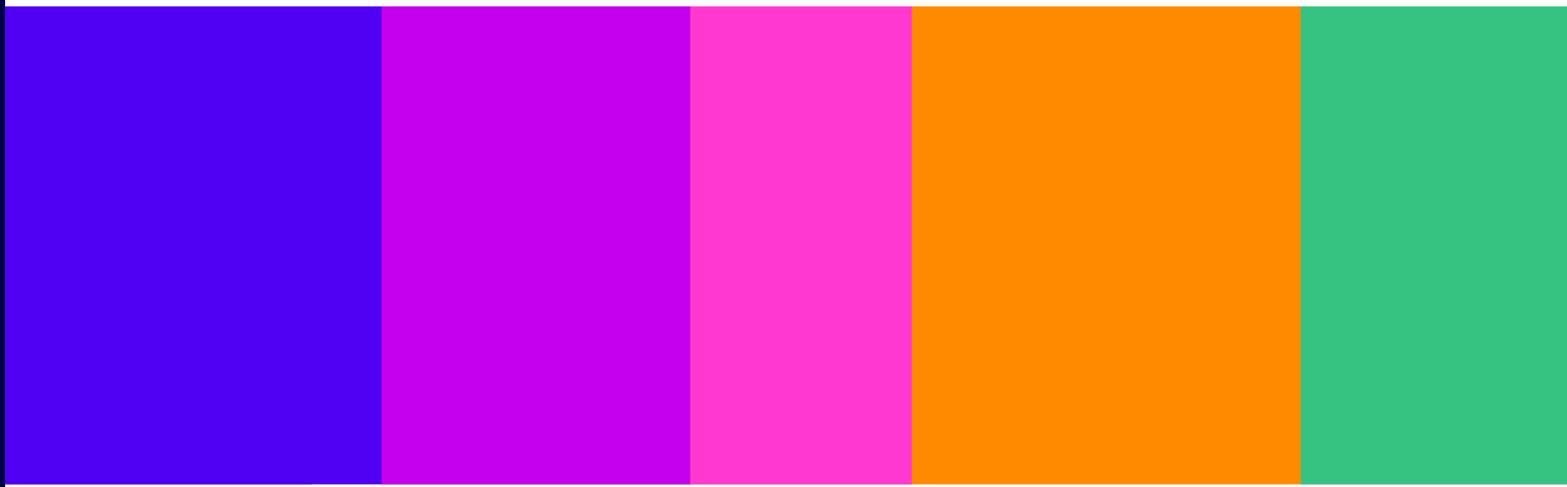


Default effects and alert messages

The impact of auto-play and auto-skip defaults on the effectiveness of alert messages

Behavioural Insights Discussion Paper

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Ofcom behavioural insight discussion paper series in communications regulation

The discussion paper series

Ofcom is committed to encouraging debate on all aspects of media and communications regulation and to create rigorous evidence to inform that debate. One of the ways we do this is through publishing a series of discussion papers, extending across behavioural science, economics and other disciplines. The research aims to make substantial contributions to our knowledge and to generate a wider debate on the themes covered.

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Regulatory Context

Ofcom is publishing this research under its Media Literacy duty. Ofcom has a duty to promote media literacy, including in respect of material available on the internet. Ofcom's approach to media literacy is multi-dimensional and considers a range of aspects including how the design of services can impact on users' ability to participate fully and safely online.

Ofcom also oversees the regulatory regime which requires UK-established Video Sharing Platforms providers to include measures and processes in their services that protect users from the risk of viewing harmful content.

The Government has confirmed Ofcom as the regulator for online safety in the UK. We are preparing for our new responsibilities in this sector which will commence once the relevant legislation has been passed. The Online Safety Bill is now expected to receive Royal Assent in Autumn 2023.¹

¹ Ofcom: [Online safety: Roadmap to regulation update \(June 2023\)](#)

