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Public Attitudes to Responding to Global Catastrophic Risks: A New Zealand Case Study

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ABSTRACT

Human civilization faces a range of global catastrophic risks (GCRs), including nuclear war, bioengineered pandemics, major solar storms, and uncontrolled artificial intelligence. In New Zealand, limited information exists on public views about whether the government should respond to such risks. A representative survey of 1012 adults in July 2024 included two questions on GCRs. Sixty-six percent (95%CI: 63%–70%) supported the government developing specific plans to address extreme risks, and 60% (95%CI: 56%–63%) supported establishing a dedicated commission or agency. In multivariable models, support increased with age, education, income, and trust in scientists (the latter also associated with support for an agency). There were no significant differences by gender, ethnicity, or political orientation. These findings suggest a clear majority of the public supports government planning for catastrophic risks. Further research, including repeat surveys and deliberative methods such as citizens' assemblies, could help explore underlying reasons for opposition and how the public weigh policy trade-offs.

1 | Introduction

Humanity faces a number of risks that pose a threat to us on a global scale. A recent report commissioned by the US Government outlined several such global catastrophic risks (GCRs): “artificial intelligence; asteroid and comet impacts; sudden and severe changes to Earth's climate; nuclear war; severe pandemics, whether resulting from naturally occurring events or from synthetic biology; and supervolcanoes” (Willis et al. 2024, 221). Similarly, assessments made by nine European countries and Swiss Re cover the following types of risks: “electricity supply shortage, nuclear accident, pandemic, severe space weather, and volcanic outbreak” (Kohler 2023, 4).

There is growing concern among domain experts and super-forecasters about such GCRs (Karger et al. 2023), with expert assessments suggesting that the likelihood of such events is

both non-trivial and increasing (Mecklin 2025; World Economic Forum 2025). In response to these warnings, researchers and civil society organizations have urged governments to proactively plan for these scenarios, to reduce vulnerabilities and mitigate—if not prevent—harm.

New Zealand is an interesting case study country for considering responses to GCR. It has previously established a “Commission for the Future” (von Knebel 2023), which reported on the impact of nuclear war (Preddey et al. 1982), along with a Planning Council that conducted a very detailed study of this topic in the 1980s (Green et al. 1987). The country has a long history of community action opposing nuclear weapons and central government-adopted legislation that bans nuclear weapons (Schregel 2015). Most recently, in 2024, the New Zealand Government co-sponsored (with Ireland) a United Nation's resolution to further explore nuclear war impacts (Diaz-Maurin 2024).

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There has also been work in New Zealand on the risk of very large earthquakes (Crimp 2024) and on preparing for severe space weather events that could damage the national electrical grid (National Emergency Management Agency 2024).

Nevertheless, New Zealand remains very unprepared for major risks, according to an expert review (Gluckman and Bardsley 2021) and recent studies on nuclear war/winter (Boyd et al. 2023, 2024). In particular, despite the apparent national self-sufficiency in its food supply, New Zealand is extremely dependent on imported liquid fuels for agricultural machinery (Boyd et al. 2024; Wilson, Prickett et al. 2023). Another anomaly is the lack of GCR preparation in New Zealand despite island nations, especially those in the Southern Hemisphere, probably being relatively more likely to survive such catastrophes, for example, nuclear or volcanic winters that could have global impacts (Boyd et al. 2023; Wilson, Valler et al. 2023) (although New Zealand is a volcanically active country, research indicates the probability of a supervolcanic eruption in its territory to be very low Barker et al. 2021; Bebbington 2020).

Governments need to properly address cross-border risks; however, this may be challenging without public support. Public opinion not only reflects societal values and priorities but also plays a key role in shaping the political agenda. Policies that attract broad public support are more likely to gain traction among decision-makers, influence party platforms, and be prioritized in legislative processes (Burstein 2003). Surveying public attitudes enables us to assess the level of backing for a given policy, anticipate possible sources of resistance, and better understand the social and political landscape into which a policy would be introduced. Such insight is critical for informing advocacy strategies and evaluating the likelihood that the policy will ultimately be adopted.

