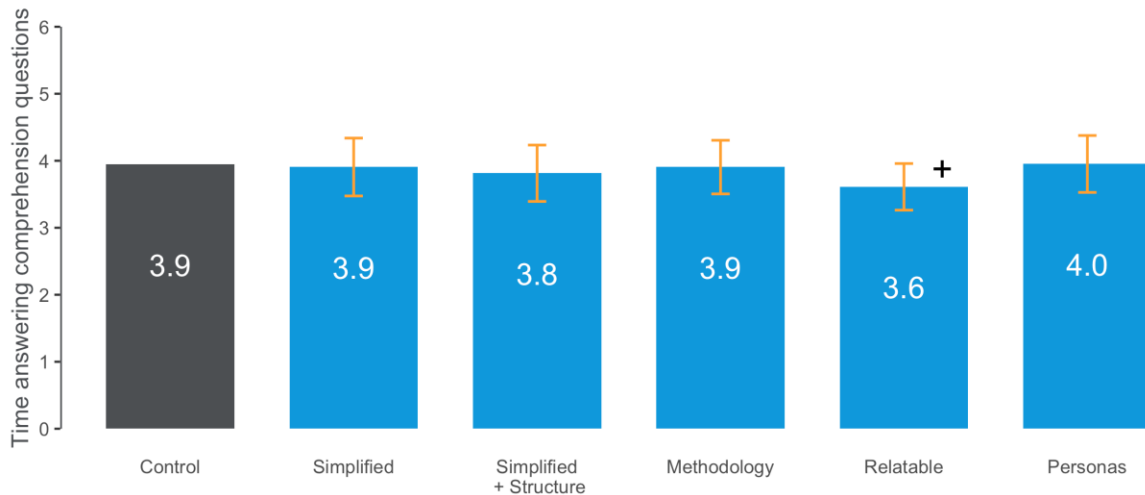
The average time that people spent reading the summaries when initially shown was 1 minute 50 seconds. The only summary that saw a significant difference in viewing time from control was the Personas arm; people in this arm spent an additional 26 seconds reading (statistically significant at 5%) (Figure A.4). This summary was the longest in terms of word count, so this is not an unexpected result.

Figure A.4: Average time spent reading each summary, compared to the control version



The average time that people spent answering the comprehension questions was 3 minutes and 50 seconds. In the Relatable summary, participants spent approximately 20 seconds fewer answering questions than in the control, statistically significant at 10% (Figure A.5). The Relatable summary performed best on comprehension, particularly identification questions, suggesting that this summary made it easiest for people to understand and quickly find information.

Figure A.5: Average time spent answering the comprehension questions for each summary, compared to the control version



n = 3570
 ** p < .01, * p < .05, + p < 0.1
 Exploratory analysis, with covariates

There were significant differences in terms of how much time different participants put into reviewing the summaries and answering questions in total (Table A.8). Those who spent more time tended to be female, older, Black and have lower income.

Those who claimed to be more engaged with economic news or have studied economics spent less time viewing the summaries. As we discussed above, these participants tended to do worse on comprehension questions overall.

Table A.8: Associations between time spent viewing summaries and answering the questions (minutes) and the covariates. p-values are the results of univariate linear regressions with Huber White standard errors

	Total time viewing and answering (minutes)	p-value	Significantly different from the top category within the group?
Total sample (n=3,570; excludes baseline)	5.7		
Gender (Regression Model 1)			
Female (n=1,868)	6.2		
Male (n=1,660)	5.2	p < 0.01**	Yes
Other (n=42)	3.8	p < 0.01**	Yes
Age (Regression Model 2)			
18-24 (n=477)	3.8		No
25-54 (n=1,932)	5.3	p < 0.01**	Yes
55+ (n=1,161)	7.2	p < 0.01**	Yes
Household income (Regression Model 3)			
Less than £30,000 (n=1,789)	6.0		
More than £30,000 (n=1,781)	5.4	p < 0.01**	Yes
Location (Regression Model 4)			
London (n=453)	5.8		
Midlands (n=573)	6.1	p > 0.1	No
North (n=830)	5.4	p > 0.1	No
South & East (n=1,052)	5.9	p > 0.1	No
Wales, Scotland & N.Ireland (n=662)	5.5	p > 0.1	No

