KANTAR PUBLIC

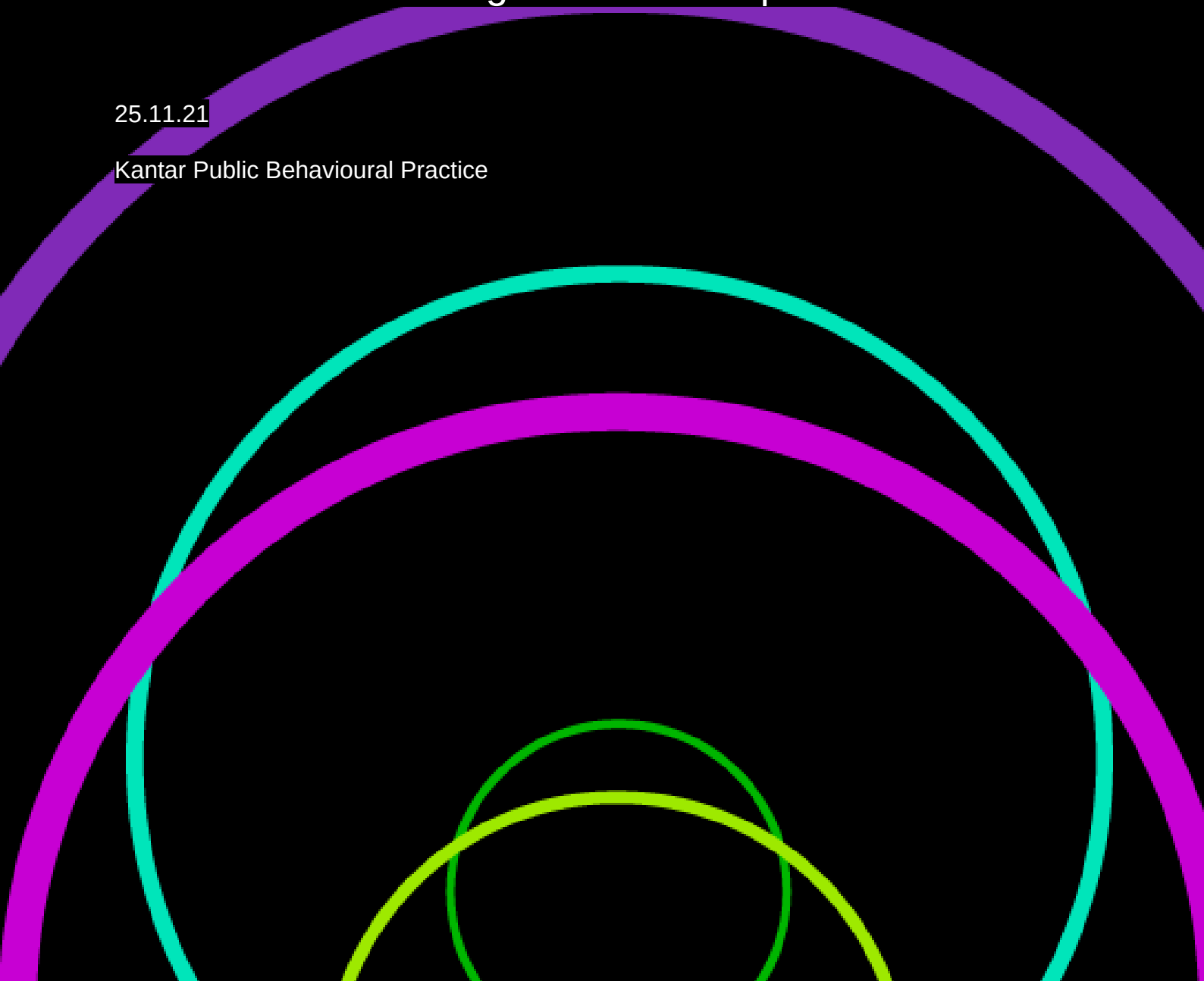
Department for Transport

Summary Report: Covid-19 Behavioural Studies for the Department for Transport

A behavioural approach to supporting public confidence, wearing of face coverings and completion of self-isolation during the Covid-19 pandemic

25.11.21

Kantar Public Behavioural Practice



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1.1 General Introduction

In March 2020, the UK was hit by a global pandemic. HM Government instituted a national lockdown in England[1] which restricted the freedom of citizens to leave their homes, gather in groups and travel beyond their local area (Kirk-Wade, 2021). At the time, the world was still learning about the SARS-CoV-2 virus and its impact, increasing the uncertainty that citizens may have felt about whether and how to travel.

By April 2020 air passenger arrivals into the UK had fallen by 98% (Roberts, 2021), domestic rail travel had fallen by 95% (Department for Transport, 2020b) and domestic bus travel had fallen by 89% (Department for Transport, 2020b). As the pandemic continued, official guidance on how to behave evolved through several waves of infections. Given this evolving policy context, DfT officials sought a better understanding of how citizens travelling on public transport were adapting and how to best support them. There was a particular need to study the impact of novel policy interventions such as wearing face coverings whilst travelling and self-isolating after international travel.

