



Ministry of Infrastructure
and Water Management

Climate awareness and air travel intention

Does awareness of aviation's climate impact reduce leisure air travel?

KiM | Netherlands Institute for Transport Policy Analysis

Toon Zijlstra & Gabrielle Uitbeijerse | July 2023

Summary

Leisure travellers with a high level of climate awareness say that they want to fly less. But whether they follow their words with actions depends on how their climate awareness stacks up against other factors, such as how much they flew as children. The depth of their knowledge about the impact of air travel on the climate correlates strongly with their climate awareness.

One-quarter of all respondents in the KiM study had an above-average climate awareness and planned to travel by air at least once in the next two years. Their justification of flying despite their climate awareness came from a feeling of being compelled to fly. They felt that they had no choice but to fly to reach a certain destination. Some people justify their air travel by pointing out that other people fly even more. Interestingly, that group tends to fly more often than the average Dutch person. This group actually flies even more than the average person in the Netherlands.

It is also worth noting that a sizeable majority of the population of the Netherlands did not fly at all in 2022. At least one-quarter of Dutch adults have not flown at all in five years. Conversely, 20% of all travellers account for more than half of all leisure flights in the same five years.

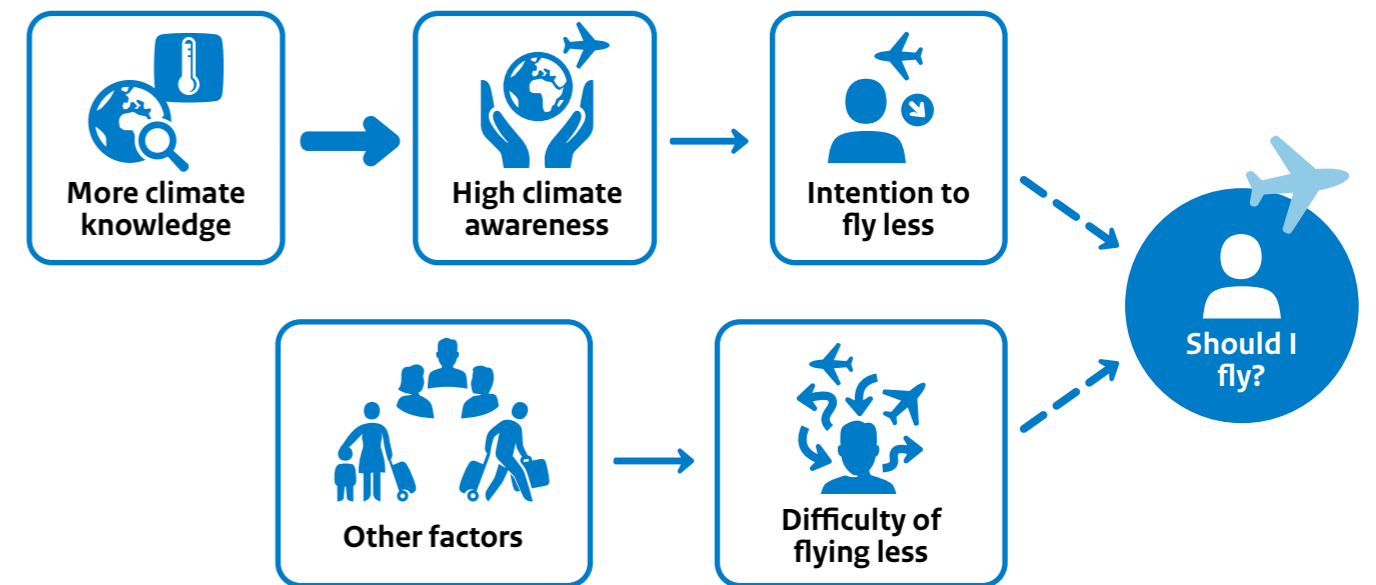
Other factors

Whether people will continue to fly in the future will not only be decided by their climate awareness but also by the extent to which they find it difficult to modify their own air travel behaviour. People who flew a lot as children are frequent flyers as adults too.

Another factor is the extent to which people see themselves as globetrotters. The perception of the social norm of flying is also relevant: the more people feel that others in their own social group like to fly, the harder they find it not to fly.

Travellers see a role for government

Almost all people with a high climate awareness who intend to fly claim that the government and other parties should take the lead in reducing the climate impact of air travel. Behavioural change is key to reducing climate impact. Earlier studies have shown, however, that the extent to which individual consumers do voluntarily change their behaviour is limited. If the government takes further policy measures, such as taxing air travel and limiting capacity at airports, this can contribute directly to climate goals and indirectly to the perception that the government is taking its responsibility.





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1 What can I do to reduce the impact of leisure travel?

The Netherlands has set itself the target of reducing CO₂ emissions from human activities, including from aviation. Scientists tell us that behavioural change will be a key factor in whether we achieve our climate goals. Will people manage to change their own behaviour once they realise how big the climate problem is and what the impact of a flight is on the climate?

Many people fly for leisure

In recent decades, the number of flights people in the Netherlands make for leisure purposes, such as holiday, has increased. The share of holidays with air travel has almost doubled between 2002 and 2019. One-quarter of all holidays includes air travel. These holidays are further from home than other holidays.