Table A.8: Associations between time spent viewing summaries and answering the questions (minutes) and the covariates. p-values are the results of univariate linear regressions with Huber White standard errors

	Total time viewing and answering (minutes)	p-value	Significantly different from the top category within the group?
Race (Regression Model 5)			
White (n=2,951)	5.6		
Black (n=155)	7.9	p < 0.01**	Yes
Asian (n=323)	5.2	p < 0.1+	Yes
Other ethnic minority (n=141)	6.2	p > 0.1	No
Education level (Regression Model 6)			
No degree (n=2,475)	5.7		
Degree (n=1,037)	5.7	p > 0.1	No
Prefer not to say (n=58)	5.0	p > 0.1	No
Employment status (Regression Model 7)			
Employed (n=2,355)	5.3		
Economically inactive / Other (n=951)	6.5	p < 0.01**	Yes
Temporarily unemployed (n=264)	6.6	p < 0.01**	Yes
Engagement with economics and business news (Regression Model 8)			
Once a week or more (n=1,659)	5.2		
Less than once a week (n=1,911)	6.2	p < 0.01**	Yes
Previous study of economics (or similar) (Regression Model 9)			
Yes (n=1,004)	5.2		
No (n=2,566)	5.9	p < 0.01**	Yes

** p < 0.01, * p < 0.05, + p < 0.1

2.1.5 All treatment summaries increased the percentage of people reporting that the information was easy to understand, with Simplified + Structure, Methodology, Relatable and Personas summaries causing the biggest difference

On average, 69% of participants thought the labour market release was easy to understand. All treatment summaries show a statistically significant increase in the proportion of people who claimed it was either “moderately” or “very” easy to understand over the control version (Figure A.6).

Simplified + Structure, Methodology, Relatable and Personas summaries each increased perceived ease of understanding by approximately 13-14 percentage points, a result that is statistically significant at 1%. This is consistent with the results we found looking at overall comprehension; the summaries that participants perceive as being easy to understand also resulted in better comprehension.

Table A.9 outlines associations between demographic characteristics and reporting that the information was easy to understand. Similar to the previous sections, those who report engaging more frequently with economic statistics and/or have studied economics, are more likely to claim they thought the information was easy to understand, despite the fact that they generally performed worse on comprehension metrics.

People with higher income, more education and who are employed also think the information is easier to understand.

Figure A.6: % who think the information is easy to understand for each summary, compared to the control version