DfT commissioned Kantar Public UK's Behavioural Practice to conduct three projects combining quantitative and qualitative research with insights from academic literature and experts from across government. Each project produced and tested options for policy interventions that DfT could consider or recommend to its partners. All projects provided rigorous evidence for the impact of interventions on behaviour using online randomised controlled trials (RCTs). The RCTs were delivered using Kantar Public's Behaviour Change Lab (BCL), a device-agnostic online experimentation platform. As such, the experiments could be completed on a desktop or laptop computer, tablet or smartphone, as participants preferred.

This report summarises all three projects:

1. Helping the public feel more **confident to resume travelling by public transport** (Autumn 2020).
2. Understanding how to support the **wearing of face coverings on public transport** (Spring 2021).
3. Understanding how to increase **adherence to mandatory self-isolation after international travel** (Summer 2021).

[1] Health is a devolved matter, with England, Scotland, Wales and Northern Ireland making separate decisions.

This report is a summary of the three studies. A full report covering all the studies is published separately. The reports are not designed to provide policy recommendations. The aim is to show how applying social and behavioural science to novel problems and testing the interventions that emerge in online experiments is rigorous, swift and deliverable. These reports are intended to share what was learnt and to stimulate thought about how such approaches can be developed to deliver impact across any policy area. For further information on the methods and approaches taken in the projects reported here and in the full report, please contact behaviouralpracticeenquiries@kantar.com.

1.2 Public confidence in public transport

1.2.1 Why do this work?

This project was intended to provide evidence of how best to increase the confidence of passengers in travelling on public transport when they had the need to do so. The behavioural and primary outcome measure was defined as a decision to travel by public transport, with attitudinal measures focused on confidence.

1.2.2 What methods were used?

The Behavioural Practice and DfT's behavioural scientists worked together to develop the posters below from an initial list of potential messages. These four interventions were tested in Kantar Public's online experimentation platform the Behaviour Change Lab (BCL), against a control (an existing communication encouraging people to plan ahead and choose a direct route).

Figure 1. Plan ahead (existing content).

Figure 2. Extra cleaning (intervention 1).

Figure 3. Travel off peak (intervention 2).

Figure 4. Hands, face, space (intervention 3).

Figure 5. Hands, face, space, plus social norms (intervention 4).

The RCT involved 2,905 participants, recruited using Kantar's LifePoints Panel[2]. Fieldwork was carried out between the 13th and 23rd of November 2020. The sample was representative of the population in England, in terms of age, SEG, region, gender, and ethnicity. Ethnicity was of particular interest due to the higher-than-average reliance of some groups on public transport (Mott MacDonald, 2020, p.44).

Participants were randomly allocated to one of five arms (four interventions and the control), each seeing only one of the five communications. Following this, they were asked to plan their next journey using an interface similar to that used by Google Maps. As shown in Figures 6 and 7, participants had two chances to plan their journey with the Google Maps-like interface, with a time limit of 7 seconds each. Once with all transport options available (car, walking, cycling, and public transport) alongside the option to not travel at all; and once with only two options available (to take public transport or not to travel).

After completing these first two decisions with a time limit, participants were asked to repeat the exercise, but in their own time. This multiple exposure approach is key to capturing how behaviour evolves as people get used to an environment or decision – just as they would if planning multiple journeys using this interface or engaging with posters that they might see multiple times whilst travelling.

[2] Kantar's LifePoints panel is a research-only panel encompassing 5 million panellists (registered in 42 markets), of whom around 400,000 are registered in the UK. LifePoints also provides access to over 100 million panellists through a network of panel partners in over 70 markets. Only suppliers that have been Kantar checked and approved for quality and costs are approved.

Figure 6. Journey planning interface: all options available.