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1. Overview

- 1.1 Seven in ten UK internet users feel that the benefits of being online outweigh the risks² but staying safe online can be challenging. The same research shows that just over six out of ten internet users also report that they have experienced at least one example of potentially harmful content in the last four weeks. It is therefore important that measures to help keep users safe online work well and Ofcom has an ongoing programme of behavioural research to assess the effectiveness of online safety measures.
- 1.2 Users' decision-making can be influenced by the starting point for their choices, how choices are presented to them, and how choices are described. 'Choice architecture' refers to the contexts in which users make decisions and how choices are presented to them.³ In this research and our previous research we tested how choice architecture can impact on people's safety online.
- 1.3 We have previously explored the impact that different alert messages could have on users' behaviour, particularly in relation to making more informed decisions about watching potentially harmful content on a video sharing platform.⁴ In that research participants were shown an 'active choice' alert message before being exposed to potentially harmful content. The alert message gave them information about the potentially harmful content they were about to encounter and required the participant to decide to 'watch' or 'skip' that content. The active choice alert message introduced an element of friction into participants' viewing experience by requiring them to stop and think about what they wanted to do.
- 1.4 In that research we tested giving participants different types of information about the potentially harmful videos they were about to be shown. We found that alerts which used a high-level descriptive social proof message ("This video contains material that other viewers on this platform have reported as being sensitive") led to a statistically significant increase in users skipping potentially harmful content compared to the control group.
- 1.5 In this latest research we explored whether there were differences in the impact of an active choice alert and default settings had on participants skipping potentially harmful content. For instance, how could the impact of an alert message be affected by a default which automatically played the video if the user did nothing (an 'auto-play default' which opted users into watching content)? Defaults are pre-set options that a user must take active steps to change. That is, it is the outcome that users get if they do nothing. We know that defaults can be strong drivers of behaviour and that auto-play defaults are commonly used by platforms. We also wanted to investigate the impact of an auto-skip default which opted viewers out of watching content.
- 1.6 In this research we tested the impact of both auto-play and auto-skip defaults on users' decisions whether to watch or skip content online. We did this to explore whether these types of defaults could either offset or augment the impact of alert messages in helping users to make more informed decisions about potentially harmful content.

² Ofcom. (2022). [Online Experience Tracker, Summary Report](#).

³ Thaler, R. H., Sunstein, C. R., and Balz, J. P. (2010). [Choice Architecture](#).

⁴ Ofcom. (2022). [Behavioural Insights at Ofcom](#).

Key Findings

Our research suggests that auto-skip and auto-play defaults could have important effects on users' exposure to potentially harmful content.

Overall, we did not find that an alert message combined with an auto-play default reduced the probability of participants skipping potentially harmful content. Our measure of skipping includes skipping at the alert message stage or at any point during the video.

However, our research suggests that the auto-play default could have an impact on *when* people skip videos. This could have the effect of exposing more users to harmful content than just the active choice alert message we tested on its own. With the auto-play default, we observed more participants *starting to watch the potentially harmful content and then skipping* compared to just the active choice alert message.

Conversely, we did find that an auto-skip default combined with the alert message we tested – in effect 'opting users out' of watching potentially harmful content unless they choose otherwise – reduced participants' exposure to potentially harmful content. In addition, our research suggests that the auto-skip default led to participants *skipping more potentially harmful content videos rather than starting to watch them* and so avoided the potentially harmful content altogether. However, further research would be needed to confirm these findings about the timing of participants skipping the potentially harmful content.

The alert messages we tested did not have a negative impact on user engagement. For example:

- (i) The alert messages did not have the unintended effect of encouraging users to skip neutral content.
- (ii) Participants reported that they found the alert messages to be useful and did not find them distracting or annoying.

1.7 Our findings and insights are set out in more detail in section 3 of this paper.

2. Interventions

Default settings

- 2.1 Defaults are pre-set options that a user must take active steps to change. That is, it is the outcome that users get if they do nothing. There is a well-documented tendency for people to be predisposed to defaults i.e., to stick to the initial option(s) that they are presented with.
- 2.2 Defaults have been shown to be very effective at influencing decision-making across several different contexts (e.g., changing the default position for organ donation, retirement savings, etc.).^{5,6} Research suggests that the effectiveness of defaults depends on the underlying psychological mechanisms that they activate. For instance, endorsement (e.g., the default is interpreted as a recommendation as to what the decision-maker should do), or inertia (e.g., choosing the default option requires no physical effort).⁷
- 2.3 Defaults can benefit users by assisting decision-making and helping to reduce the number of decisions they have to make. However, defaults may not always be designed with users' best interests in mind or with consideration of their impact on user safety.⁸ For instance, the infinite scroll design feature of many websites makes it very easy for users to scroll seamlessly through videos and posts but takes away the page breaks that might naturally provide a prompt to users to limit the amount of time they spend on the service.
- 2.4 Our previous research found that a certain form of 'active choice' alert message led to an increase in participants skipping potentially harmful content. In this research we aimed to test what impact defaults had on the probability of participants skipping potentially harmful content. We tested:
 - a) What effect introducing an auto-play default had on the impact of an active choice alert message; and,
 - b) What effect introducing an auto-skip default had on the impact of an active choice alert message.