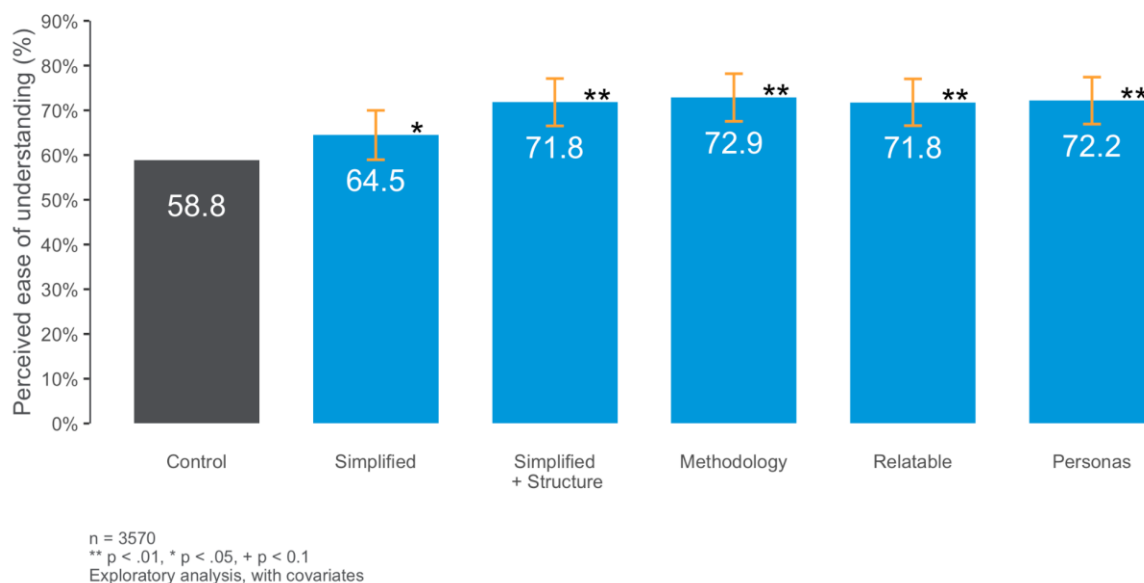


Table A.9: Associations between ease of understanding and the covariates. p-values are the results of univariate linear regressions with Huber White standard errors

	Perceived ease of understanding (%)	p-value	Significantly different from the top category within the group?
Total sample (n=3,570; excludes baseline)	69%		
Gender (Regression Model 1)			
Female (n=1,868)	69%		
Male (n=1,660)	70%	p > 0.1	No
Other (n=42)	50%	p < 0.05*	Yes
Age (Regression Model 2)			
18-24 (n=477)	64%		No
25-54 (n=1,932)	69%	p < 0.1+	Yes
55+ (n=1,161)	71%	p < 0.01**	Yes
Household income (Regression Model 3)			
Less than £30,000 (n=1,789)	65%		
More than £30,000 (n=1,781)	73%	p < 0.01**	Yes
Location (Regression Model 4)			
London (n=453)	71%		
Midlands (n=573)	69%	p > 0.1	No
North (n=830)	68%	p > 0.1	No
South & East (n=1,052)	68%	p > 0.1	No
Wales, Scotland & N.Ireland (n=662)	69%	p > 0.1	No
Race (Regression Model 5)			
White (n=2,951)	69%		

Table A.9: Associations between ease of understanding and the covariates. p-values are the results of univariate linear regressions with Huber White standard errors

	Perceived ease of understanding (%)	p-value	Significantly different from the top category within the group?
Black (n=155)	69%	p > 0.1	No
Asian (n=323)	70%	p > 0.1	No
Other ethnic minority (n=141)	69%	p > 0.1	No
Education level (Regression Model 6)			
No degree (n=2,475)	67%		
Degree (n=1,037)	76%	p < 0.01**	Yes
Prefer not to say (n=58)	48%	p < 0.01**	Yes
Employment status (Regression Model 7)			
Employed (n=2,355)	70%		
Economically inactive / Other (n=951)	67%	p < 0.05*	Yes
Temporarily unemployed (n=264)	65%	p < 0.1+	Yes
Engagement with economics and business news (Regression Model 8)			
Once a week or more (n=1,659)	74%		
Less than once a week (n=1,911)	65%	p < 0.01**	Yes
Previous study of economics (or similar) (Regression Model 9)			
Yes (n=1,004)	76%		
No (n=2,566)	66%	p < 0.01**	Yes

** p < 0.01, * p < 0.05, + p < 0.1

2.2 Engagement

One of our two secondary outcome measures was engagement - we measured this as the percentage of participants who thought the labour market release was moderately or very interesting and/or important to understand the country. We saw an average engagement score of 67% (sd = 39%). Participants in the baseline were not asked these questions as the questions referenced information they saw; therefore, participants from the baseline are not included in these analyses.