Public attitudes toward catastrophic risk preparedness in New Zealand have been explored to some extent in the past. For example, a 1982 survey reported by the Commission for the Future found that 64% of respondents supported New Zealand making preparations for a potential nuclear war in the Northern Hemisphere (Preddey et al. 1982). A subsequent survey for a Defence Committee of Enquiry reported that 82% supported some preparation or plans to survive nuclear war (Corner et al. 1986). More recently the Department of Prime Minister and Cabinet has commissioned regular national surveys on risk perception. Although these don't address specific GCRs, they have found that 82% of respondents surveyed in 2024 believed that the central government has a responsibility to protect and respond against risks from "emerging technologies" (Ipsos 2024). The results for a central government role relating to "Disruption of critical infrastructure due to attack" were even higher at 87%.

Therefore, in this study we consider what the New Zealand public think about the government's potential role in planning for a global catastrophe. Using data from a representative survey, we aimed to describe public support for two (broadly framed) government initiatives focused on GCRs and to use a multivariable analysis to consider the socio-demographic correlates of this support.

2 | Methods

The survey was conducted in July 2024. Survey participants (18 years or older) were recruited through the commercial online panel provider Dynata (dynata.com; ISO 20252 certified). Age and gender recruitment quotas were set to reflect the national population, whereas an ethnicity quota deliberately oversampled participants identifying as Māori, the indigenous people of New Zealand (30% of sample). This was to increase explanatory power for this population in recognition of the Treaty of Waitangi obligations of researchers in New Zealand (Reid et al. 2017). Participants providing informed consent completed the survey on the Qualtrics platform. Participants failing both of two short instructional manipulation checks embedded in the survey (e.g., "please select the response 'Neutral' as your answer") were excluded from the final sample and did not count toward quotas. A total of 1012 participants completed the survey. The (unweighted) final sample included 505 women (49.9%), 502 men (49.6%), and 5 (0.5%) selecting "Other" gender category, with a mean age of 45.0 years (SD = 16.7). Full sample characteristics are reported in Table S1.

The survey was developed by the lead authors to explore a range of research questions concerning New Zealanders' perceptions of public health and their policy preferences. It included a broad set of questions on public health topics, including a battery of items measuring support for 19 existing or proposed policies relating to public health issues. Examples of these policies include government provision of free Covid-19 tests and limits on the advertising of alcohol (not reported here). The final list of policies was based on a combination of items drawn from previous studies (Grunseit et al. 2023; Peniamina et al. 2024), research interests of the wider project team, and consultation with stakeholders such as health advocates and policy professionals. This section of the survey included two questions related to GCR policy, which are the focus of this study. Policy support items were prefaced with the preamble: "We are interested in what everyday New Zealanders think about a range of proposed policies. Below is a list of actions that the New Zealand Government is taking or could take. For each of the ideas below, let us know how much you support or oppose the Government taking such an action." The two GCR items were:

- "Developing specific plans to deal with extreme risks such as the release of a bioengineered infectious disease or a Northern Hemisphere nuclear war."
- "Establishing a commission or agency that is tasked with monitoring and reporting on extreme risks, such as bioweapons, nuclear war or rogue artificial intelligence."

The level of support was captured for each using a widely accepted Likert scale ranging from "Strongly Oppose" (1) to "Strongly Support" (7).

Participants also provided self-reported political orientation (on a 7-point scale from very liberal/left-wing (1) to very conservative/right-wing (7)) and reported trust in various sources of information (i.e., "scientists," "politicians," and "mainstream media," on a 5-point scale ranging from "Not at all" (1) to "A great

