Appendix A. Robustness tests

Below we report robustness tests for our main hypothesis tests that include a number of potentially relevant control variables. Despite introducing some additional nuance at times, by and large they support the findings that we report in the paper.

For all dependent variables, we report a baseline model, the full model which we report in the main paper, and an extended model that includes two additional control variables, namely respondents' preferences for having their news selected by journalists (M = 3.55, SD = 1.37, α = .89) and their positive attitudes towards algorithms (M = 4.53, SD = 1.11, α = .92).

Results for news selection can be found in table 1, those for news engagement in table 2 and the results for recall in table 3. For recall we also report an additional model with a binaty news selection variable as an additional control.

Table 1. Multilevel binary logistic regression analyses for news selection incl. a base model, a full model as reported in the paper, and a robust model with additional controls

	Base model	Full model	Robust model
Intercept	0.29 (1.21)***	0.04 (1.74)***	0.05 (1.92)***
Position nudge	1.59 (1.15)**	1.51 (1.15)**	1.51 (1.15)**
Accessibility nudge	1.02 (1.15)	1.01 (1.15)	0.99 (1.15)
Prior days active	1.05 (1.05)	1.04 (1.05)	1.04 (1.05)
Environmental interest		1.23 (1.06)***	1.23 (1.06)***
Age		1.01 (1.01)	1.01 (1.01)
Gender: Female		0.74 (1.17)	0.75 (1.17)
Gender: Non-binary		1.51 (1.98)	1.46 (1.97)
Education		1.17 (1.09)	1.17 (1.09)
Journalistic news selection preference			0.91 (1.06)
Positive attitudes towards algorithms			1.03 (1.07)
AIC	2729.68	2713.51	2714.42
BIC	2764.09	2776.60	2788.98
Log Likelihood	−1358.84	−1345.76	−1344.21
Num. obs.	2288	2288	2288
Num. groups: informfully_id	502	502	502
Num. groups: date	8	8	8
Var: informfully_id (Intercept)	1.24	1.14	1.12
Var: date (Intercept)	0.08	0.08	0.08

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table 2. Multilevel regression analyses for news engagement measured as log-transformed reading time in minutes, incl. a base model, a full model as reported in the paper, and a robust model with additional controls

	Base model	Full model	Robust model
Intercept	0.45 (0.08)***	−0.02 (0.21)	−0.18 (0.24)
Position Nudge	0.12 (0.05)*	0.11 (0.05)*	0.11 (0.05)*
Accessibility Nudge	0.01 (0.05)	0.01 (0.05)	0.02 (0.05)
sentence_count	0.00 (0.00)***	0.00 (0.00)***	0.00 (0.00)***
Environmental interest	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Prior days using the app		0.02 (0.02)	0.02 (0.02)
Age		0.00 (0.00)	0.00 (0.00)
Gender: Female		0.02 (0.06)	0.03 (0.06)
Gender: Non-binary		0.05 (0.22)	0.06 (0.22)
Education		0.08 (0.03)*	0.08 (0.03)*
Journalistic news selection preference			0.03 (0.02)
Positive attitudes towards algorithms			0.01 (0.03)
AIC	1141.01	1168.99	1181.97
BIC	1177.76	1228.72	1250.89
Log Likelihood	−562.50	−571.50	−575.98
Num. obs.	731	731	731
Num. groups: informfully_id	336	336	336
Num. groups: date	8	8	8
Var: informfully_id (Intercept)	0.13	0.13	0.13
Var: date (Intercept)	0.00	0.00	0.00
Var: Residual	0.17	0.17	0.17

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table 3. Comparison of four multilevel linear regression models assessing the effect of our experimental manipulations on recall. All models are nested in individual users and days.