Table A.10 below summarises the results of the linear regression presented below. This is the pre-specified model (equation 2a, [section 1.2.5](#)). Considering we have 2 secondary outcome variables, and 6 experimental arms (5 treatment), we have corrected for 10 multiple comparisons.

$$\text{Equation 2a: } Engagement_i = \alpha + \beta_1 Arm_i + \beta_2 A + \beta_3 Cov + \varepsilon_i$$

Table A.10: Regression table for the secondary outcome: engagement score (%), compared to the control arm with an average engagement score of 61.7%

	Treatment effect compared to the control arm (regression coefficient) (change in engagement score; 0.01 means 1 percentage point)					
	Constant (Control)	Simplified	Simplified + Structure	Methodology	Relatable	Persona
Coefficient (Robust standard errors)	0.618 (0.033)	0.051* (0.023)	0.065** (0.022)	0.079** (0.023)	0.051* (0.022)	0.074** (0.022)
Standard covariates	Yes					
Custom covariates	Yes					
Adjusted R ²	0.050					
Observations	3,570					

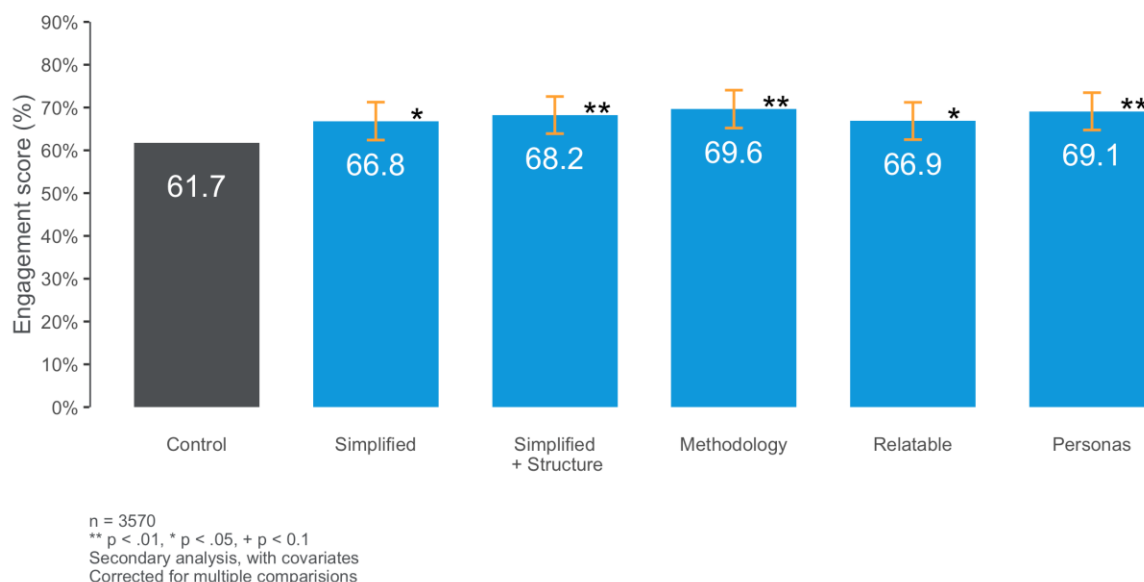
** p < 0.1, * p < 0.05, + p < 0.1

2.2.1 All treatment summaries caused statistically significant increases in engagement compared to the control version

All treatment summaries resulted in a statistically significant increase in engagement over the control of 5 to 8 percentage points. The Simplified and Relatable summaries had the smallest effect sizes of 5.1 and 5.2 percentage points respectively, both statistically significant at 5%.

The largest effect sizes were in the Methodology, Persona, and Simplified + Structure arms, where engagement was 7.9, 7.4 and 6.5 percentage points greater, all statistically significant at 1%

Figure A.7: Engagement score (%) for each summary, compared to the control version



2.2.2 All treatment summaries increased the proportion of people who thought the information was interesting; the highest performing treatments also increased the proportion of people reporting the information was important to understand the country

As exploratory analysis, we looked at the breakdown of engagement into the two questions that made up this score (Figure A.8 and Table A.11).

We see that all treatment summaries increased the proportion of people who thought the information was interesting by between 7 to 10 percentage points, statistically significant at 5%.

The Simplified + Structure, Methodology and Personas labour market summaries also resulted in a statistically significant increase in the proportion of people reporting that the information was important to understand the country over the control, statistically significant at 5%.