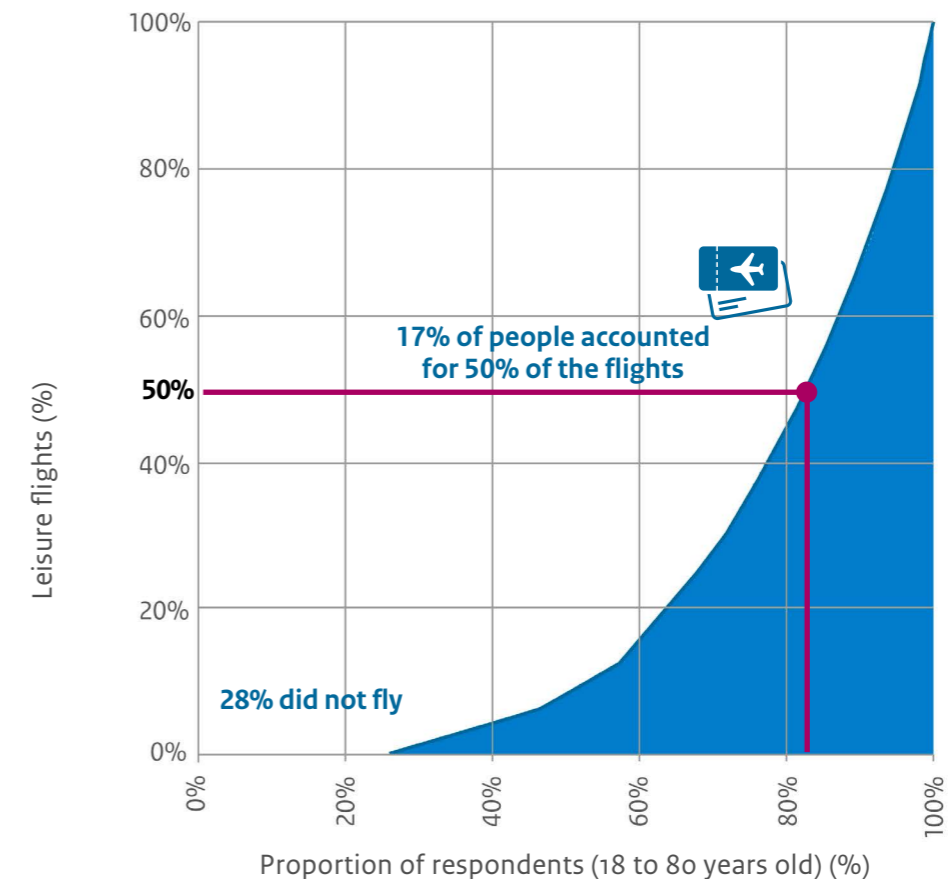
The climate impact of leisure air travel has increased as a result. When people fly, an average of 71% of total CO₂ emissions throughout the entire holiday is attributable to travel on the outbound and inbound journey combined. Planes burn jet fuel, which results in high-altitude emission of greenhouse gases and other byproducts, and these contribute to global warming. This is what we mean when we talk about the climate impact of air travel.

Unequal distribution of air travel

Many adults in the Netherlands do not fly at all for leisure purposes, while others fly a little, and a small proportion flies much more often than other travellers. For instance, our study among the Netherlands Mobility Panel (MPN) shows that one-sixth of all

leisure travellers account for half of all flights. At least one-quarter of Dutch adults have not flown at all in five years. Conversely, 20% of all travellers account for more than half of all flights in the same five years.

Distribution of leisure flights





"Behavioural change supported by policy, infrastructure and socio-cultural factors enables climate resilient development."

IPCC (2023) Climate Change 2023, Synthesis Report

Air travel plans for the future

More than 1 in 3 people who flew in the past five years intends to fly less compared to the situation before the coronavirus pandemic. Most people intend to carry on flying just as often as before. Less than 5% of the people on the Netherlands Mobility Panel intend to fly more. Almost one-quarter have no experience of flying and likewise have no plans to start.

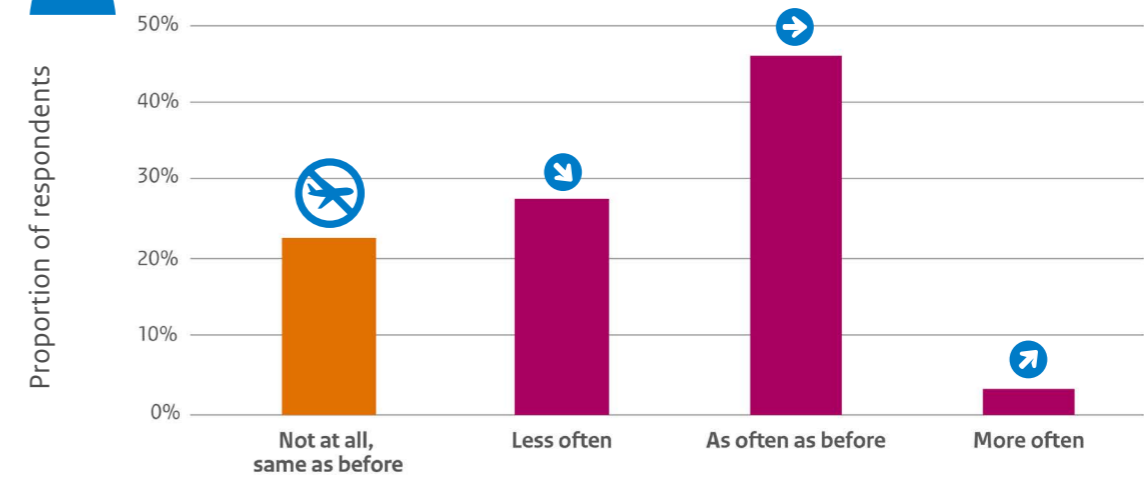
Ambitions to tackle climate change

The Netherlands has set a target of reducing CO₂ emissions from human activities, including from aviation. Technological innovation and the organisational options to reduce climate impact are often central to achieving climate goals. For instance, the roll-out of new aircraft or more sustainable fuels. However, aviation is growing faster than the improvements are emerging. What's more, aircraft remain in service for decades before they reach the end of their economic life. Many innovations require a lot of time, money, resources or space.