Platforms already use auto-play default settings

- 2.5 Auto-play is a common feature of online platforms and is used to promote user engagement with the service. For instance, Twitter and Facebook play video content automatically in users' feeds. YouTube's 'Autoplay' feature is set to 'on' by default for adults which means that the user does not have to choose a new video to watch once the current video finishes.⁹
- 2.6 The latter form of default is particularly interesting because there is a timing component to the default which means that the content will be served to the user *unless* the user chooses to do something different within a short period of time. For example, Figure 1 shows BitChute's auto-play default, which includes a visual countdown in the form of a disappearing ring. The user must make the effort to click on the 'Click to cancel' button to

⁵ CMA. (2022). [Online Choice Architecture: how digital design can harm competition and consumers.](#)

⁶ Smith et al. (2013). [Choice without awareness: Ethical and policy implications of defaults.](#)

⁷ Jachimowicz et al. (2019). [When and why defaults influence decisions: a meta-analysis of default effects](#)

⁸ Thaler, Sunstein & Balz. (2014). [Choice Architecture.](#)

⁹ [YouTube Autoplay feature.](#) Accessed on 20th June 2023.

prevent the content playing automatically: the auto-play default means that the user is 'opted in' to watching the content.

Figure 1. A screenshot of BitChute's auto-play default, captured 22/05/23.



- 2.7 If opting-in users to watching content promotes user engagement, then including an auto-play default could potentially undermine the effectiveness of an alert message. If an active choice alert message shown before viewing content introduces an element of friction into the users' decision-making – requiring them to stop and think about what to do – then an auto-play default could dampen this effect by making it easy for the user to continue watching or being interpreted by the user as an implicit endorsement to continue watching.
- 2.8 By contrast, an auto-skip default could reduce the likelihood of users engaging with potentially harmful content (by making it easy to skip or being interpreted as a recommendation to skip the content) without taking away the choice to watch it. This is important: potentially harmful content is not illegal. We wanted to understand the effects of design features that do not block user access but could help users to make more informed choices about what to view.

We tested auto-play and auto-skip defaults

- 2.9 We tested whether an alert message combined with an auto-play or auto-skip default led to more or less skipping of potentially harmful content compared to no alert message or an active choice alert message with no auto-play or auto-skip.
- 2.10 We hypothesized that an alert message with an auto-play default could lead to participants skipping less potentially harmful content compared to an active choice alert on its own. However, ahead of undertaking the research, it was not clear to us how much an auto-play default would reduce the probability of skipping compared to an active choice alert.
- 2.11 We also hypothesized that an alert message with an auto-skip default would lead to an increase in the overall likelihood of participants skipping potentially harmful content compared to no alert message or an active choice alert message.
- 2.12 We used the same experimental environment as with our previous online randomized control trial on static alert messages¹⁰ but adapted the choice architecture of alert messages