	Base model	Model with controls	Model with controls and news selection	Model with additional controls
Intercept	0.60 (0.14)***	0.10 (0.20)	0.12 (0.19)	−0.00 (0.23)
Position nudge	0.13 (0.04)**	0.12 (0.04)**	0.10 (0.04)*	0.12 (0.04)**
Accessibility nudge	0.05 (0.04)	0.04 (0.04)	0.04 (0.04)	0.04 (0.04)
Days difference	−0.01 (0.01)	−0.01 (0.01)	−0.00 (0.01)	−0.01 (0.01)
Environmental interest		0.08 (0.02)***	0.07 (0.02)***	0.08 (0.02)***
Age		0.00 (0.00)	−0.00 (0.00)	0.00 (0.00)
Gender: Female		−0.05 (0.05)	−0.04 (0.04)	−0.03 (0.05)
Gender: Non-binary		0.40 (0.21)	0.37 (0.20)	0.40 (0.21)
Education		0.02 (0.03)	0.01 (0.03)	0.02 (0.03)
Selected nudged article			0.48 (0.04)***	
Journalistic news selection preference				−0.03 (0.02)*
Positive attitudes towards algorithms				0.05 (0.02)*
AIC	6357.79	6363.60	6232.77	6371.84
BIC	6398.87	6434.03	6309.17	6454.01
Log Likelihood	−3171.89	−3169.80	−3103.39	−3171.92
Num. obs.	2615	2615	2635	2615
Num. groups: informfully_id	502	502	502	502
Num. groups: day	8	8	8	8
Var: informfully_id (Intercept)	0.12	0.11	0.09	0.10
Var: day (Intercept)	0.11	0.11	0.09	0.11
Var: Residual	0.57	0.57	0.53	0.57

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Appendix B. Moderation analyses

Below we report the results of interaction analyses between the position nudge and environmental interest. Contrary to what we had anticipated in H4 and H5, we do not find that the nudge effects varies depending on respondents' level of environmental interest.

Table 4. Multilevel regression analyses including interaction terms between position nudge and environmental interest. Dependent variables per model: binary selection dummy (news selection), log-transformed reading time

(news engagement), daily recall index (recall)

	News selection	News engagement	Recall Position	Recall Accessibility
Intercept	−3.16 (0.62)***	0.16 (0.23)	0.19 (0.22)	0.09 (0.22)
Position nudge	0.45 (0.64)	−0.27 (0.24)	−0.07 (0.18)	0.12 (0.04)**
Accessibility nudge	0.01 (0.14)	0.01 (0.05)	0.04 (0.04)	0.03 (0.18)
Prior days active	0.04 (0.05)	0.01 (0.01)		
Environmental interest	0.21 (0.08)*	−0.01 (0.03)	0.06 (0.02)**	0.08 (0.02)***
Age	0.01 (0.01)	−0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Gender: Female	−0.30 (0.15)	0.02 (0.05)	−0.05 (0.05)	−0.05 (0.05)
Gender: Non-binary	0.41 (0.68)	0.06 (0.21)	0.40 (0.21)	0.40 (0.21)
Education	0.16 (0.09)	0.09 (0.03)**	0.03 (0.03)	0.02 (0.03)
Position nudge * enironmental interest	−0.01 (0.11)	0.07 (0.04)	0.04 (0.03)	
Sentence count		0.00 (0.00)***		
Days difference			−0.01 (0.01)	−0.01 (0.01)
Accessibility nudge * enironmental interest				0.00 (0.03)
AIC	2715.51	1172.86	6369.42	6375.84
BIC	2784.33	1237.18	6445.72	6452.15
Log Likelihood	−1345.75	−572.43	−3171.71	−3174.92
Num. obs.	2288	731	2615	2618
Num. groups: informfully_id	502	336	502	502
Num. groups: date	8	8	8	8
Var: informfully_id (Intercept)	1.14	0.13	0.11	0.11
Var: date (Intercept)	0.08	0.00	0.11	0.11
Var: Residual		0.17	0.57	0.57

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Appendix C. Stimuli

Below are the titles, teasers and text of the original and manipulated articles that are visible in figure 2. These articles are were shown to users on Nov 28th and have been selected as a fitting example for the accessibility nudge manipulations.

Original article

First transatlantic flight using 100% sustainable jet fuel takes off

Virgin Atlantic flight, partly funded by UK government, hailed by ministers but criticised by campaigners

Flesch reading ease score for main text: 48.7

The first transatlantic flight by a commercial airliner fully powered by 'sustainable' jet fuel has taken off from London Heathrow.

Tuesday's Virgin Atlantic flight, partly funded by the UK government, has been hailed by the aviation industry and ministers as a demonstration of the potential to significantly cut net carbon emissions from flying, although scientists and environmental groups are extremely sceptical.

Airlines have previously flown on a blend of up to 50% of alternative fuels, called sustainable aviation fuels (SAF), and flight VS100 is operating under special dispensation with no paying passengers, using fuel made mostly from tallow and other waste products.