The Intergovernmental Panel on Climate Change (IPCC) argues that a whole swathe of changes is needed to reduce climate change. Apart from using alternative technologies, behavioural change is a key element. Behavioural change can start to have an impact in the very short term. For this reason, the Dutch climate roundtables devote some attention to consumers, to help them and to encourage them to make climate-friendly choices.



"I intend to travel by air..."



2 High climate awareness reduces the intention to fly

People with a highly developed awareness of the climate impact of air travel and recent air travel experience intend to fly less frequently in the future than they have in the past. Climate awareness is strongly influenced by the degree to which they know about the climate impact of air travel.

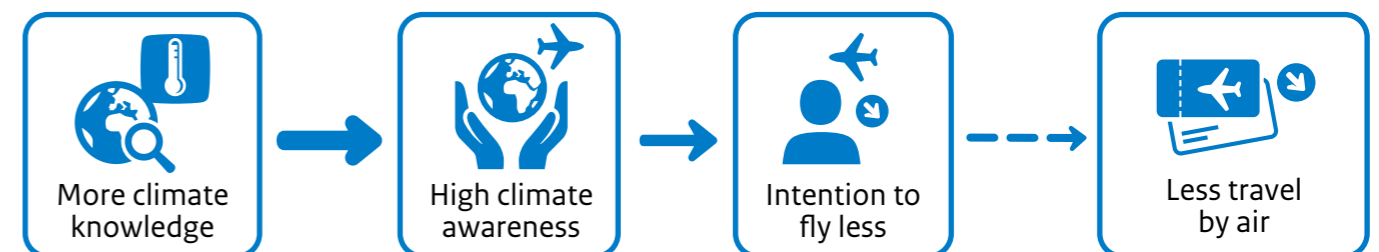
It goes without saying that people who currently do not fly at all cannot fly any less. The absolute number of intended flights is lower for people with a highly developed climate awareness than for people with a low climate awareness. On average, Dutch adults intend to fly once in the coming two years. For people with a high awareness of the climate impact of air travel, this figure is significantly lower: many of them do not have any plans to fly at all.

When we talk about awareness of the climate impact of air travel in this brochure, we mean the extent to which people realise that air travel is harmful to the climate, in particular the carbon emissions from aircraft. People who are aware of this also feel a sense of urgency: they regard climate change as a serious problem.



People with a high climate awareness also feel more in control about reducing their air travel behaviour. They see enough alternatives to travelling by plane, such as travelling by train, a cycling holiday or a staycation. The opposite is also true: people with a low level of climate awareness are more inclined to believe that they cannot change their own air travel behaviour.

Whether people actually will change their behaviour in practice remains to be seen. The number of flights they will make in the coming years is unknown at this stage. In 2022, the respondents flew less than in the two years before the coronavirus pandemic. The decline is greater among people with a highly developed climate awareness. This gives us some indication that climate awareness does influence actual air travel behaviour.



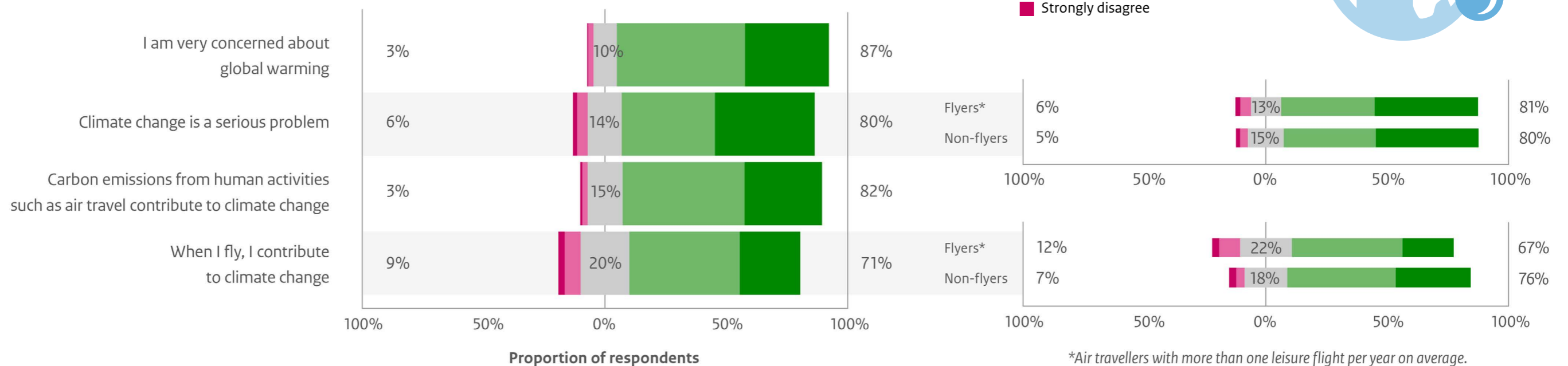
Climate awareness in general is on the rise

Many people are concerned about the climate. In recent years, the general level of climate awareness among participants in the Netherlands Mobility Panel has risen. In 2020, 26% of respondents strongly agreed with the proposition that climate change is a serious problem. By 2022, this proportion had grown to 41%. The Netherlands Institute for Social Research (SCP) and other research bodies recognise that people are increasingly aware of the climate problem and its urgency.

