

COVID-19 and Climate Change: A Snapshot of Policy Priorities in the United States and Canada during the COVID-19 Pandemic

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Abstract

COVID-19 has been the largest emerging threat of 2020s. The global pandemic and its response have thus far relied upon expert opinion, state intervention, and tackling an 'invisible enemy'. Many opinion writers have pointed out that these three strategies are fundamental to solving another pressing global emerging crisis – climate change. Some have also seen this crisis as an opportunity to redirect government funds and recalibrate our global economy with a focus on renewable energy and sustainable business practices. But little research has investigated actual global policy preferences from a comparative perspective. Given the exogenous shock of the ongoing pandemic, what are the public's policy priorities, and how do they differ across countries? Do higher COVID-19 case counts and mortality rates correlate with greater policy preference for COVID-19 solutions? And is the ongoing, longer term existential crisis of climate change lower in rankings in such affected countries? Using a conjoint survey, the present study saw respondents rate policy priorities in terms of urgency and long-term importance, comparing two samples (total N = 2229) from a country with high rates of COVID-19 (United States) and a country with low rates of COVID-19 (Canada), as well as two snowball samples from primarily Oceanian countries. COVID is strongly preferred in terms of urgency and importance, regardless of country. The strongest and consistent correlate of this preference is political ideology, with greater conservatism decreasing the likelihood of prioritizing either COVID-19 or climate change. The author finds that the effect of political ideology varies across countries, with stronger negative effects of political ideology in the United States. Findings from this study provide governments and states with information about the policies they may be pressured to address during the pandemic and in the near future.

Keywords: Climate Change; COVID-19; Policy Priorities; Canada; United States; Australia; New Zealand

1. INTRODUCTION

IN the past ten years, climate change has been elevated in the public consciousness to the point where it is widely regarded as the "number one threat to mankind" (Parry 2020). Increasing temperatures, rising sea levels, ocean acidification, extreme weather events, thermohaline shutdown, and disintegrating carbon sinks are but some of the nebulous effects of this existential threat (NASA 2021). However, the emergence of COVID-19, infecting over 123 million people and killing over 2.7 million (Worldometer 2021), is a much more immediate global disaster, eliciting widespread lockdowns, freezes on international travel, and causing dramatic shifts in lifestyles at the individual- and community-levels. COVID-19 has also reframed discourse about the climate crisis, with op-eds addressing themes of 'building back better', directing government stimulus funds towards sustainability efforts and recalibrating our global economy with a focus on renewable energy and sustainable business practices.

My conjoint survey of policy preferences will serve as a 'snapshot in time' of policy preferences, collecting data primarily from two countries with dramatic differences in the severity of the pandemic. At the time survey data was collected, Johns Hopkins University recorded that the United States was reporting a seven-day average of 104,000 daily COVID-19 cases and 2,900 COVID-19 related deaths, whereas Canada was reporting a seven-day average of 3,500 daily cases and 69 deaths (Hopkins 2021). Conjoint surveys pinpoint respondents' overall policy rankings, and self-reported demographic data will be used to identify whether and to what extent policy rankings are a function of age, gender, political ideology, race, religion, income, and marital status.

Such a study is important because climate change's often intangible, nebulous effects are often forgotten with the fast pace of political life and the new cycle. It is also often difficult for the average person to conceptualize the scale of climate change's impact, and their

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personal contribution towards it, as emissions produced for so many normal day to day goods and services - food, electricity, transportation and lifestyle habits - are invisible (Bossek et al. 2021). However, COVID-19 has many parallels to climate change, as it is also an 'invisible enemy', requiring sacrifice and collaboration across the private and public sectors and civil society, and strong, explicit government leadership. As the world is currently in the throes of a global pandemic, it is a great opportunity to analyze whether the widespread, immediate, short-term impact of a global pandemic is correlated with public perceptions of the urgency of long-term issues like climate change. It would be ideal, but beyond the scope of this paper, to collect similar policy priority data in a year's time as the pandemic declines in severity, and to see if respondents' priorities change over time.

