



# How to distinguish climate sceptics, antivaxxers, and persistent sceptics: Evidence from a multi-country survey of public attitudes

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Distrust in science is well known to be a key driver of climate scepticism. People who reject the scientific consensus are more likely to disbelieve that global warming is happening, caused by anthropogenic activity or is having (or will have) adverse effects, making them less willing to adopt lifestyle changes or support policies consistent with climate mitigation. Recent studies suggest that similar concerns underlie hesitancy towards COVID-19 vaccination. Compared to people who trust science, science sceptics are more likely to believe that COVID-19 poses a smaller threat or originates from a different source to that advanced by mainstream science and, consequently, are more likely to be hesitant over partaking in individual behaviours that are critical for reducing the spread of the virus such as social-distancing, self-isolation or vaccination.

Efforts to explain sceptical attitudes towards controversial scientific issues demonstrate that trust in scientists is consistently more influential than other factors such as access to accurate information, ideological orientation and belief in conspiracy theories. There are particularly strong grounds for expecting that distrust in science is a key driver of scepticism on climate change and COVID-19 vaccination. Most obviously, the complex, technical nature of both issues renders them less accessible to laypeople, allowing trust in scientific experts to act as a cognitive shortcut for accepting mainstream understandings that are largely premised on scientific consensus. In addition, effective mitigation of both issues imposes significant societal costs, including radical behavioural changes such as modifying lifestyles to reduce carbon footprints and complying with social-distancing and lockdowns to prevent the spread of the virus, which are associated with feelings of powerlessness and impetus for questioning the scientists who inform these intrusive policy responses.

We investigate the influence of trust in scientists over scepticism towards climate change and COVID-19 vaccination among the public. Our analysis is based on econometric analysis of novel survey data administered in eight key countries for global climate and COVID-19



mitigation (Australia, Brazil, China, India, Japan, South Africa, UK and US). Thus, we examine four major economies from the Global North and four from the Global South.

Existing research on the relationships between trust in scientists and climate scepticism and vaccine hesitancy focuses mainly on polarised national contexts but largely omits other countries that are increasingly important for international responses to both challenges. Using large representative national surveys, we (separately) ask respondents about their views towards a core aspect of climate scepticism (how big a threat climate change is for their country) and antivaxxism (how likely they are to take a COVID-19 vaccine if offered one). We also ask respondents how much priority should be given to the economy vis-à-vis combatting climate change or COVID-19, which was correlated (to varying degrees across countries) with sceptical attitudes towards climate change and COVID-19 vaccination respectively. We distinguish between, ‘double-issue’ or persistent sceptics, respondents who are sceptics on both climate change and COVID-19 vaccination and ‘single-issue sceptics’, climate sceptics who are not antivaxxers, and antivaxxers who are not climate sceptics.

Although there are a few notable differences across countries, perhaps most striking is the consistency of many of our findings despite the diversity of countries examined. Our analyses indicate that respondents who distrust scientists are significantly more likely to be both climate sceptics and antivaxxers (or give complete priority to the economy over climate and COVID-19 mitigation), feel that climate change does not pose a threat to their own country without being antivaxxers (or give complete precedence to the economy over climate but not COVID-19 mitigation) and feel strongly about not taking a COVID-19 vaccine without being climate sceptics (or give precedence to the economy over COVID-19 but not climate mitigation). We also find important nuances in the role of trust in driving the different combinations of sceptical attitudes: the results of our pooled models and single country regressions show that trust is consistently a much weaker driver of sceptical attitudes for double-issue sceptics compared to those who are only sceptics towards climate change or COVID-19 vaccination separately. This hard core of persistent sceptics tend to exhibit the typical sceptic profile such as far right-ideological orientation and strong distrust of scientists, the national government and television news. Consistent with previous research, our analyses suggest that the diminished influence of trust in science over persistent sceptics stems from an underlying psychological need for these individuals to reject scientific consensus as a way of reinforcing the underlying worldviews, ideologies and fears that comprise the sceptic mindset. These views contrast with those of single-issue sceptics, who do not possess a similar psychological bias against elite institutions.

Our findings have important implications for efforts to overcome sceptical attitudes towards climate change and COVID-19 vaccination and the challenges they pose for the effective mitigation of both issues. Ultimately, they suggest that attempts to dispel scepticism will need fine-tuning to target different sceptic profiles and sources of science denial, which are likely to benefit from further efforts to develop understandings about these relatively small, but diverse sceptic groups. While it is well documented that psychologically-motivated sceptical attitudes are difficult to erode, our findings suggest that efforts to build trust in scientists could overcome climate scepticism and COVID-19 vaccine hesitancy among most climate sceptics and antivaxxers.

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