Frequent flyers are less climate-aware

People who fly frequently score lower on awareness of the climate impact of air travel than people who do not fly. The responses to the propositions that were put to the respondents show that both groups recognise the seriousness of the climate problem in general. However, when asked about the impact of their own air travel, respondents with more air travel experience were more lenient about their own part in climate change than less experienced flyers.

Awareness of the climate impact of air travel



Lower climate knowledge results in lower climate awareness

People with little knowledge of how a flight contributes to climate change have a less highly developed climate awareness. In other words, there is a strong correlation between knowledge of the climate impact caused by air travel and awareness of the harm it causes. The opposite is also true: people with more knowledge of the impact air travel has on the climate have a higher climate awareness. However, having more information about climate change does not necessarily lead to an increase in someone's level of knowledge. The literature has shown that people find it difficult to internalise new information. This applies all the more to information that does not tally with people's existing knowledge and behaviour. For this reason, other researchers have said that it would be more effective to engage citizens in the solutions and to combine this with other measures.

Poor knowledge of the climate impact of air travel

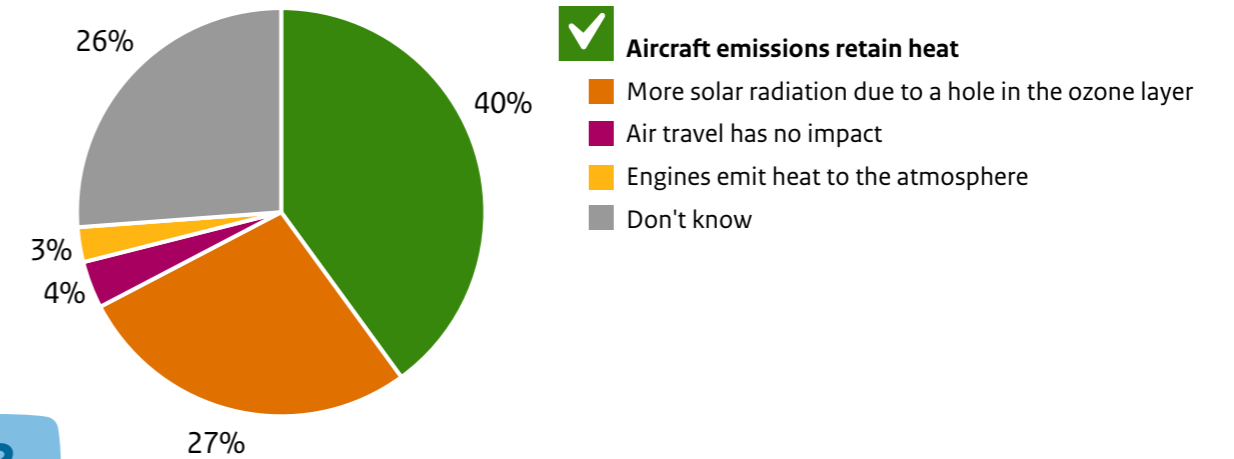
What do people know about the climate impact of air travel? Research into this has shown that 40% of respondents know that air travel contributes to climate change by releasing greenhouse gases into the atmosphere when jet fuel is burned. The majority of the population does not know this and therefore has no idea how air travel contributes to climate change. 30% of respondents wrongly posited that the hole in the ozone layer or the hot aircraft engine were responsible for climate change. One-quarter of respondents said that they did not know how a plane would affect the climate. A small proportion, around 4%, rejected the idea that air travel contributes to climate change. One-quarter of respondents said that they did not know how a plane would affect the climate. A small proportion, around 4%, rejected the idea that air travel contributes to climate change.

People also found it difficult to estimate the degree to which air travel impacts the climate. For example, when asked to compare a flight to another mode of transport, they sometimes overestimate the climate impact of a short flight: 38% believe that a flight to Turkey generates more emissions than a cruise to Mexico. At the same time, many respondents underestimate the climate impact of a long-haul flight.

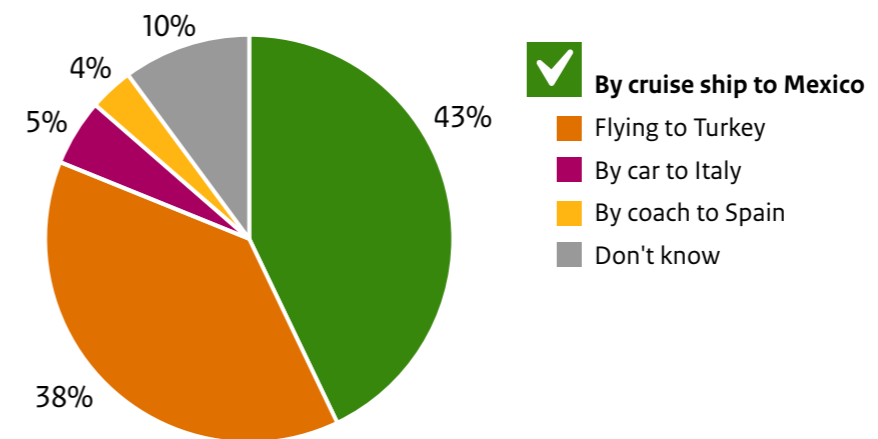
The differences in the level of knowledge between people are difficult to explain. A high standard of education and a young age may explain some of the high score, but not all of it. Other factors, such as gender, working in the aviation industry, car ownership and urban development, do not go any way towards explaining the knowledge gap.