2. LITERATURE REVIEW

Nassim Nicholas Taleb (2007) defines an exogenous shock as a highly unlikely event stemming from the external environment which causes disruptive changes, creates a massive impact, and afterwards we concoct an explanation that makes it appear less random, and more predictable, than it was. Common examples of these include the Global Financial Crisis (GFC) and the first and second World Wars. Some commonly studied country-specific examples of exogenous shocks are those such as the Fukushima disaster (Wakiyama, Zusman, and Monogan 2014), the 2008 Mumbai terrorist attack (Finseraas and Listhaug 2013), and 9-11 terrorist attacks (Chanley 2002). Public sensitivity to these events was understandably high, with Chanley finding government trust in dealing with international concerns doubling immediately after the attack, and Finseraas finding that even in European countries, fear of terrorism increased significantly after the Mumbai attack. However, the longevity of this increase in concern is questionable; Wakiyama found that the reduced energy use caused by the Fukushima shock rebounded promptly to normal levels.

The COVID-19 pandemic would classify as an exogenous shock on both a micro and macro scale, significantly upheaving our globalized economic and political system as it stood in early 2019. As the pandemic reaches its first year, despite cases remaining high, it is important to consider whether the global public has become wary of its effects, and global public health issues in general. Countries have also had vastly different approaches, with several success stories such as Vietnam, Taiwan, and New Zealand, and some devastating results such as Brazil, India, and the United States.

Many studies have already been conducted to assess the impact of the pandemic on public opinion of other pressing international priorities, including security threats (Bove and Di Leo 2020), war rhetoric (Rousseau and Deschacht 2020), connection to nature (Reeskens et al. 2021; Rousseau and Deschacht 2020), and secularization (Molteni et al. 2021). Online search behaviour and surveys are the primary tools used by researchers in the digital COVID era, and some showed significant changes in opinions and behaviours. For instance, Rousseau's study of search behaviour in 20 European countries found a positive spike in search behaviour for nature-related topics, Molteni's Italian survey found Italians with COVID in the family engaging in more religious activities, and Reeskens' Dutch data found increased preference for expert policy makers and stronger leadership. Even governments have recognized the magnitude of this crisis' impact on issue perception; Bove has compared Merkel's lockdown rhetoric to wartime rhetoric to draw a parallel between public perception of both COVID-19 and war.

As climate change is widely regarded as the largest threat to global public health, a few studies have also addressed the impact of COVID-19 on perceptions of climate change and related environmental issues. Nearly all notable studies thus far have found pandemics to be the largest public health concern, with environmental issues in close second. IPSOS's April 2020 survey of 28,000 adults found that 71 percent of respondents ranked climate change as 'just as serious a threat as COVID-19', but less than half prioritised the economy over the environment in the short term (Long, Gordon, and Townend 2020). Eurasia Group's survey conducted June and July of 2020, found pandemics as the top rated emerging risk (beating climate change) (IPSOS 2020), and a similar World Economic Forum survey in October 2020 found that by likelihood, the top three rated risks were related to climate change, and by impact, climate was only beaten by infectious diseases (WEF 2021). The European Investment Bank (EIB) also found climate change to fall to fourth place in its rankings of top global challenges for European and US citizens, only remaining in first place for China, slightly ahead of the pandemic (EIB 2021). It is important to consider that these surveys were conducted earlier in the pandemic when COVID-19's threat was still relatively novel, and asked respondents to compare rank global issues according to immediate risk, rather than long term risk.

The studies on public attitudes towards the environment have been popular among social scientists since the early 80's. A 1982 meta-analysis of US public opinion surveys on the environment found the issue to be

lower than ranked economic growth, and in the process of becoming partisan, but swung in favour of action on 'clean air and water' immediately after Earth Day (Anthony 1982). Gallup and Harris' later surveys in 1995 both found growing concern around worsening environmental issues in developed and developing countries, prioritising air pollution in particular. More recent climate change opinion studies include the 2008 HSBC Climate Confidence Monitor and the UN Peoples Climate Vote, launched in 2020 with a record 1.2 million respondents. Both of these respondent groups found climate change to be a 'pressing emergency', even despite the financial crisis in 2008 (UNDP 2021). However, for Tienhaara and the Mobium Group in Australia, the GFC caused some polls to rank the environment as an 'unaffordable luxury' (Mobium 2009; Tienhaara 2010), and Australian Mobium Group respondents previously concerned about climate change temporarily dropped the issue by 20 percent during this time. Overall, growing environmental concern may be diminished or reversed by the pandemic.