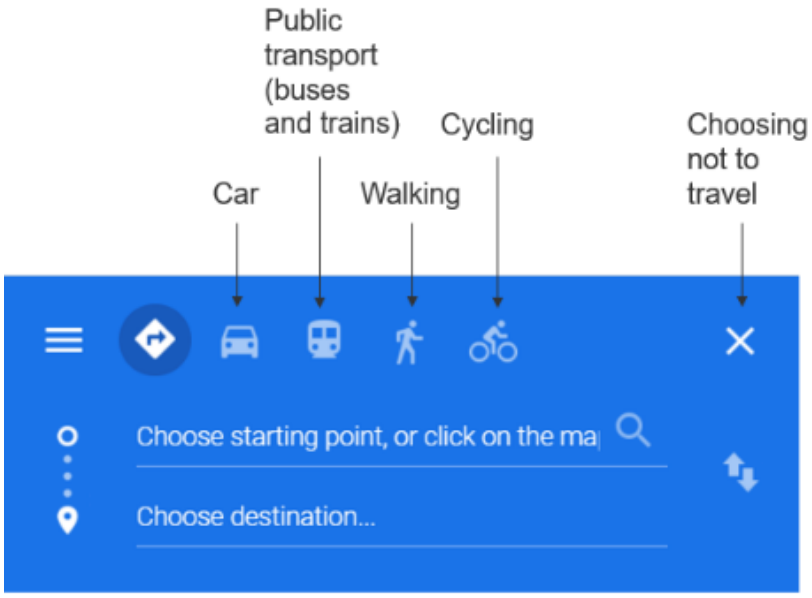
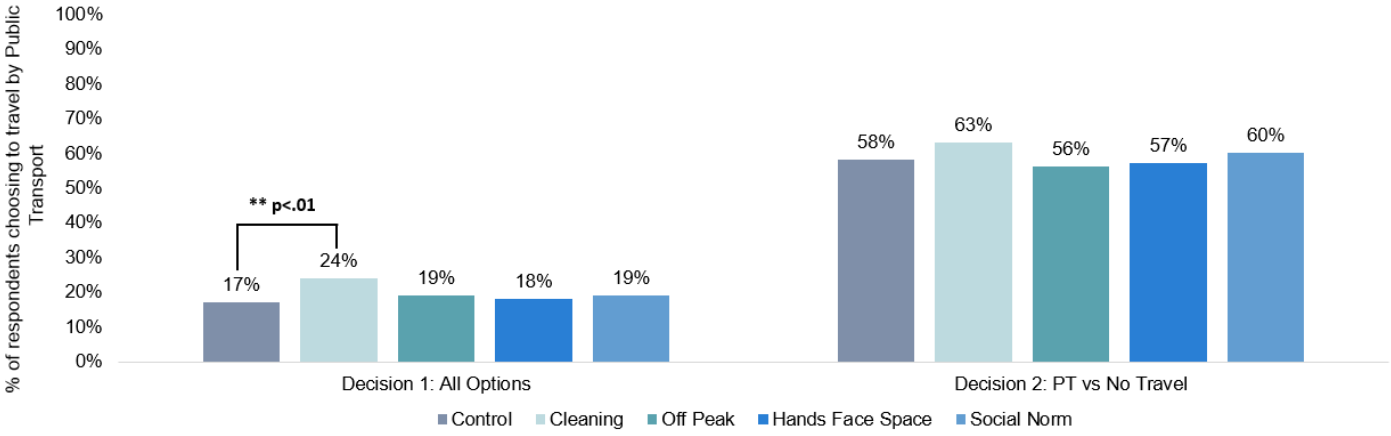


Figure 7. Journey planning interface: only two options available.

1.2.3 What were the headline findings?

1. On the first, timed exposure, there was no significant difference in use of public transport between the control arm (the existing content) and any of the four intervention arms. This was the case when participants were confronted with all transport options, and when the decision was restricted to travelling via public transport, or not travelling at all. On the second, untimed exposure however, the ‘Extra cleaning’ intervention (highlighting the thorough cleaning carried out in travelling environments to kill the virus) significantly increased the choice of public transport when all options were available ($p<.01$). See Figure 8.

Figure 8. Percentage of passengers deciding to travel by public transport; untimed exposure.



*** = p < .05; ** = p < .01; *** = p < .001**

Base: Control [n=583] Cleaning [n=574] Off Peak [n=586] Hands Face Space [n=578] Social Norm [n=584].

2. People with a black and minority ethnic (BAME) background responded differently from other participants. On the second, untimed exposure they were significantly more likely to choose to travel by public transport in response to *all* the interventions as compared with the control (not just the 'Extra cleaning' intervention), albeit this result was seen in the 'PT vs No Travel' decision rather than the 'All Options' decision as outlined above. This indicates that all of the prototypes developed by DfT officials and the Behavioural Practice, not only the 'Extra cleaning' intervention, would work better at encouraging public transport use among this key group than the communication already in use, if only public transport were available.
3. The second, untimed exposure resulted in a shift in behaviour, but no intervention had a significant effect on levels of confidence in the public transport system, or on levels of confidence in the adherence of others to Covid-19 safety guidelines. Using a behavioural outcome measure allowed us to reveal changes in behaviour that are not necessarily linked to changes in attitudes or opinions such as confidence.

1.2.4 What can we learn from this project?

An intervention influenced behaviour, whilst leaving our main measure of confidence unchanged. This result validates the method of including an objective measure of behaviour as the primary outcome rather than a subjective attitudinal measure which is open to interpretation.

Further analysis confirmed the expectations of DfT officials that confidence in the ability of fellow passengers to socially distance and follow public health guidance was associated with decisions to travel by public transport.

1.3 Wearing face coverings whilst travelling on public transport

1.3.1 Why do this work?

From 15 June 2020, passengers (aged 11 and above) travelling on public transport in England were required to wear a face covering, unless exempt for reasons including a physical or mental illness, impairment or disability (Department for Transport, 2020a). DfT officials came to the Behavioural Practice with the challenge of understanding how to support high levels of face covering usage on the public transport network, using communications that could be supplied to transport operators for use in their operating environments.

Alongside this main objective, this project was also designed to provide evidence that could help inform decisions on how best to accommodate the needs of people who were exempt from wearing face coverings. A key sub-objective, therefore, was to explore how interventions might impact peer-policing incidents where people not wearing face coverings might be challenged by other members of the public, even if they had a legitimate exemption.

Communications are a key tool for government, but their impact is often evaluated based on attitudes and opinions. This project provided specific rigorous evidence for how communications might directly affect choices on whether to wear a face covering.

1.3.2 What methods were used?

The project began by convening teams from across DfT to complete a logic model together. Logic models provide a map of hypotheses about causal relationships between the resources, activities, outputs and outcomes of a project. The logic model helped to foster a shared understanding across DfT teams of the behaviours of interest, and therefore what could be measured in the online experiment.