How does air travel contribute to global warming?



Which holiday do you think has the worst impact on the climate?

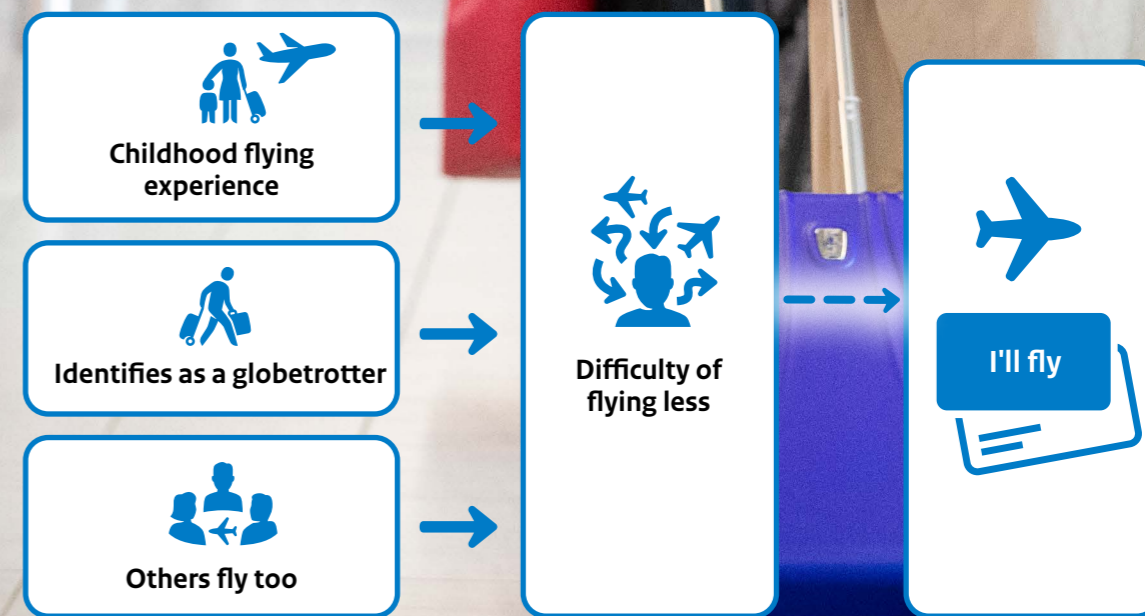


3 Well, if other people choose to fly...

Climate awareness is not the only factor that determines whether people will fly less. Some would like to fly less but see little opportunity to change their air travel behaviour. Other factors are at play here: the idea that other people fly too, childhood experience of air travel and the feeling of being a globetrotter.

People view their own behaviour in the light of how other people behave, such as parents, friends, influencers and celebrities. Interestingly, it is the perception of other people's behaviour rather than their actual behaviour that counts.

If friends regularly post on social media that they are flying to their holiday destination in Spain or Turkey, you can start to believe that this is the norm. Similarly, the proliferation of holiday flight promotions, travel programmes about far holiday destinations and personal accounts on social media all contribute to this belief. This influences people's perceptions, as people appear to actually book holidays based on what they see on social media. And once they are active as holiday flyers, they find themselves surrounded by other flyers at the airport and on the plane. This creates the impression that everyone is flying. At peak times, airports have to deal with many more passengers than most other weeks of the year. This distorts the impression of how busy airports are: most people will only be there during peak times.



People who believe that others have embraced travelling by air see fewer opportunities to curtail their own air travel behaviour. They feel less in control of their own choices. This, of course, doesn't mean that there are no alternative modes of transport or destinations. The most common reason given for flying was that they wanted to go to a holiday destination that is easier to reach or can only be reached by air. Unless they change their destination, they would find it difficult to avoid flying. This also increases the chance of them actually deciding to do that.

Whether people decide to fly or not is a trade-off between wanting to fly less and the sense of being in control enough to do just that. Our study shows that there is a link between wanting to fly less and being able to fly less. This means that people who feel less in control also are less inclined to have the intention to fly less. The opposite is also true: people with a strong intention to fly less see plenty of alternatives to air travel.