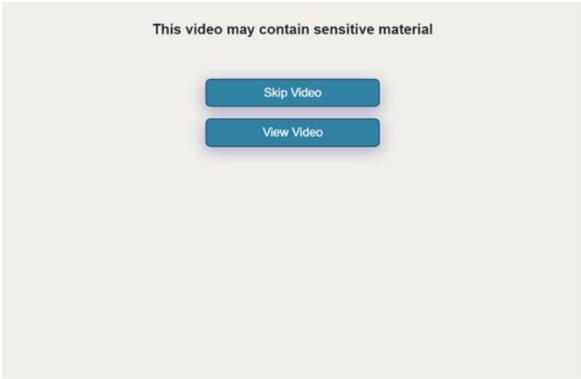
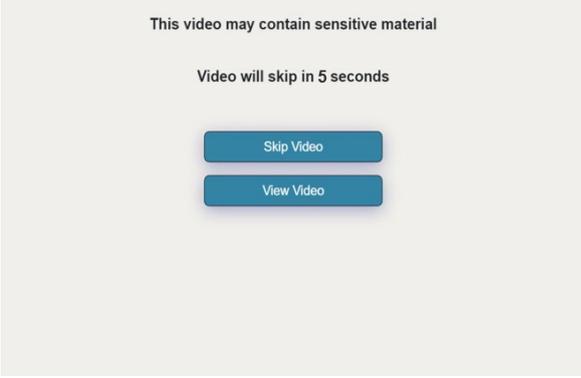
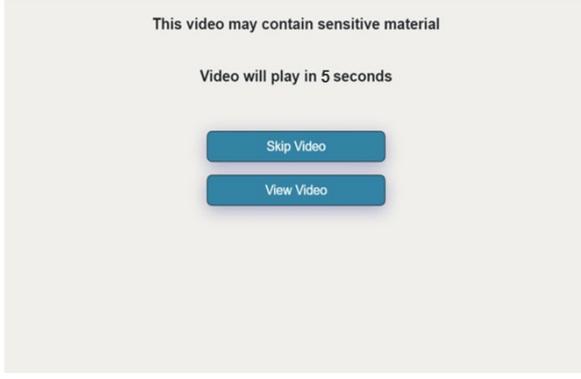
¹⁰ Ofcom. (2022). [Behavioural insights for online safety.](#)

shown to participants before potentially harmful content to include auto-play or auto-skip defaults. These adaptations are set out in the next section.

Outcome measures

- 2.13 Our primary outcome measure was the impact on the overall likelihood of participants skipping potentially harmful content, that is whether the alert messages led to more participants skipping potentially harmful content overall. We measured participants 'skipping' behaviour by whether they opted to 'skip' a video in response to an alert message or at any time while watching the video.
- 2.14 We were also interested in *when* participants chose to skip the potentially harmful content i.e., whether they skipped at the alert message stage or whether they chose to watch the content but then skipped it, and this was one of our secondary outcome measures.
- 2.15 Table 1 below sets out the information that was presented to participants in each trial arm. There were no alert messages in our control arm ('Arm 1') before any of the potentially harmful videos. In our first intervention arm ('Arm 2') we tested an active choice alert message with the generic warning message we used in our previous trial (i.e., "This video may contain sensitive material") and the user was then required to make an active choice to 'watch' or 'skip' the video, which were presented neutrally.
- 2.16 In Arms 3 and 4 we tested the same wording of the alert message but with either an auto-skip default or an auto-play default respectively. In each case there was a visual countdown to the video skipping or playing according to the intervention arm.
- 2.17 For this research we used a sample of 2,800 participants, with 700 participants per trial arm.

Table 1. The alert messages participants saw ahead of potentially harmful content

Trial arm	Alert message
<i>Control</i>	No alert message
<i>Arm 2 – Active choice alert</i>	 <p>This video may contain sensitive material</p> <p>Skip Video</p> <p>View Video</p>
<i>Arm 3 – Auto-skip alert</i>	 <p>This video may contain sensitive material</p> <p>Video will skip in 5 seconds</p> <p>Skip Video</p> <p>View Video</p>
<i>Arm 4 – Auto-play alert</i>	 <p>This video may contain sensitive material</p> <p>Video will play in 5 seconds</p> <p>Skip Video</p> <p>View Video</p>