When asked who they thought should know about information contained in the release, 84% thought that politicians should know and understand this information, while 78% thought journalists should. Only two-thirds (66%) thought that they themselves, or people like them, should know and understand it.

Figure A.8: % who think politicians, journalists, other people, or themselves should know and understand this information

% who think the following people should know and understand this information



Table A.11: Overview of secondary outcomes - engagement and trust. Green shading indicates values statistically significantly higher than the control arm, at the 5% significance level. Not corrected for multiple comparisons

% who	Control (n=588)	Simplified (n=589)	Simplified + Structure (n=591)	Methodology (n=569)	Relatable (n=626)	Persona (n=607)
Engagement						
Engagement score (interesting and/or important)	62%	67%	69%	70%	67%	69%
Thought the information was interesting	55%	61%	64%	65%	62%	63%
Thought the information was important to understand our country	68%	73%	74%	74%	72%	76%

2.2.3 Engagement with the summaries was higher among people that have studied economics and/or read economics news more than once a week, and those who were older, from London and had higher income

Table A.12 shows associations between covariates and our engagement score. This tells us how different groups of people were engaged or less engaged with the summaries overall. These are exploratory analyses, and as such we don't correct for multiple comparisons.

Those who were most engaged in the summaries tended to be those that reported more frequent engagement with economic news and having studied economics previously.

Those that were older, from London, have a degree and have higher income were also more likely to report finding the information interesting and/or important.

We did not have the statistical power to look at differential treatment effects; an important area of research for the future could be to look at whether summaries such as these increase engagement of populations that are less engaged because the different presentation makes it more interesting or relevant to their lives.

Table A.12: Associations between engagement and answering the questions and the covariates. p-values are the results of univariate linear regressions with Huber White standard errors

	Engagement score (%)	p-value	Significantly different from the top category within the group?
Total sample (n=3,570; excludes baseline)	67%		
Gender (Regression Model 1)			
Female (n=1,868)	66%		
Male (n=1,660)	69%	p < 0.1+	Yes
Other (n=42)	60%	p > 0.1	No
Age (Regression Model 2)			
18-24 (n=477)	60%		
25-54 (n=1,932)	69%	p < 0.01**	Yes
55+ (n=1,161)	68%	p < 0.01**	Yes
Household income (Regression Model 3)			
Less than £30,000 (n=1,789)	64%		
More than £30,000 (n=1,781)	71%	p < 0.01**	Yes
Location (Regression Model 4)			
London (n=453)	74%		
Midlands (n=573)	65%	p < 0.01**	Yes
North (n=830)	66%	p < 0.01**	Yes
South & East (n=1,052)	66%	p < 0.01**	Yes
Wales, Scotland & N.Ireland (n=662)	68%	p < 0.01**	Yes
Race (Regression Model 5)			
White (n=2,951)	66%		
Black (n=155)	70%	p > 0.1	No
Asian (n=323)	72%	p < 0.05*	Yes
Other ethnic minority (n=141)	70%	p > 0.1	No
Education level (Regression Model 6)			

Table A.12: Associations between engagement and answering the questions and the covariates. p-values are the results of univariate linear regressions with Huber White standard errors

	Engagement score (%)	p-value	Significantly different from the top category within the group?
No degree (n=2,475)	64%		
Degree (n=1,037)	75%	p < 0.01**	Yes
Prefer not to say (n=58)	63%	p > 0.1	No
Employment status (Regression Model 7)			
Employed (n=2,355)	68%		
Economically inactive / Other (n=951)	65%	p < 0.05*	Yes
Temporarily unemployed (n=264)	66%	p > 0.1	No
Engagement with economics and business news (Regression Model 8)			
Once a week or more (n=1,659)	74%		
Less than once a week (n=1,911)	61%	p < 0.01**	Yes
Previous study of economics (or similar) (Regression Model 9)			
Yes (n=1,004)	73%		
No (n=2,566)	65%	p < 0.01**	Yes

** p < 0.01, * p < 0.05, + p < 0.1

2.3 Trust

Our other secondary outcome was trust. We aimed to capture trust in the statistics themselves and in the process through which they are generated. We have therefore combined three questions, which asked whether participants thought the information they saw was accurate, (not) politically influenced and was helpful in understanding what they themselves, their friends and their family had experienced in the job market recently, in order to create an overall trust score. The average trust score across all experiment arms (excluding baseline) was 65% (sd = 30%). Like the engagement score, participants in the baseline were not asked questions related to trust as they referenced the summaries specifically.