Air travel experience increases the chance of intending to fly again

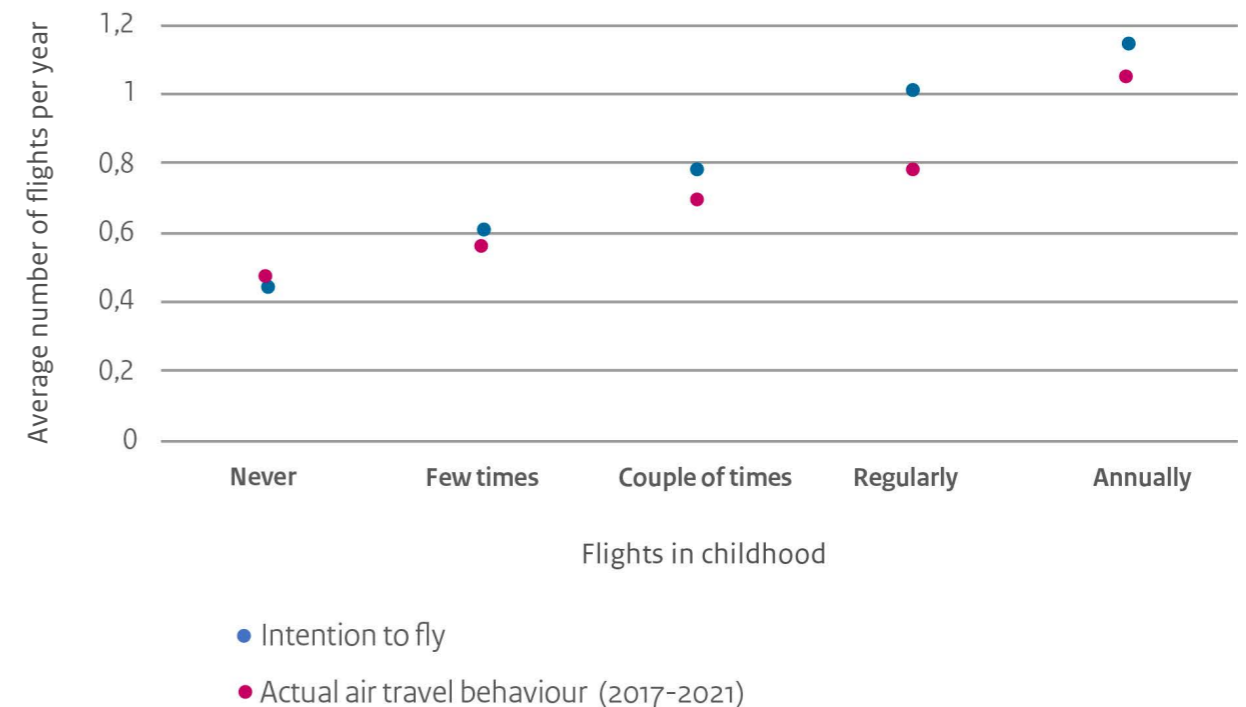
People who have recently flown often intend to continue to travel by air. This also holds true for people who have flown in their childhood years; they have a strong

intention to continue flying in the years ahead. When considering whether to fly or not, people are therefore strongly influenced by experience.

Identifying as a globetrotter

Some people like to see themselves as globetrotters. People who like to travel, especially to distant destinations, are more likely to see air travel as part and parcel of the journey. This makes it more difficult for them to cut down on air travel. Identifying as a globetrotter is therefore a crucial factor when considering whether to fly or not. These people assign greater value to the journey and the exotic destination than to how they get there. The implication is therefore that they will be more open to using alternative modes of transport to air travel. These alternatives may actually be a good match to their desire to go on a unique journey.

Relationship between air travel frequency and childhood air travel experience

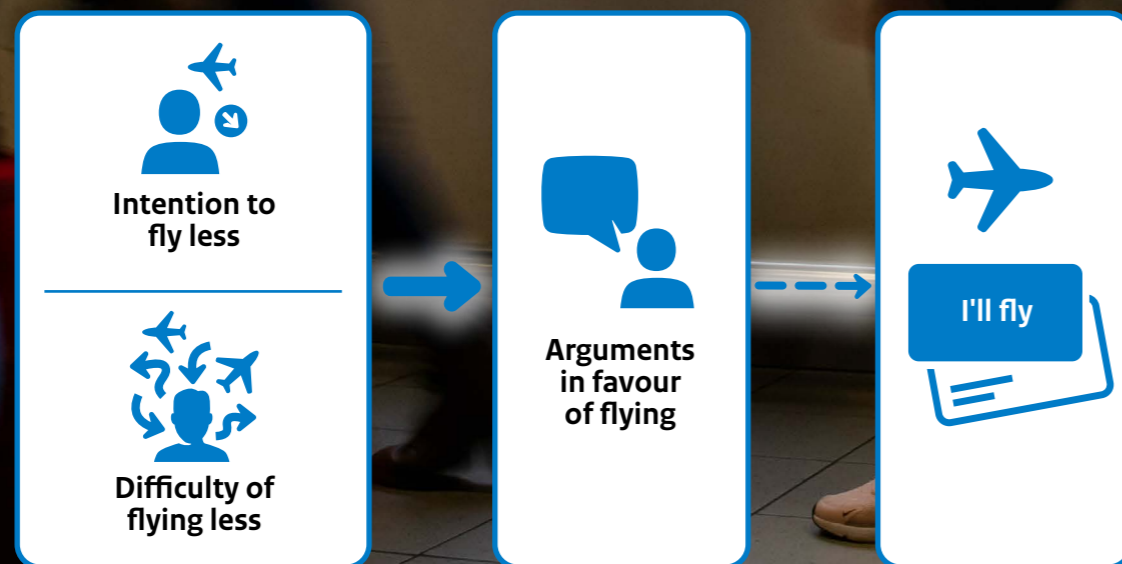


4 Arguments in favour of flying despite climate awareness

When deciding whether to fly or not, travellers consider how much they would like to reduce their air travel and how difficult that will be for them. Their conviction to fly less may not tally with their behaviour. People apply various strategies to try and close the gap between their values and their behaviour. What strategies do they use?

Adapting behaviour to climate awareness




The first option is to bring their behaviour into line with their convictions. Our study shows that there is a clear relationship between climate awareness and air travel intentions. Some respondents wanted to change their behaviour, but only saw limited opportunities to make good on their intention. In general, people find it difficult to fly less.