Experience and attitudes to alert messages

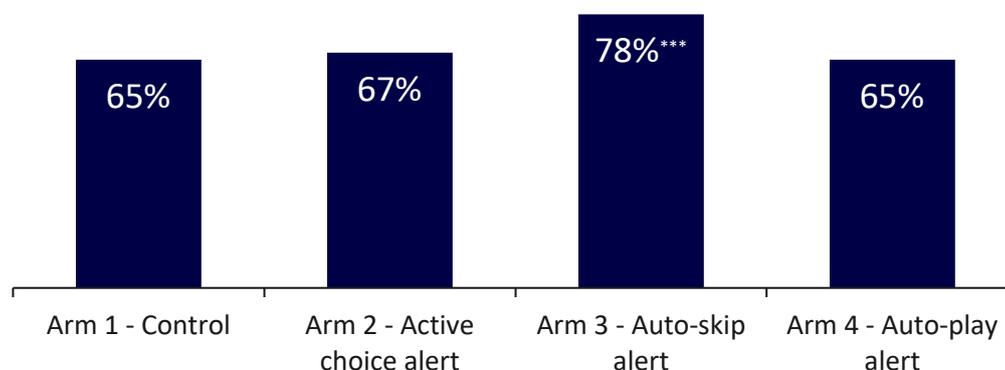
- 2.18 At the end of the main experiment participants were asked a series of questions about their experience of the alert messages and their understanding of the prompts that they had received. This section enabled us to complement the measurements of participants' behaviour with insights into the thoughts and attitudes underpinning their behaviour. For instance, we asked them whether they found the alert messages to be useful or distracting. We also asked if they thought the alert messages were a recommendation as to what to do or whether they felt rushed into making a viewing decision.
- 2.19 The details of the experimental set-up and design together with the detailed results can be found in the trial report that accompanies this paper.

3. Findings

The auto-play default did not reduce overall skipping

- 3.1 First of all, we note that the levels of skipping of potentially harmful content in our trial appear to be quite high – as set out in Figure 2, even in the control arm, 65% of participants skipped the potentially harmful content at some stage after starting to watch it. This is comparable to the level of skipping we observed in our previous trial involving active choice alerts.¹¹
- 3.2 As shown in Figure 2, the probability of skipping potentially harmful content overall for the auto-play alert message was the same as in the control arm.¹² In addition, after testing against the other intervention arms, the difference in the probability of skipping potentially harmful content for the auto-play alert message was not significantly different from the active choice alert message.¹³
- 3.3 In contrast, the auto-skip alert message had a statistically significant impact on the overall probability of skipping compared to the control – the overall probability of skipping potentially harmful content increased by 13 percentage points – as well as compared to other trial arms.¹⁴

Figure 2. Probability of skipping potentially harmful content overall.



Note: The increase in probability of skipping potentially harmful content overall in Arm 3 was statistically significant relative to both the control arm and the other intervention arms.

**** Denotes statistical significance at the 0.1% level ($p < 0.001$).*

When participants skip could be influenced by default settings

- 3.4 However, when we looked at *when* participants skipped i.e., whether they skipped at the alert message stage or whether they started to watch the video and then skipped, we observed interesting differences in the pattern of behaviour of our trial participants.

¹¹ Ofcom. (2022). [Behavioural Insights at Ofcom](#).

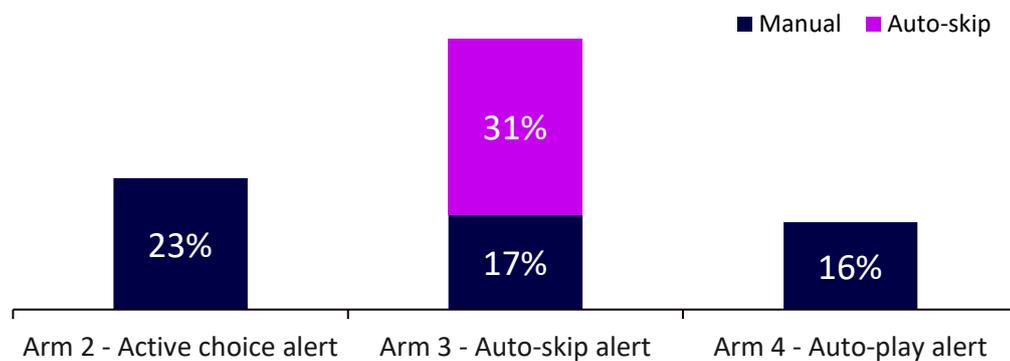
¹² Overall skipping includes skipping at the alert message stage or at any point during the video.

¹³ See section 7.2.1 of the technical report to this paper.

¹⁴ See section 7.2.1 of the technical report to this paper.