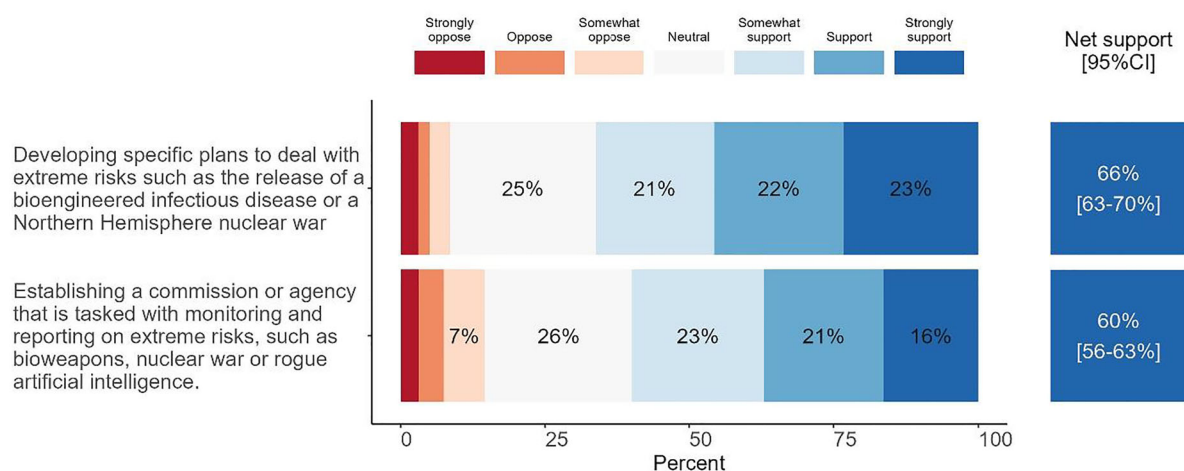


FIGURE 1 | Levels of support by the New Zealand public for governmental responses to catastrophic risks.

deal” (5)). Given the focus of the wider survey, the trust variables were specific to public health and framed with the preamble: “How much would you trust information on public health issues from the following sources?” (see Table S2 for full item wording).

For the analysis, we applied raked weights to adjust the sample to match the 2023 Census population for age, gender, ethnicity, and education using the *survey* R package (Lumley 2011). We also conducted multivariable analyses to examine the association between several demographic and attitudinal variables and support for the policies. We fitted weighted general linear models (*survey::svyglm()*) that included several demographic variables: gender, age, ethnicity, income, and highest qualification, as well as political orientation and reported trust in information sources. For multivariable analyses, ethnicity was recoded using an administrative prioritization approach (Yao et al. 2025).

All participants provided informed consent, and the research was approved by the University of Otago Human Ethics Committee (project number 24/0275). The data and R code used in this study are available on the Open Science Framework at <https://osf.io/jtgy8/>.

3 | Results

As detailed in Figure 1, a majority of respondents, at 66% (95%CI: 63%–70%), expressed support for the government “developing specific plans to address extreme risks.” Similarly, 60% (95%CI: 56%–63%) supported the “establishment of a dedicated commission or agency.” In contrast, 8% (95%CI: 7%–11%) and 15% (95%CI: 12%–17%) had some level of opposition to either plan or a dedicated agency, respectively. A weighted regression model indicated that the difference in net support between the two policies, 6.4 percentage points, was statistically significant (95%CI: [3.0, 9.8]; $p < 0.001$).

To identify the socio-demographic correlates of support, we fitted two weighted linear regression models. The results in Figure 2 indicate that support for the government developing specific plans to address extreme risks significantly increased with increasing respondent age, level of education, and income level and with trust in scientists as an information source.

However, there were no significant differences in support by gender, specific ethnic group, or political orientation (liberal vs. conservative). Considering support for the establishment of a commission or agency to address extreme risks, we find few significant predictors. Relative to participants coded as European, participants coded as “Other” ethnicity expressed greater support. Support for an agency or commission was higher among those who were more trusting of scientists as a source of information. Full model results are reported in Table S3 (descriptive statistics and correlations reported in Table S4).

Across the two proposed government actions, trust in scientists was the only consistent predictor of support. Figure 3 visualizes predicted effects, offering more detail on the relationship between respondents’ trust in scientists as an information source with support for government planning and establishing an agency.

4 | Discussion

4.1 | Support for Government Action

The key finding of this survey is that there exists majority public support for the New Zealand Government to progress work around planning for GCRs. This majority support is consistent with other contemporary data for New Zealand. That is, the recent DPMC survey data in terms of 82% of respondents believing that central government has a responsibility to protect and respond against risks from “emerging technologies” and so forth (see Section 1). In comparison to international work, US voters have been surveyed concerning the management of the risks of advanced artificial intelligence (Gruetzemacher et al. 2024). Here, a majority (53%) favored international governance (international treaties and intergovernmental organizations) over that of governments (19%) or companies (28%).