Table A.13 below summarises the results of the linear regression presented below. This is the pre-specified model (equation 2a, [section 1.2.5](#)). Considering we have 2 secondary outcome variables, and 6 experimental arms (5 treatment arms), we have corrected for 10 multiple comparisons.

$$\text{Equation 2a: } Trust_i = \alpha + \beta_1 Arm_i + \beta_2 A + \beta_3 Cov + \varepsilon_i$$

Table A.13: Regression table for the secondary outcome: trust score (%), compared to the control arm with an average trust score of 62.1%.

	Treatment effect compared to the control arm (regression coefficient) (change in trust score; 0.01 means 1 percentage point)					
	Constant (Control)	Simplified	Simplified + Structure	Methodology	Relatable	Persona
Coefficient (Robust standard errors)	0.570 (0.026)	0.027 (0.017)	0.043* (0.017)	0.049* (0.017)	0.010 (0.017)	0.029 (0.017)
Standard covariates	Yes					
Custom covariates	Yes					
Adjusted R ²	0.034					
Observations	3,570					

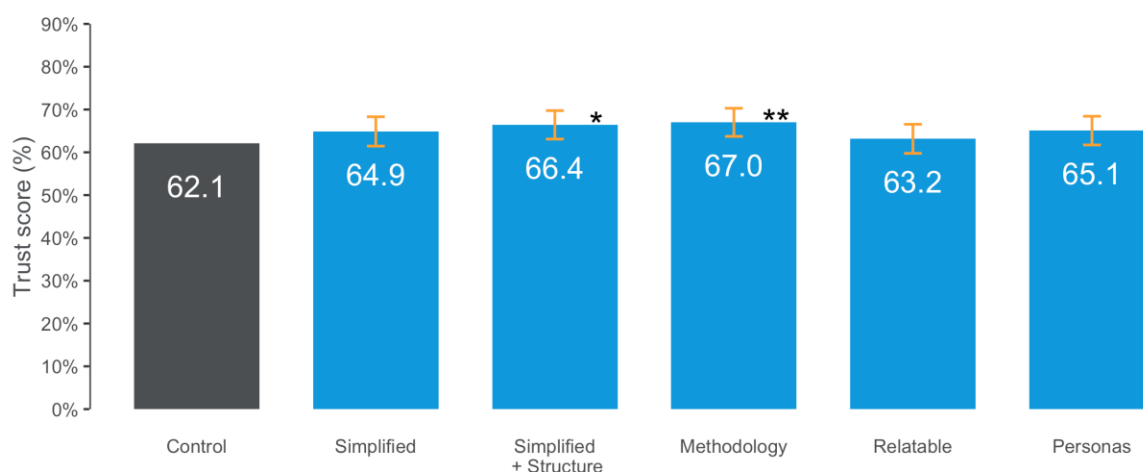
** p < 0.1, * p < 0.05, + p < 0.1

2.3.1 Two summaries showed statistically increases on trust over the control version, Methodology and Simplified + Structure

Trust was highest in the Methodology arm, with an increase over the control of 5.1 percentage points, statistically significant at 1%. The methodology arm explained that ONS figures for labour market figures largely come from the Labour Market Survey; we were uncertain the impact this would have on trust, as we hypothesised that knowing the results could increase trust, as the process would be seen as less open to being politically influenced, or it could backfire if participants did not see how a survey could produce accurate estimates of employment figures. These results suggest that the former has happened.

The Simplified + Structure summary also increased trust by 4.3 percentage points, statistically significant at 5%.