Trivialising the climate problem

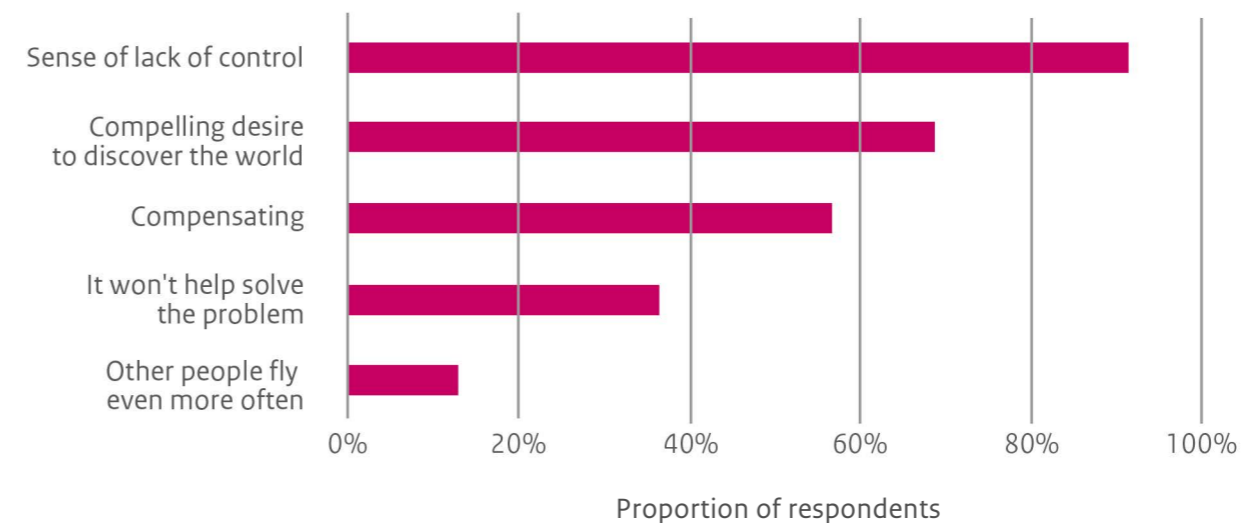
Another possible strategy to close the gap between convictions and behaviour is to trivialise the problem. For instance, people can – unwittingly – trivialise the seriousness of climate impact. People with a lot of air travel experience, for example, score lower in terms of climate impact than people who do not fly. Even people who work in the tourism sector or aviation demonstrate a lower awareness of the impact of air travel. Lower climate awareness may be the result of a subconscious strategy to bring their conviction into line with their behaviour.

		Intention to fly	
		No 	Yes 
 Awareness of the climate impact of air travel	Below average	21%	33%
	Above average	23%	23%

Arguments in favour of flying despite climate awareness

Around one in four people (23%) in our study demonstrated an above-average climate awareness and had the intention to fly at least once in the next two years. This group had other strategies to justify their behaviour. Next we zoom in on this subgroup.

Reasons to fly despite climate awareness



Despite a high level of climate awareness, nine out of ten people who want to fly for leisure say they feel they are not in control. They see no alternative for air travel in satisfying their travel needs. People who feel they are in control of the choice of whether to fly or not when planning a leisure trip are more likely to fly less.

Almost three out of four respondents in the subgroup feel the need to be free to discover the world, and believe this is a good reason to keep flying despite their climate awareness. What is important for them is the wonderful adventure that travelling by air offers; they say they want to enjoy life to the fullest. Half of the subgroup do not believe that the social downsides of air travel outweigh the individual benefit of being free to discover the world. These are often relatively young respondents.

More than half of the subgroup also said that they offset their carbon emissions from air travel by participating in compensation schemes or by making responsible choices on other fronts. We have not studied the extent to which the emissions are actually offset or can be compensated.

Some respondents in the subgroup emphasise that reducing the frequency with which they fly would be pointless. Flying less would not help solve the problem because the plane will fly regardless. If they refrained from buying a ticket, someone else would buy it.

Finally, one in six people in the subgroup (17%) claimed that there are other travellers who fly even more than they do. But the picture is somewhat skewed here: these people actually fly 25% more than the average adult population in the Netherlands.



5 Beyond the individual consumer

Consistent public policy aimed at making aviation more sustainable contributes to the perception that the government is taking its responsibility to reduce the climate impact of air travel. Only a limited voluntary change in behaviour can be expected from individual consumers.

Many respondents with climate awareness and the intention to fly feel responsible – in part at least – for reducing the climate impact of air travel. At the same time, many people in this subgroup claim that other parties are responsible. This is shown in the diagram opposite, where the two rectangles of ‘others’ and ‘myself’ overlap. About 9% of respondents only tick the ‘myself’ box when asked who is responsible for reducing the climate impact of air travel.