We note that a higher proportion of our sample expressed support for “developing specific plans” compared to “establishing a commission or agency.” This may reflect a reticence toward increasing bureaucracy in favor of more concrete action, though this remains speculative. Although a small but notable proportion of New Zealanders (8%–9%) are actively opposed to government

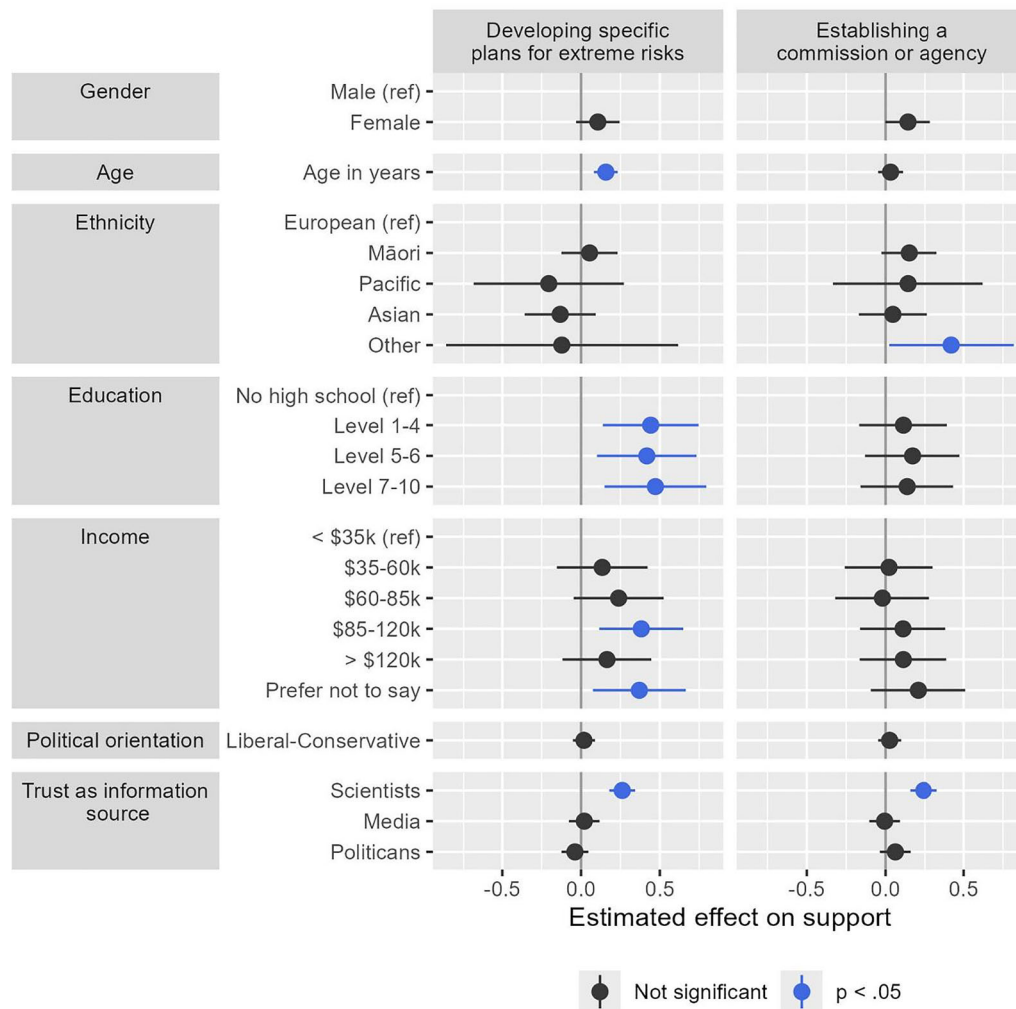


FIGURE 2 | Predictors of policy support. Results of survey-weighted linear regression models regressing support for government actions onto demographic and social predictors. Points represent standardized regression coefficients with 95%CI.

action on extreme risks, a much larger segment—around a quarter of respondents for each policy statement—express neither support nor opposition. This raises an important question: Why do some New Zealanders oppose or remain ambivalent about developing plans or agencies to manage extreme risks? Although this study was not designed to answer this question directly, we can offer some possible explanations and suggest avenues for future research.