Figure A.9: Trust score (%) for each summary, compared to the control version



n = 3570
 ** p < .01, * p < .05, + p < 0.1
 Secondary analysis, with covariates
 Corrected for multiple comparisons

2.3.2 Increases in trust were driven by more people thinking that the statistics were free from political interference; no treatment summaries resulted in a statistically significant increase in accuracy of the statistics over control version

Table A.14 below displays the breakdown of the trust outcome by individual question. This shows that overall changes in the trust score described above were driven by statistically significant (5%) increases in the proportion of people who thought the statistics were free from political influence for both Simplified + Structure and Methodology summaries.

The change in overall trust for the Methodology summary was also driven by a statistically significant (5%) increase in the proportion of people reporting that thought the release helped them to understand what they, their friends or their family had experienced in the job market recently. This was 8 percentage points higher in the Methodology arm than the control arm.

There were not statistically significant differences in the proportion of people reporting they thought the statistics were accurate between the treatment summaries and the control. Approximately 3 in 4 people across all treatment arms reported believing the statistics were accurate, which is relatively high. It is possible that those that do not believe the statistics are accurate are unlikely to be swayed by changes in presentation, or information on how it is collected.

Table A.14: Overview of secondary outcomes - engagement and trust. Green (red) shading indicates values statistically significantly higher (lower) than the control arm, at the 5% significance level. Not corrected for multiple comparisons

% who	Control (n=588)	Simplified (n=589)	Simplified + Structure (n=591)	Methodology (n=569)	Relatable (n=626)	Persona (n=607)
Trust						
Trust score (accurate and/or free from political influence)	62%	65%	67%	67%	64%	65%
Thought the statistics were accurate	74%	75%	78%	75%	72%	73%
Thought the statistics were free from political influence	58%	64%	66%	64%	62%	63%
Thought the release helped them to understand what they, their friends or their family had experienced in the job market recently	54%	57%	58%	62%	57%	60%

2.3.3 Trust was higher among participants who were older, had higher income and more education

Table A.15 shows associations between covariates and our trust score. This tells us how overall trust varied by demographic characteristics such as age, education, and income. These are exploratory analyses, and as such we don't correct for multiple comparisons.

People who reported that they engage more with economic news had higher trust scores than those that did not. There was no difference in trust score between participants who had or had not previously studied economics.

People who were older, had higher household income, and had a degree tended to report higher levels of trust than others.

Table A.15: Associations between trust and answering the questions and the covariates. p-values are the results of univariate linear regressions with Huber White standard errors.

	Trust score (%)	p-value	Significantly different from the top category within the group?
Total sample (n=3,570; excludes baseline)	65%		
Gender (Regression Model 1)			
Female (n=1,868)	66%		
Male (n=1,660)	65%	p > 0.1	No
Other (n=42)	63%	p > 0.1	No
Age (Regression Model 2)			
18-24 (n=477)	60%		No
25-54 (n=1,932)	64%	p < 0.05*	Yes
55+ (n=1,161)	69%	p < 0.01**	Yes
Household income (Regression Model 3)			
Less than £30,000 (n=1,789)	63%		
More than £30,000 (n=1,781)	68%	p < 0.01**	Yes
Location (Regression Model 4)			
London (n=453)	67%		
Midlands (n=573)	63%	p < 0.05*	Yes
North (n=830)	65%	p > 0.1	No
South & East (n=1,052)	66%	p > 0.1	No
Wales, Scotland & N.Ireland (n=662)	65%	p > 0.1	No
Race (Regression Model 5)			
White (n=2,951)	66%		
Black (n=155)	65%	p > 0.1	No
Asian (n=323)	64%	p > 0.1	No
Other ethnic minority (n=141)	61%	p < 0.1+	Yes
Education level (Regression Model 6)			
No degree (n=2,475)	63%		
Degree (n=1,037)	71%	p < 0.01**	Yes
Prefer not to say (n=58)	51%	p < 0.01**	Yes
Employment status (Regression Model 7)			
Employed (n=2,355)	65%		

Table A.15: Associations between trust and answering the questions and the covariates. p-values are the results of univariate linear regressions with Huber White standard errors.