Understanding the environment people are in when making decisions can help unlock the actual reasons behind their behaviour. Qualitative research helps to immerse researchers in these environments so the reasons for behaviour can be explored. Four online focus groups were conducted with a total of 15 public transport users. These groups were recruited based on self-reported attitudes toward wearing face coverings, ranging from people who would never wear them to people who almost always did. To gain specific

detail that was relevant to the environment in which the interventions would be implemented, each group was structured as a discussion about the various stages of a journey on public transport.

Building on the outputs of the qualitative work, five prototype communications were developed and tested alongside a control incorporating an existing message. Qualitative work particularly influenced interventions 1 and 5 that focus on morality, and Intervention 4 that utilised a social norm message. Intervention 3 explicitly mentions exemption to ensure that the experiment could provide an answer on whether greater focus on this would help to reduce the likelihood of peer policing.

Figure 9. Existing content (control).

Figure 10. Protect others (intervention 1).

Figure 11. Enforcement (intervention 2).

Figure 12. Enforcement plus exemption (intervention 3).

Figure 13. Thank you (intervention 4).

Figure 14. Save lives (intervention 5).

As a final stage of research before the experiment, the Behavioural Practice explored the reactions of 12 people who were exempt from wearing face coverings to the prototype interventions in user testing interviews. This research aimed to understand whether there would be any objections to any of the prototypes and whether any were particularly reassuring to people who may worry about peer policing incidents. Most expressed full support for the interventions and suggested other options as well such as lanyards or proof of exemption when peer policing was discussed. Further information is available in the full report.

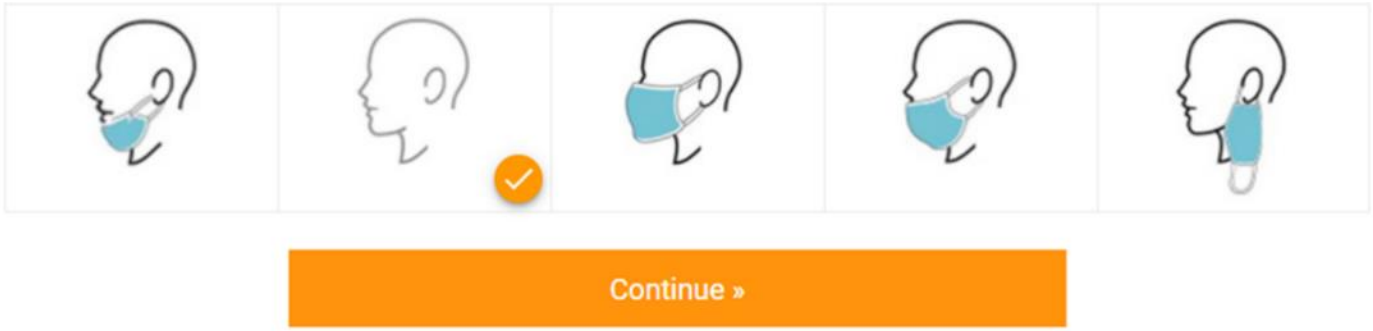
Between 23 and 28 December 2020 these interventions were tested in a randomised controlled trial in the Behaviour Change Lab using a sample of 2,984 English public transport users aged 16+ recruited from Kantar's LifePoints Panel. The experiment simulated nine stages of a journey on public transport from getting on a bus to leaving a train station, namely:

1. Waiting at the local bus stop
2. Getting on the bus
3. Exiting the bus at the train station
4. Entering the train station
5. Using the ticket to pass through the ticket gates
6. Once on the train
7. Leaving the train station
8. Entering the stairwell to leave the station
9. Exiting the train station towards the street.

The stages of the journey were simulated using photographs of these environments, some of which included the interventions. For example when entering the bus the interventions would have been visible on the bus doors in the same place as posters are generally inserted. In addition participants were provided with descriptions of the journey stage they were at.

Participants completed the journey twice. Participants were automatically moved on from one stage to the next after 15 seconds in the first journey (the 'short exposure'). In the second journey (the 'long exposure') there was no time limit on decisions. At each point participants were able to make a choice about whether or how to wear a face covering, using the interface shown in Figure 15.

Figure 15. Face covering interface: "Let us know if you want to do anything by tapping or clicking the image below".