- 3.5 When faced with just an active choice alert and having to decide to skip or view the potentially harmful content, we observed around 1 in 4 of those who skipped, skipped at the alert message stage. This means that three out of four participants started to watch the video before skipping it.
- 3.6 When the same alert message was presented with an auto-skip or auto-play default included, this changed. Although we did not see any difference in overall skipping with an auto-play alert compared to the active choice alert (as seen in Figure 2 in the previous subsection), we observed a different pattern of skipping behaviour at the alert stage (as seen in Figure 3 below). With an auto-play alert, skipping at the alert message stage now dropped to just 16% of participants compared to 23% of participants with the active choice alert.
- 3.7 This suggests that the auto-play default could be over-riding the effect of the active choice alert and leading to some participants starting to watch potentially harmful content when they might otherwise have chosen to skip.

Figure 3. Level of skipping of potentially harmful content in direct response to the alert messages



Note: (i) As this was a secondary outcome measure, we did not test for the significance of these differences. (ii) 'Manual' means the participant clicked on the 'Skip' button and did not watch any part of the video. 'Auto-skip' means the participant let the auto-skip default take effect and did not watch any part of the video.

- 3.8 Figure 3 also shows that with the auto-skip alert, we observed that the proportion of those skipping at the alert message stage rose to 48% – nearly 1 in 2 – and 31% of participants skipped by letting the auto-skip default operate.

Further insights: experience and attitudes to alert messages

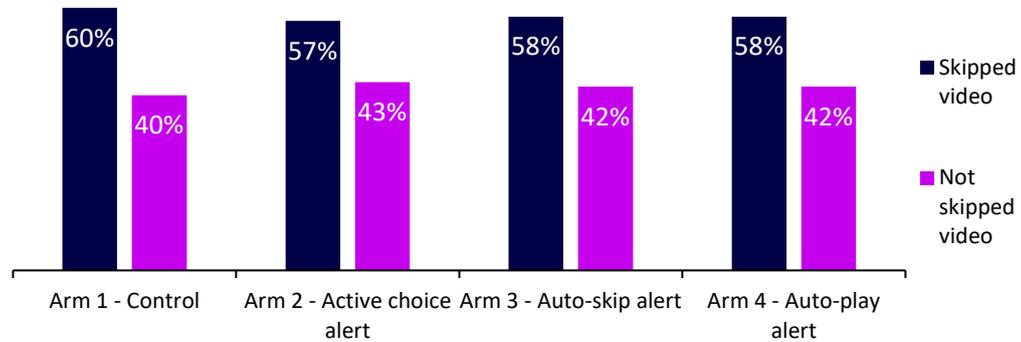
- 3.9 Our post-experiment survey also had a number of interesting findings. As the survey evidence is based on participants' recall and self-reported behaviour, we do not draw any causal inferences from this part the research.

User engagement remained high

- 3.10 One potential concern was that alert messages would lead to more overall skipping – including skipping neutral content. For example, being exposed to an alert message for potentially harmful content could mean that participants were now 'primed' to skip any content that they came across. We therefore assessed whether alert messages had the unintended effect of also encouraging participants to skip neutral content. We did not find

that the alert messages had any effect on the skipping of neutral content. Figure 4 below shows that there is no significant difference in participants skipping neutral content between the trial arms.

Figure 4. Participants' skipping of neutral content



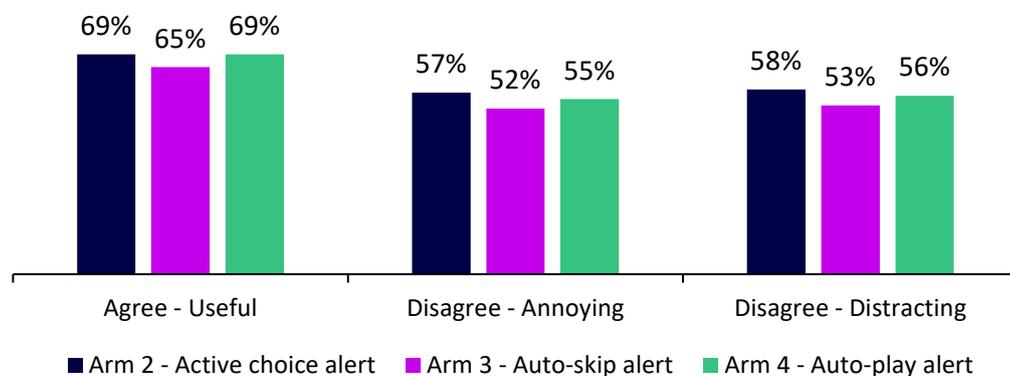
3.11 We also saw similar levels of engagement with the content across all four arms of the trial – we observed that alert messages led to slightly higher levels of disliking and commenting in the intervention arms compared to the control. This may suggest that alert messages potentially primed participants to engage with content more critically. This sort of feedback – disliking or commenting on content – could be useful to help identify problematic content.