Potential reasons for opposition or ambivalence include a lack of information or awareness about extreme risks; skepticism about the likelihood or severity of such risks; doubts about the government's ability to take effective action or a sense of fatalism; or the perception that other issues are more pressing and deserving of government attention (Wiener 2016). Further survey research is needed to understand the prevalence of these beliefs and their relationship with support for government action. Longitudinal studies would be particularly valuable in assessing how attitudes evolve over time and could provide stronger causal insights. Additionally, qualitative research could help elicit the underlying reasons for opposition or ambivalence in greater depth.

On the question of competing policy priorities, survey-based experimental designs could offer further insight into how people weigh government action on extreme risks against other concerns. For example, conjoint analysis of different policy scenarios could help identify the trade-offs people perceive when considering government investment in risk mitigation (Christensen and Rapeli 2021).

Although we must defer the question of “why” to future research, our multivariable analyses provide some insight into the “who”—which demographic groups are more or less supportive of action to mitigate risks. Our findings for significantly increased support for “specific plans” on extreme risks with increasing levels of education and income are not surprising, as these groups may be better informed on catastrophic risks and less focused on immediate day-to-day stressors around the cost of living, and so forth. Perhaps more surprising were the support levels being independent of political orientation. This may suggest that more conservatively orientated respondents still see the government as having a role in matters of protection and security against external threats. This specific finding should not be taken as evidence that political views do not matter. The lack of significant relationship

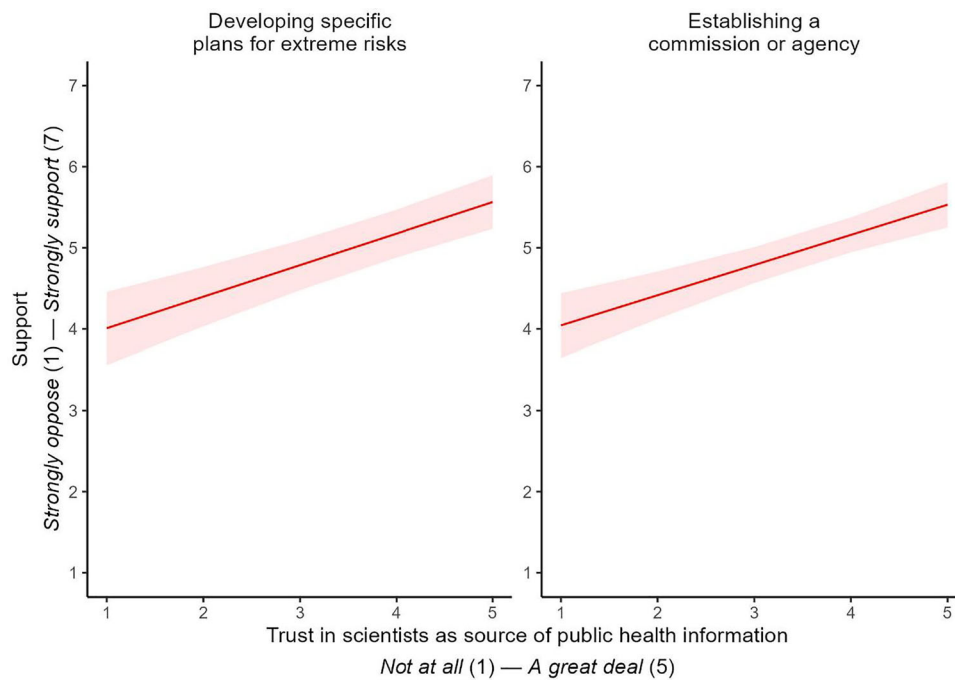


FIGURE 3 | Respondent's support for government responses to global catastrophic risks by level of trust in scientists as information sources while controlling for other variables in the multivariable model; estimated marginal effects from survey-weighted linear regression models.

between political orientation and support for government action may be explained by the broad framing of “extreme risks” in our survey. Previous research has shown that political self-placement is linked to concern over certain specific risks. For example, Kahn et al. (2022) report that more liberal individuals express greater concern over threats with a global impact that arise from inaction (e.g., climate change), whereas conservatives are more concerned by threats with local impacts that arise from malicious intent (e.g., war, terrorism) and are accordingly willing to allocate more hypothetical resources to address such issues (see also Choma et al. 2013). Therefore, the relationship between political ideology and support for government actions to address extreme risks could depend on which specific risks are presented as requiring attention.