One of those onboard, the transport secretary, Mark Harper, said: 'Today's 100% SAF-powered flight shows how we can decarbonise transport both now and in the future, cutting lifecycle emissions by 70% and inspiring the next generation of solutions.'

Rishi Sunak said the flight was 'a major milestone towards making air travel more environmentally friendly and decarbonising our skies'.

Virgin Atlantic said the flight to New York would show that SAF was a safe replacement for normal kerosene jet fuel. The Virgin Atlantic founder and president, Sir Richard Branson, also onboard, said: 'The world will always assume something can't be done, until you do it.'

Airlines see SAF as a critical route to cutting net emissions, because it can be used in existing planes. However, the availability of the fuel now is less than one-thousandth of the total volume of jet fuel used worldwide.

Shai Weiss, the Virgin Atlantic chief executive, said SAF was ’the only viable solution for decarbonising long-haul aviation. It’s taken radical collaboration to get here and we’re proud to have reached this important milestone, but we need to push further.

’There’s simply not enough SAF and it’s clear that in order to reach production at scale, we need to see significantly more investment. This will only happen when regulatory certainty and price support mechanisms, backed by government, are in
place. Flight 100 proves that if you make it, we’ll fly it.’

Harper said the government would ’continue to support the UK’s emerging SAF industry as it creates jobs, grows the economy and gets us to ’jet zero’.

Five commercial plants to produce SAF in the UK are due to be under construction by 2025. The fuel used on Tuesday was imported from the US and EU.

The flight comes after a year of testing with the engine maker Rolls-Royce and other industry partners. Scientists onboard VS100 will assess the flight’s non-carbon emissions, including contrails and particulates, whose effect on global warming is not fully understood but is believed to be significant.

Campaigners said the government and airlines were making misleading claims for the flight - particularly a Department for Transport announcement that SAFs would ’make guilt-free flying a reality’.

Cait Hewitt, the policy director of the Aviation Environment Federation, said: ’The idea that this flight somehow gets us closer to guilt-free flying is a joke.’

She said SAF production would be very hard to scale up sustainably, adding: ’Hopefully, we’ll have better technological solutions in future but, for now, the only way to cut CO2 from aviation is to fly less.’

Progress worldwide is likely to be slow. Last week nations at the UN’s aviation agency, the International Civil Aviation Organization, agreed at a summit in Dubai to ’strive to achieve’ a target of reducing the CO2 intensity of jet fuel burnt by 5% by 2030.

Rewritten article

First plane flies across the ocean using eco-friendly fuel

Ministers praise Virgin Atlantic flight supported by UK government, but campaigners have concerns

Flesch reading ease score for main text: 79.8

The first plane trip from London to New York using ’sustainable’ jet fuel has taken off.

This is a big deal because it shows that we can reduce the pollution caused by flying. The flight was funded by the UK government and supported by the aviation industry. However, some scientists and environmental groups are not convinced that this is enough to make a real difference.

In the past, airlines have used a mix of alternative fuels, called sustainable aviation fuels (SAF), but this flight used 100% SAF. The fuel is made from things like animal fat and other waste products.

The UK's transport secretary, Mark Harper, who was on the flight, said that using SAF can cut carbon emissions by 70% and help find solutions for the future.

The flight was seen as a major step towards making air travel more environmentally friendly.

Virgin Atlantic, the airline behind the flight, wants to show that SAF is a safe replacement for regular jet fuel. The founder of Virgin Atlantic, Sir Richard Branson, who was also on the flight, said that people often think something can't be done until someone actually does it.

Using SAF is important because it can be used in existing planes. However, right now there is not enough of it available. The amount of SAF produced is less than 0.001% of the total jet fuel used worldwide.

The chief executive of Virgin Atlantic, Shai Weiss, said that SAF is the only real option for reducing pollution from long-haul flights. But to make more SAF, we need more support from the government and more investment.

The UK government is planning to support the production of SAF by building five new plants by 2025. The fuel used on this flight was imported from the US and EU.

Scientists on the flight will study the emissions from the plane, like the smoke trails it leaves behind, to better understand their impact on global warming.

Some people think that the government and airlines are not being honest about the benefits of using SAF. They say that it will be very hard to make enough SAF to make a real difference. They believe that the best way to reduce carbon emissions is to fly less.

It's important to remember that progress in reducing pollution from planes will be slow.

Last week, countries from around the world agreed to try to reduce the amount of carbon emissions from planes by 5% by 2030. This shows that there is still a long way to go.