Attitudes towards alert messages were positive

3.12 We also wanted to test whether participants found the alert messages annoying or distracting.

3.13 Across all alert messages, most participants agreed that they were useful, whilst disagreeing that they were annoying or distracting. At the same time, for all categories a further 20-25% of participants responded “neither agree nor disagree” which indicates a degree of indifference to the alert messages. It is possible that this indifference could reinforce any tendency to stick to the default. That is, participants could be indifferent between the options available to them and simply choose to stay with the default option.

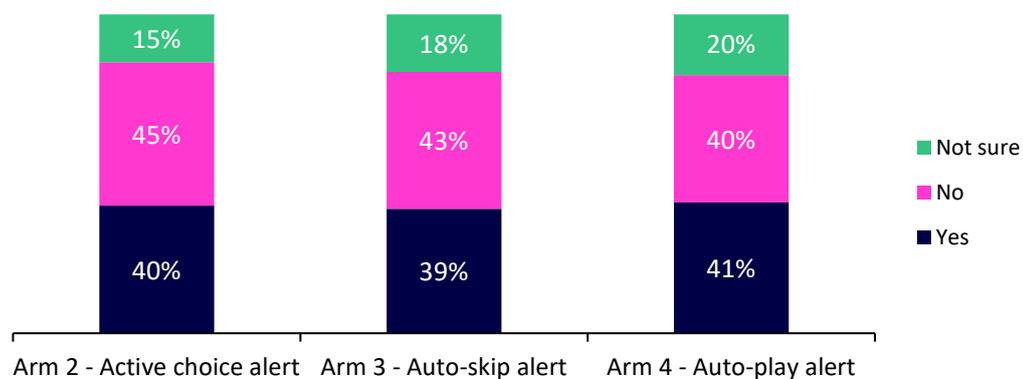
Figure 5. Participants' attitudes towards the alert messages



Participants were split on whether alert messages constituted an implicit recommendation as to what to do

- 3.14 We were interested in understanding whether participants interpreted the alert messages as an implicit recommendation as to what to do.
- 3.15 The results were evenly split. On average across all three alerts, 40% believed the alert messages were recommendations, 43% did not, and the remaining 17% were unsure. This even split in responses perhaps reflects the fact that this is an experimental set-up and the interface is generic and non-branded. Responses could be different in situations where the platform is a well-known brand and / or users have had an opportunity to develop ideas of trust or loyalty towards the platform.

Figure 6. Participants' response to whether the alert messages constituted recommendations

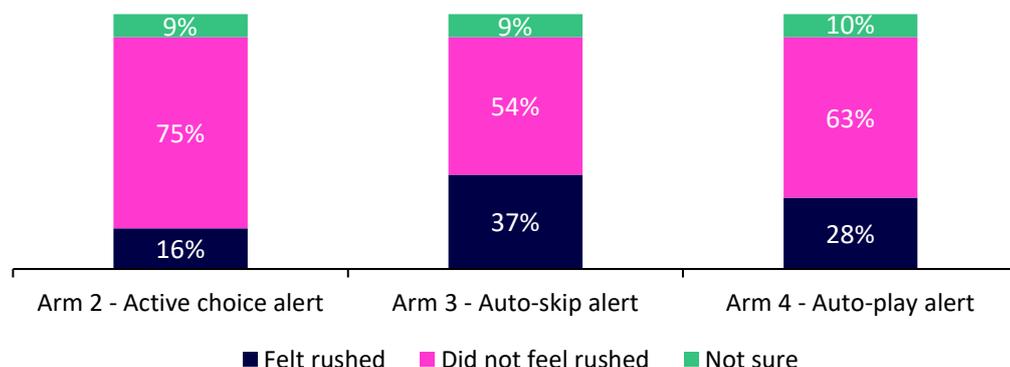


Note: May not sum to 100% due to rounding.