Limited agency of consumers

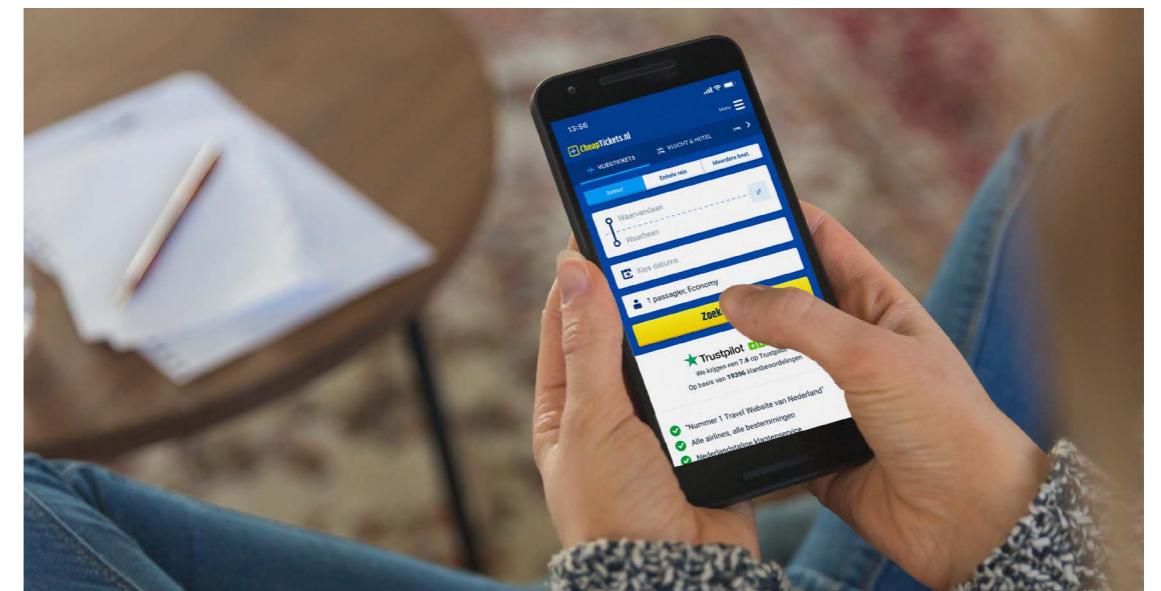
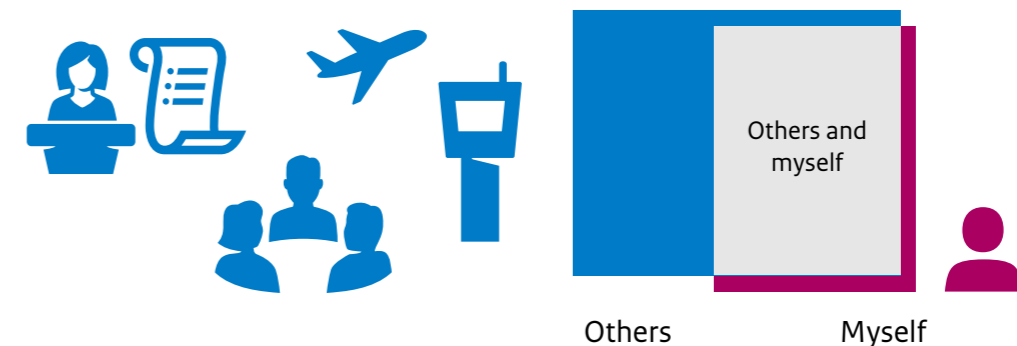
Appealing only to individual consumers to change their behaviour voluntarily to help reduce the climate impact of aviation ignores the position that other parties have in the transition to sustainable aviation. A combination of personal, institutional, social and technological transformations is needed to reduce the climate impact of aviation. This goes far beyond the capabilities of an individual holidaymaker.

What's more, consumers are bombarded with incentives to travel and new travel ideas. In the mainstream media, the call to prepare for their next trip is inescapable. Social media channels are awash with pictures of holidays, sometimes authentic posts, sometimes in the form of paid content. Neighbours, friends and family like to brag about their next far-flung adventure.

In addition, many travel options now carry a label, such as sustainable, responsible choice or even climate neutral. It is possible to fly ‘responsibly’ and to travel sustainably. However, this green seal of approval does not always prove to be justified in practice. The gap between emissions and offsets is often huge. Airlines and airports have therefore been repeatedly rapped on the knuckles for misleading advertising.



Who is responsible for reducing the climate impact of air travel?



What's more, people are more than mere consumers. Treating them as mere consumers ignores the many roles they fulfil – and can fulfil – in society at large. Parents and caregivers, for instance, clearly have an exemplary role to play for their children. The choices they make will have an enduring influence on the later behaviour of their offspring. People can also be involved in other ways to combat the climate crisis, for example, through citizen advisory councils or as members of an environmental lobby group.

Government, take the lead

Reducing the climate impact of aviation is largely the responsibility of other parties. At least, this is the view of 90% of respondents who say that they want to fly and also understand that air travel has an impact on the climate. Half of them consider other parties entirely responsible, as the blue part of the diagram on the previous page shows. Laying responsibility at the door of other parties allows these respondents to deal more easily with the gap between their climate awareness and the desire to fly.

Around 70% of people with climate awareness and the intention to fly see a key role for the government in tackling the climate problem. They expect the government to act and take the necessary measures.

If the government takes other policy measures, such as taxing air travel and limiting capacity at airports, this could help reduce the climate impact of air travel. At the same time, these measures give credence to the feeling among the population that the government is taking its responsibility. And this helps to increase the effectivity of any possible behavioural intervention aimed at reducing air travel.

Respondents also cited airlines and, to a lesser extent, airports as bearing responsibility for making air travel sustainable.



About

Method

The primary objective of this study was to discover the extent to which a high awareness of the climate impact of air travel among leisure travellers leads to a decrease in their intention to fly. To answer this question, we asked members of the Mobility Panel Netherlands (MPN) to complete a questionnaire. The 1,956 respondents who supplied a usable response are representative of the adult population of the Netherlands.

Background report

For more information about the method and results, please refer to the Dutch background report, which can be downloaded from the website www.kimnet.nl: Zijlstra, T. & Uitbeijerse, G.C.M. (2023), *Klimaatbesef en minder vliegen? Achtergrondrapport*. The Hague: Netherlands Institute for Transport Policy Analysis (KiM).

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