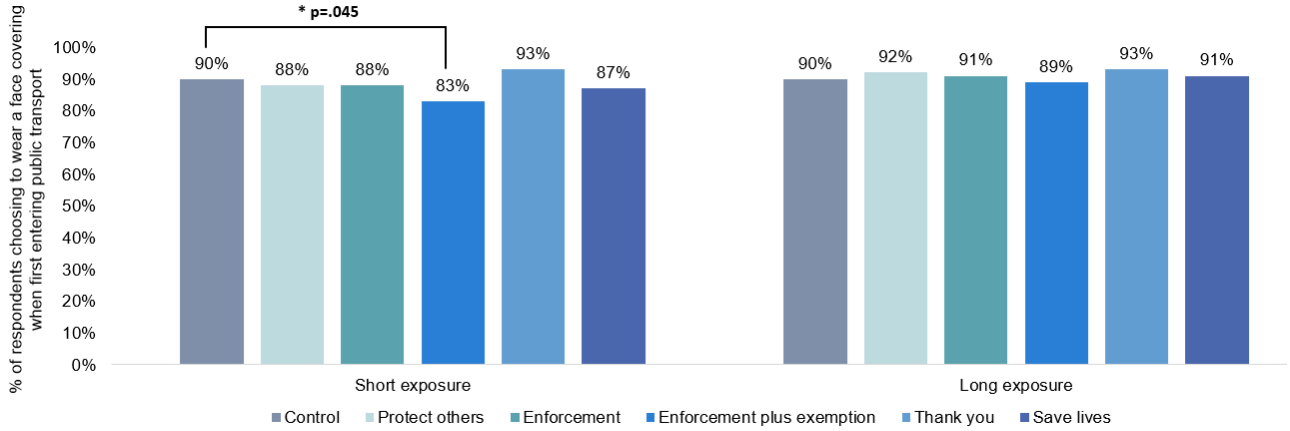


The primary outcome was whether or not participants chose to wear a face covering when getting on a bus at Stage 2 of the journey.

1.3.3 What were the headline findings?

1. Nine out of ten (90%) participants in the control group wore a face covering at the second point of the journey (getting on the bus), across both exposures. On the first exposure, around eight out of ten (83%) participants who saw the 'Enforcement plus exemption' intervention chose to wear a face covering – a statistically significant drop compared to the control. No interventions drove any significant increases in the wearing of face coverings compared to the control.

Figure 16. Percentage of passengers deciding to wear a face covering when first entering public transport.



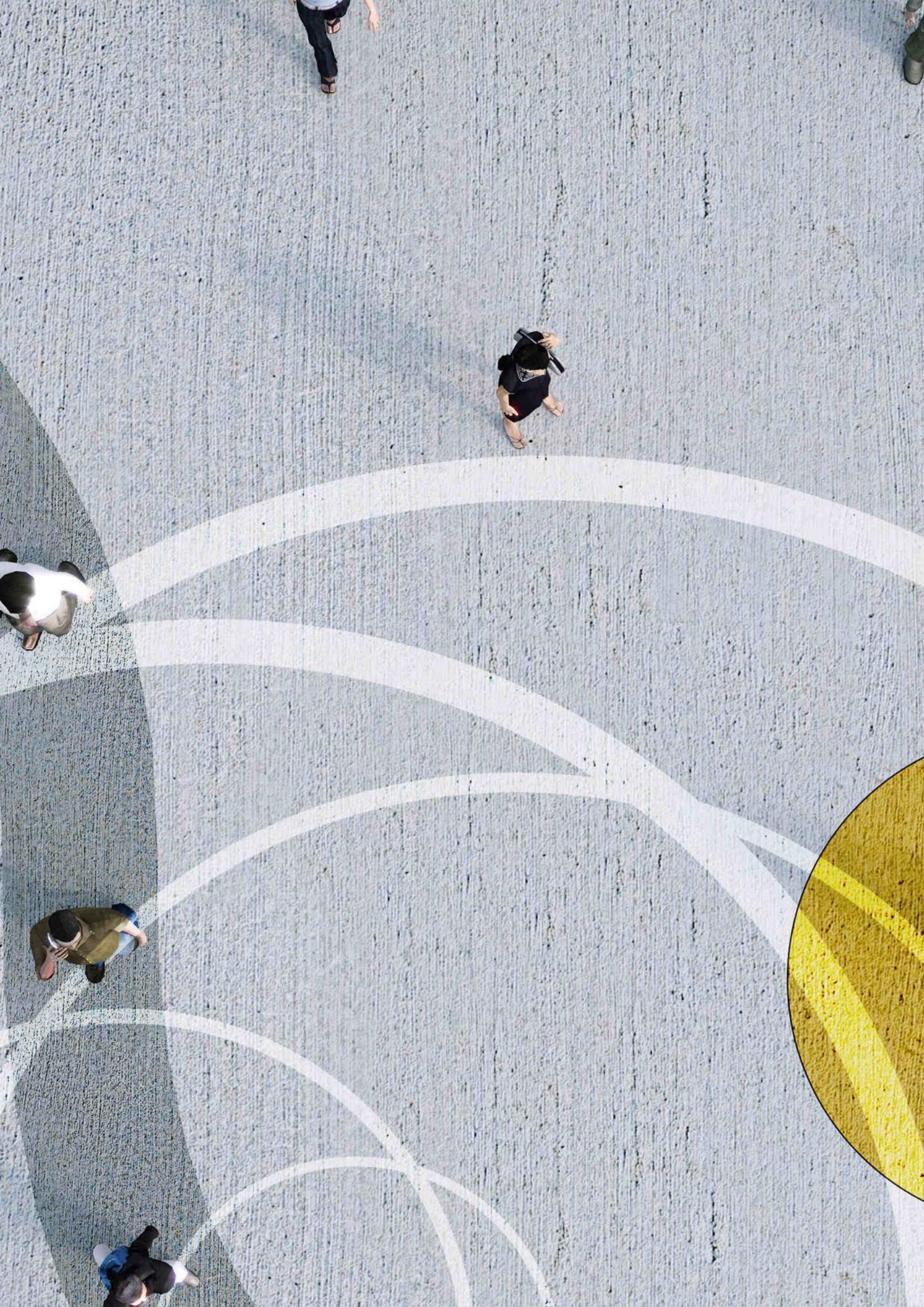
*** = p < .001; ** = p < .01; * = p < .05*

Base (total that do not consider themselves exempt from wearing a face covering): Control n=452 / Protect others n=442 / Enforcement n=445 / Enforcement plus exemption n=450 / Thank you n=455 / Save lives n=461.