Participants did not feel rushed into making a choice

- 3.16 We were interested in understanding whether the auto-play and auto-skip defaults (with the five second countdown) made participants feel rushed into a decision and so were not making an informed viewing choice. We expected to see some participants in the auto-skip and auto-play arms claim to feel rushed, and we did – 37% and 28%, respectively. However, the majority did not report feeling rushed. This could suggest that a majority of participants made an informed choice, whether that was an active or passive choice.

Figure 7. Participants' feeling of being rushed by alert messages



Note: May not sum to 100% due to rounding.

- 3.17 We did not expect any in the active choice arm to feel rushed as there was no time limit, but 16% did. It is not clear why this was the case – it could be due to the fact that participants were required to make a choice of some kind.
- 3.18 As a caveat to these findings, we found evidence that in some cases the recall of participants was poor. For instance, only 61% of participants in the auto-play arm correctly recalled which type of alert message they had just seen, and, in the auto-skip arm, it was lower at 39%. Moreover, 44% of participants in the auto-skip alert incorrectly claimed to have seen an auto-play alert. We attribute these results to poor recall by the participant rather than inattention during the trial itself because the trial included both an attention check and a validity check. It is also the case that participants may more easily recall (or mis-recall) the auto-play default due to familiarity or prior exposure.

4. Discussion

- 4.1 The effectiveness of online safety measures will vary depending on how platforms decide to implement them. While it is important that platforms have the flexibility to design and implement measures in the most effective way for their users, Ofcom wants to understand how different aspects of the design and choice architecture of safety measures can impact on their effectiveness. This will be important when it comes to thinking about measures which help to empower users and help them make more informed choices as part of the development of the online safety regime.
- 4.2 As set out above, default settings have been shown to be very effective at influencing decision-making across a number of different contexts. They could have a large effect if incorporated into online safety measures.
- 4.3 We recognise that design choices do not operate in a vacuum. In this research we have chosen to assess the interplay of active choices and default settings and this raises issues about enabling users to make choices for themselves versus restricting users' choice.

Conclusions

- 4.4 Our research indicates that the default settings we tested impacted on participants' skipping of potentially harmful content.
- 4.5 The research suggests that including an auto-play default as part of an alert message could have the effect of exposing more users to potentially harmful content than just an active choice alert message on its own. In our experiment, when the active choice alert message included an auto-play default, more participants started to watch the content before skipping compared to the active choice alert message on its own. However, more research would need to be carried out to confirm this result.
- 4.6 In contrast, an alert message combined with an auto-skip default significantly increased participants skipping more of the potentially harmful videos. At the same time, the benefits of improving user safety by incorporating an auto-skip feature would need to be weighed against the restriction on user choice through the 'opted out' nature of the default.
- 4.7 Users reported that they found the alert messages to be useful and that they did not find them to be distracting or annoying. Furthermore, the fact that the alert messages did not lead to participants skipping neutral content also suggests that there is the potential for alert messages to be implemented in a way that helps users to make more informed decisions about viewing potentially harmful content without having a negative impact on their engagement with other forms of content offered by platforms.

Limitations

- 4.8 As with our previous online trials, we recognise the limitations of using online randomized control trials. In particular:
- The experimental set-up: the split of potentially harmful and neutral videos, the number of videos, and therefore the frequency of alert messages was an experimental construct and therefore may not reflect a typical experience for a real-world user. Participants' behaviour may reflect this distinction.

- The frequency of alert messages could help determine how long their effectiveness persists. However, we were unable to explore this in our experimental set-up.
- While repeated exposure to these alerts could reduce their impact and cause users to ignore their content or alternatively, it could allow users to learn and adapt more cautious behaviours towards potentially harmful content. Testing the impact of exposure over time is something that could be tested in an experimental set-up (e.g., by repeating the experiment with the same participants) but may be better undertaken in collaboration with an online platform in a real-world setting.

Next steps

- 4.9 We will continue to explore the effectiveness of online safety measures using online randomised control trials and will publish the results to promote a constructive dialogue with stakeholders.
- 4.10 We would welcome the opportunity to explore the scope for conducting randomised control trials in collaboration with industry stakeholders or for industry stakeholders to share their research for discussion.