	Trust score (%)	p-value	Significantly different from the top category within the group?
Economically inactive / Other (n=951)	67%	p > 0.1	No
Temporarily unemployed (n=264)	60%	p < 0.05*	Yes
Engagement with economics and business news (Regression Model 8)			
Once a week or more (n=1,659)	67%		
Less than once a week (n=1,911)	64%	p < 0.01**	Yes
Previous study of economics (or similar) (Regression Model 9)			
Yes (n=1,004)	65%		
No (n=2,566)	65%	p > 0.1	No

** p < 0.1, * p < 0.05, + p < 0.1

2.4 Additional feedback on the labour market release

2.4.1 Other survey questions

All treatment summaries increased the proportion of people that said they would use the ONS website if searching for information on the labour market again, by 6 to 8 percentage points, statistically significant at 5% (Table A.16).

79% of people said they would recommend the labour market release to a friend who was looking to find out more about the labour market. This was only significantly higher than the control in the simplified + Structure arm.

More participants felt that the Methodology, Relatable and Personas labour market summaries had the right amount of information compared to the control. This was driven by fewer participants thinking there was too much information in these summaries, by about 10pp. Notably, each of these labour market summaries had a greater word count than the control version but scored well on ease of understanding. It's possible that the actual length of the summary matters less than how easy it is to read and understand.

Table A.16: Overview of additional exploratory outcomes. Green (red) shading indicates values statistically significantly higher (lower) than the control arm, at the 5% significance level. Not corrected for multiple comparisons

% who	Control (n=588)	Simplified (n=589)	Simplified + Structure (n=591)	Methodology (n=569)	Relatable (n=626)	Persona (n=607)
Would search for the ONS labour market summary if looking for information about the labour market	27%	34%	34%	35%	33%	34%
Would recommend the labour market summary to a friend	75%	79%	82%	80%	79%	80%
Think the labour market summary had the right amount of information (too much information)	71% (23%)	71% (21%)	76% (19%)	78% (15%)	79% (15%)	77% (17%)
Think journalists should know about this information	78%	78%	80%	78%	78%	75%
Think politicians should know about this information	82%	85%	86%	84%	83%	82%
Think other people like themselves should know about this information	64%	67%	67%	65%	65%	66%
Think they themselves should know about this information	62%	66%	69%	66%	66%	66%

2.5 Differences in sample composition across treatment arms

Considering our sample was slightly imbalanced on race, such that the control arm had a lower proportion of White participants compared to the other treatment arms, we conducted a sensitivity analysis to test whether our primary analysis is robust to changes in sample composition.

We conducted this sensitivity analysis for our primary analysis only because this is the only outcome for which race was a strong predictor. We re-ran our pre-specified model (equation 1a, section 1.2.5.), with 2 different samples.

1. Dropping responses of White participants from all treatment arms (removing ~800 responses at random) such that each arm contains ~78% white participants and 22% ethnic minority participants.
2. Dropping responses of Non-White participants from the control arm only (removing ~40 responses at random) such that each arm contains ~84% white participants and 16% ethnic minority participants.

After running these models 100 times, we find that the Methodology and Relatable treatments are significant at the 5% level in around 95% of cases.

1. When the sample composition is 78% white and 22% ethnic minorities, the Simplified + Structure treatment performs significantly better than the control at the 5% level in 56% of cases, whereas the Persona treatment performs significantly better in 76% of cases.
2. When the sample composition is 84% white and 16% belongs to ethnic minorities, the Simplified + Structure treatment performs significantly better than the control at the 5% level in 57% of cases, whereas the Persona treatment performs significantly better in 89% of cases.

At the 10% significance level, the Simplified + Structure, Methodology, Relatable and Persona treatments all have significantly high comprehension in at least 90% of cases.

Following these sensitivity analyses, **we are confident that the treatment effects of improving comprehension are robust for the Methodology, Relatable and Persona labour market summaries, compared to the control.** We are less confident that the Simplified + Structure summary is robust to changes in sample composition.