Our research finds that individuals who are more opposed to government action on extreme risks also tend to have lower trust in scientists as a source of information. This has important implications for efforts to build public support for extreme risk planning. Because scientists are often the primary communicators on these issues (Johns Hopkins University 2019), their lower credibility among opponents of GCR initiatives may limit their persuasiveness. Our findings suggest that alternative messengers with higher perceived credibility (such as community leaders, ideologically aligned political figures, or influential commentators) may be more effective sources of information for this sub-group. Partnering with such messengers to convey the need for government action could be a more successful strategy for reducing opposition and increasing public support (Balog-Way et al. 2020). For further discussion on framing and communicating extreme risks to motivate action, see recommendations from Johns Hopkins University (2019).

4.2 | Study Strengths and Limitations

A strength of this study is the use of broadly representative survey data for a country that has previous and contemporary survey data, which can help contextualize the findings. This study also involved questions that specifically addressed government planning and having an agency focused on these risks. Nevertheless, the following limitations are relevant.

There were only two questions on GCRs that were embedded in a larger survey on a wide range of public health topics. As such, there was possibly a lack of time and context for the respondents to think deeply over their responses. Therefore, it would be ideal if respondents were engaged on such topics in more deliberative processes such as citizen assemblies or citizen panels.

In particular, the “trust” variable in this primarily public health-orientated survey, may have been impacted by the legacy of the Covid-19 pandemic. That is, anti-vaccination and anti-mandate attitudes among some respondents could have contributed to distrust toward scientists, especially if “scientists” were perceived as public health scientists or epidemiologists. Although such a Covid-19 impact has not been measured for trust in New Zealand public health scientists, “trust in physicians and hospitals decreased during the Covid-19 pandemic” in the United States (Perlis et al. 2024).

Respondents' views may have also been impacted by newsworthy events during the months in 2024 prior to the survey. These included the war in Ukraine (and associated nuclear weapon threats), the spread of highly pathogenic avian influenza in birds and various mammals, and rapid developments with artificial

intelligence. As such, these survey questions should ideally be repeated in future surveys, along with questions that could assess “availability bias.”

4.3 | Potential Research and Policy Implications

Given these limitations, further research is needed. This could include repeated surveys as well as the use of methods such as citizens’ assemblies, deliberative polling, focus groups, in-depth interviews, and community forums to explore the issues in greater depth (Setälä and Smith 2018). As noted above, it would also be valuable to investigate the underlying reasons for a lack of support for government planning (e.g., perceptions of government efficacy or a fatalistic attitude toward catastrophic risks). Comparative cross-country studies could examine how public responses in New Zealand align with those in other high-income countries facing similar threats.

In addition to the need for further research, there is a developing case for the New Zealand Government to begin mitigation and adaptation responses around GCRs. This could involve such options as establishing a dedicated agency focused on such risks (Boyd and Wilson 2021). Alternatively, given the similar risks, a joint agency could be developed for both New Zealand and Australia. Such a trans-Tasman approach has already been suggested in terms of preparing for, and responding to, future pandemics (Graham et al. 2025; Wilson et al. 2024).

5 | Conclusions

These findings of majority public support for government planning around catastrophic risks are compatible with other contemporary New Zealand survey data. As such, there is a case for the New Zealand Government to further consider the research and planning implications. Additional research steps include further surveys and employing deliberative democracy measures such as citizen assemblies to better understand minority opposition to planning and to explore policy trade-offs.

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Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are openly available in OSF at <https://osf.io/jtgy8/>.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section.

Table S1. Survey sample demographics Table S2. Survey item wording

Table S3. Full model results for survey-weighted linear regression models presented in Figure 2 Table S4. Descriptive statistics and weighted Pearson correlations for continuous variables