2. A substantial proportion of participants took off their face coverings when they exited the bus, stood on the train station platform, and exited the train station. This is in line with what participants told us in the qualitative work - that they would take off their face coverings when they perceived that wearing them was not necessary, for example when standing on a platform open to the sky.
3. The social norm based 'Thank You' intervention performed consistently (albeit non-significantly) better across all the other secondary outcomes including the wearing of face coverings at each journey stage on the first exposure, survey questions measuring confidence in other passengers wearing face coverings, and that following guidance would keep them safe.
4. No intervention had a significant impact on self-reported likelihood to peer police.

1.3.4 What can we learn from this project?

The experiment recorded similar levels of wearing of face coverings as observed in the field. In addition, plausible variations in behaviour were observed that align with findings from the exploratory qualitative work (taking one's face covering off as soon as there is sufficient fresh air to do so). The results underline the value of a mixed methods approach and support the use of immersive simulations to test communications where time or operational limits mean field trials are not feasible.



1.4 Self-isolation after international travel

1.4.1 Why do this work?

HM Government introduced a traffic light system for international travel to England on 17th May 2021, categorising countries or territories as red (high risk), amber (moderate risk) and green (low risk). International travellers from amber list countries were required to complete 10 days of self-isolation at a dwelling of their choosing, usually their home (Department for Transport & The Rt Hon Grant Shapps MP, 2021).

Media reports had been suggesting that many people were not adhering to existing self-isolation rules. This was reflected in research. In one study, just one in three (34%) people with symptoms of Covid-19 in England reported that they were self-isolating, of which two in three (61%) nonetheless reported having gone out in the previous 24 hours (Smith et al., 2020).

DfT officials wanted to understand what they could do to support people to self-isolate at home after travelling from abroad. The main opportunity for intervention was sending text messages to those people who were self-isolating. This project therefore focused on testing a range of text message interventions to help people complete their self-isolation period after international travel. In addition, the project aimed to provide insight into a behaviour that was highly challenging to observe in the field: the proportion of people actually adhering to self-isolation after international travel.

This project is the most complex of the three described in this report, seeking to simulate the progression of time over 10 days of self-isolation and responses to interventions within this simulation.

1.4.2 What methods were used?

The project began by convening teams from across DfT to complete a logic model reporting expectations about relationships between the resources available, activities that are possible, expected outputs and desired outcomes. The logic model helped to surface hypotheses about what influences the likelihood of someone fully self-isolating after international travel, and how the range of policy and process interventions already in place or planned were seeking to support this.

DfT officials wanted those self-isolating after international travel to an amber list country to:

- Not only know that they must self-isolate but also be aware of *why* it is important to complete the full ten days.

- Have confidence in the government's commitment to and enforcement of rules.
- Reduce impulsive trips out of the house to a minimum.

In order to understand the specific barriers to self-isolating after travel, and incorporate this understanding in the design and targeting of interventions effectively, the Behavioural Practice team conducted qualitative research with 27 people who had experienced self-isolation. This included seven depth interviews and three focus groups with people who had had to self-isolate after international travel, and five depth interviews with people who had had to self-isolate for other reasons.

It was clear from the qualitative work that information was not perceived as a problem. Participants felt that information was freely available and were content that they understood the requirements. Likewise, planned self-isolation after returning from a trip abroad was said to be easier and less stressful than unexpected self-isolation triggered by being close contact with someone who had tested positive.

Insights from this exploratory research were pulled together in an intervention brief. This highlighted potential moments for intervention (qualitative work suggested that impulsive breaches were the main problem, happening only once people were through the initial stages of self-isolation) and barriers to successfully completing self-isolation. A small group of people admitted that they broke self-isolation on day one, due to their views on its legitimacy or enforcement; it was agreed that this group would be more appropriately dealt with through existing enforcement actions than through behavioural interventions.

In the next stage of the project, officials from across central government and frontline services helped to create a longlist of 43 interventions in response to this brief using the Behavioural Practice's ideation process. Each idea was linked to a well evidenced behavioural science principle. These were then narrowed down to the five final interventions summarised below based on feasibility and expected effectiveness. The final interventions were then tested in an online randomised controlled trial against a control which was the existing government course of text messages sent to those self-isolating after international travel:

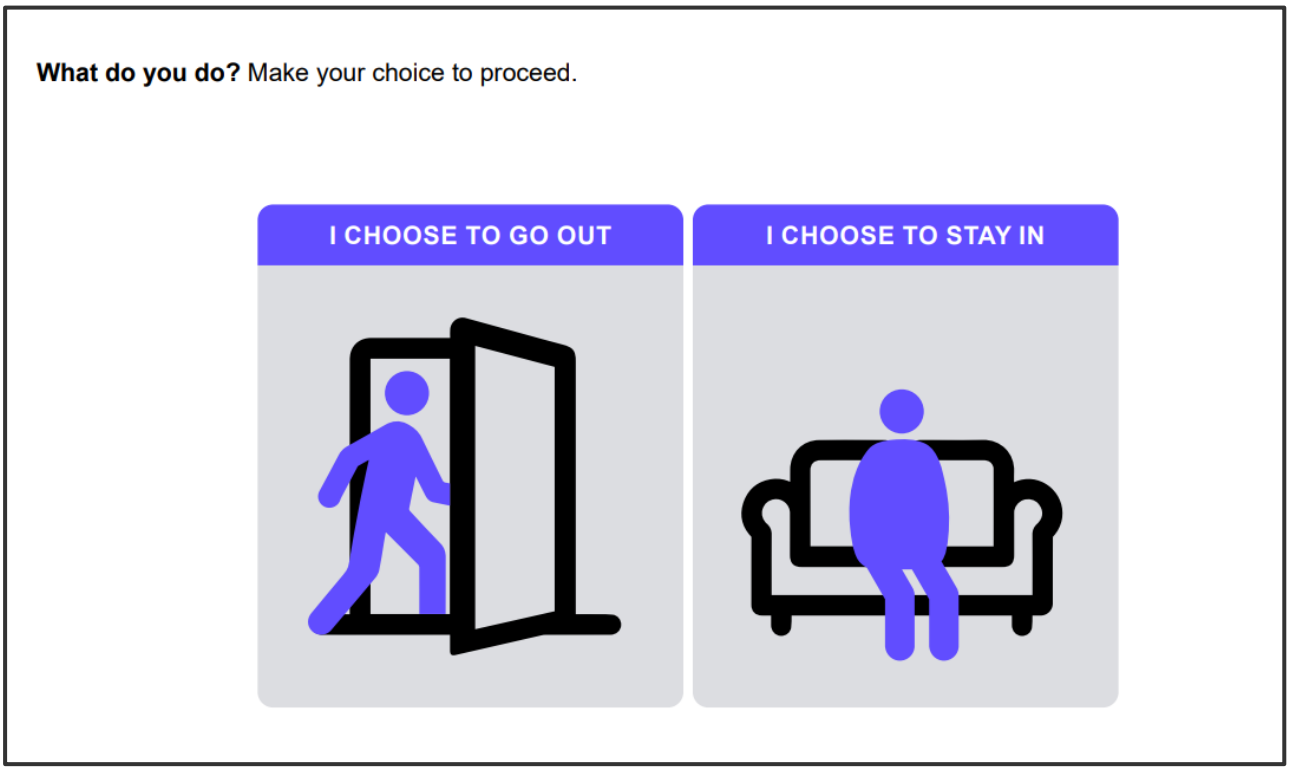
1. 'Value and importance of testing' addressing optimism bias (Sharot, 2011). Here this meant the overconfident belief that you are not likely to catch Covid-19, and so don't need to test or self-isolate. Additionally, this intervention aimed to address conspiracy theories or rumours arising from a lack of perceived control (Whitson & Galinsky, 2008) and information asymmetry about what testing is actually for.

2. ‘Improve risk understanding’ addressing overconfidence (Kahneman & Tversky, 1977) about the riskiness of leaving the house or meeting others by explaining more about the risks involved.
3. ‘Negative newspaper headlines’ – not an intervention aimed at improving adherence to self-isolation, but an attempt to investigate the impact of negative social norms (Goldberg et al., 2020) as reported by the media on adherence to the rules, particularly whether this is associated with increased breaches of self-isolation.
4. ‘Encourage planning and committing’ using implementation-intentions (Gollwitzer, 1999) to help participants plan three activities they could do if tempted to break self-isolation. Participants received reminders of their plan by text.
5. ‘Emphasise enforcement’ exploiting the availability heuristic (Tversky & Kahneman, 1973) by making enforcement actions more salient, and loss aversion (Kahneman & Tversky, 1979) by highlighting heavy fines.

Between 24 June and 7 July 2021 these interventions were tested in an online randomised controlled trial involving 2,860 participants from Kantar’s LifePoints Panel who were residents of England and had travelled internationally between January 2018 and February 2020. On the basis of our sample size, the experiment was sufficiently powered to detect varying differences in survival across a range of levels of breaching behaviour.

Eight out of ten days began with participants receiving a text message, either the standard already sent by government, or one of the interventions listed above. On days 5 and 10 all participants were sent a text with a negative Covid-19 test result. Each scenario described different activities and weather for the day. Scenarios were built to be as balanced, believable, and relatable as possible. Finally, participants were asked to choose to stay in or go out, as below:

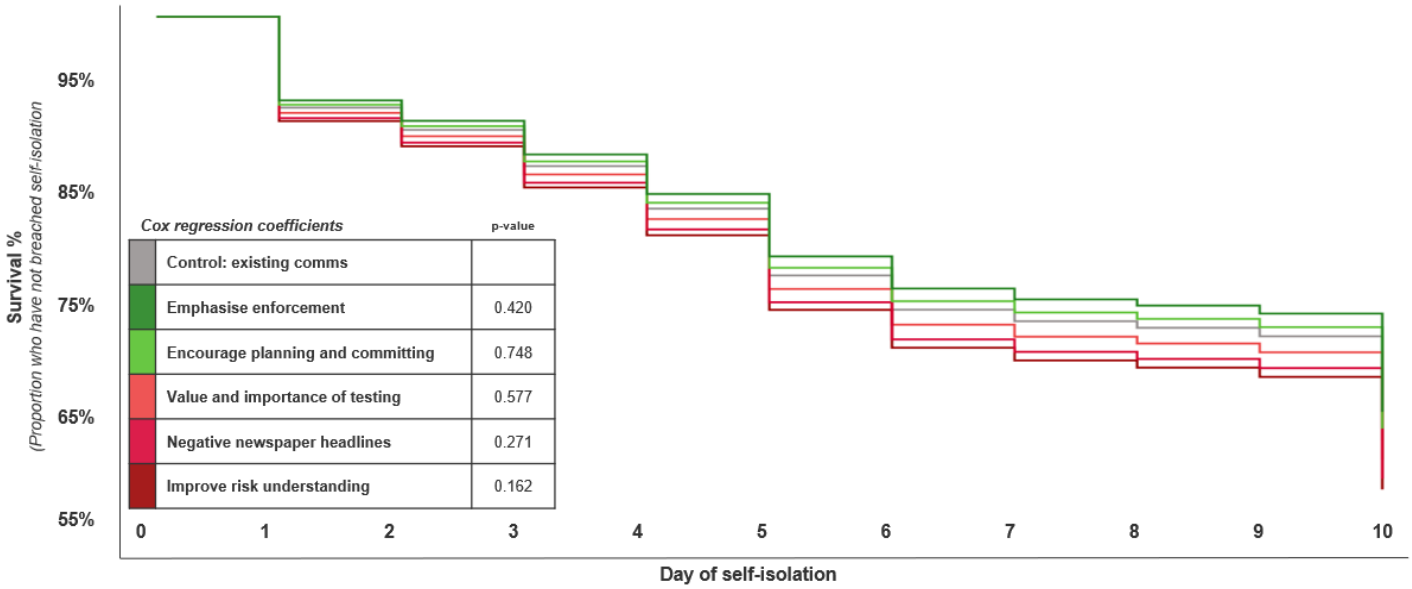
Figure 17. Primary outcome measure: "What do you do?" question screen.



1.4.3 What were the headline findings?

1. The primary outcome measure was successful completion of self-isolation. None of the interventions performed significantly better than the Control in decreasing breaches across the full 10 days of self-isolation (Figure 18).
2. A key objective of this project was to provide an additional measure of self-isolation levels in an environment where research to establish this in the field was infeasible. Four in ten (39%) participants broke self-isolation at least once, meaning that three in five (61%) did not break self-isolation, slightly below an indicative baseline of 67% (Office for National Statistics, 2020). The similarity in these findings lent confidence to the results overall.
3. In line with the results from the qualitative research, most participants began to break self-isolation only after the first few days – the results showed spikes in breaches on days 5, 6 and 10. Further analysis of the Day 6 results showed that participants choosing to breach self-isolation were more likely to be male, 16-34 years old and unvaccinated. Existing evidence already highlighted how younger people (Moran et al., 2021) are less likely to follow self-isolation rules.

Figure 18. Survival analysis of the 10 days of self-isolation. None of the interventions performed significantly better than the Control across the full 10 days. Spikes in breaches on days 5, 6 and 10.



*** = p < .001; ** = p < .01; * = p < .05

Base: Total, n=2.860 (Control, n=477; Value and importance of testing, n=476; Improve risk understanding, n=476; Negative newspaper headlines, n=477; Encourage planning and committing, n=477; Emphasise enforcement, n=477).

Participants were asked "How are you finding things after x days?" on days 3, 5, 7, and 10. No significant differences were observed in responses to this question.

1.4.4 Learnings to share:

Having a qualitative dimension produced a wide range of hypotheses for what affects likelihood to complete self-isolation, which were built into the interventions and used to interpret the results of the experiment. The experiment was powered to detect any meaningful change in breaching behaviour that emerged. Therefore, although the experiment produced a null effect (no intervention significantly affected levels of breaches of self-isolation across the full 10 days), the results can give confidence that a worthwhile effect was not missed, and that therefore modifying the text messages sent to people whilst they are self-isolating is not going to be a cost-effective way to increase adherence to self-isolation.

The experiment also showed that negative newspaper headlines did not significantly increase the numbers of people breaching self-isolation, indicating that this need not be a cause for concern. However, receipt of negative test results did appear to drive an increase in breaches, suggesting that a perception of lower risk of infecting others could be a key driver in breaches of self-isolation.

The key technical question was whether the experience of self-isolation could be simulated in an online experiment. Six in 10 (61%) of participants did not break self-isolation, slightly below the ONS's indicative baseline of 67%. The similarity in findings on overall compliance between this experiment and the ONS research, as well as the spikes in breaches in response to negative test results, lent confidence to the results overall. Likewise, lower levels of adherence amongst males, younger and un-vaccinated groups are also behaviours that were expected based on qualitative work and the existing literature (Moran et al., 2021). This experiment therefore demonstrates that it is possible to observe meaningful decisions being made within an online environment that simulates the passage of time.

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