As the pandemic has progressed, news outlets such as CNN, Al Jazeera, New Scientist, and Scientific American have published a range of editorials and think pieces connecting the more immediate battle against COVID-19 to the ongoing climate crisis. Their main 'lessons' for the public after the outbreak include the importance of listening to scientists (Ibrahim 2020; Vaughan 2020), of coordinated responses (Mandow 2020; Salas, Shultz, and Solomon 2020; WMO 2021), of protecting the vulnerable (The Lancet 2021), and the inadequacy of standard market-oriented cost-benefit analyzes (Howe 2020). Many also frame the pandemic as an opportunity to tackle climate change through stimulus funding (Kottasová, Gupta, and Regan 2020; Salmond 2020; UNEP 2020). However, none of these articles or think pieces have considered the priorities and lessons learned from the virus by the general public themselves.

Overall, the main issues presented by existing literature are that public sensitivity to exogenous shocks is often extreme yet short lived, and studies have already indicated COVID-19 has affected values and priorities for policy issues. Given growing concern about the state of our environment, and similarities of the climate change and COVID-19 crises, we can expect that this study will serve as a snapshot in time comparing the two policy priority rankings after the exogenous shock of COVID-19.

3. METHOD AND DATA

Data has been collected through online surveys conducted from January 2021 through February 2021. Data collection was conducted in the form of a conjoint survey, used in this case as a preference ranking tool. Though typically used for consumer research, a conjoint survey was selected to allow for participants to give an immediate response and preference when presented with two randomised options. This data collection method has been used by a number of social scientists to analyze policy preferences. For example, Horiuchi examined voter opinion during the 2014 Japanese election and Hainmueller found his sample rankings to accurately reflect real-world policy voting through the case study of Swiss naturalization law in 2004 (Hainmueller, Hangartner, and Yamamoto 2015).

Respondents were asked basic socio-economic information including their age, income, education level, gender, country of residence, political affiliation, marital status, ethnicity, employment status, and religion. They were then given two sets of 14 randomly generated pairs of global policy issues, loosely based on the UN Sustainable Development Goals (SDGs). This conjoint analysis was conducted through the Melbourne-based conjoint survey platform Conjointly.

For the first set, respondents were asked to select the issue they believed most important to solve (regardless of time) and for the second set, which they believed most urgent to solve (time sensitive). The global policy issues are as follows:

- Climate Change
- COVID-19 pandemic
- Terrorism
- Abortion and Women's Rights
- Refugees and immigration
- Racism
- Economic Development
- Food Security
- Human Trafficking
- Overexploitation of resources (eg. water)
- Labour rights
- Natural Disaster Response
- International Conflicts
- Global health
- Education Access

For the second randomly generated set, respondents were asked which issue they believed most important to solve, regardless of the time it would take to solve them.

Three sample groups have been collected, with 1,088

responses from the United States, 976 responses from Canada, and 165 responses acquired through snowball sampling. The primary countries studied (United States and Canada) were selected for comparison. At the time of data collection, the former reported much higher rates of COVID-19, experiencing a prolonged peak in cases, and the latter reported lower rates of COVID-19, having passed its peak in early January 2021.

Data for Canadian and American responses were collected through Mechanical Turk, an online Human Intelligence Task distribution service run through Amazon. According to 2016 statistics, workers on Mechanical Turk are mostly based in the US and some other English-speaking countries. They also tend to be higher educated, less racially diverse, and significantly younger (88 percent under 49) than the general US population (Hitlin 2016).

Data analysis consists of descriptive statistics, proportion tables showing preferences of policy issues depending on socioeconomic variables. For data analysis, a Generalized Linear Mixed Model was conducted through R, allowing for multiple regressions, which included all socioeconomic variables.

4. ANALYSIS AND FINDINGS

4.1. Demographic Data

Table 1 provides demographic statistics for the USA and Canada, and Table 2 for New Zealand and Australia. From the demographic data collected, survey respondents from the United States have a higher average age of 40.47 years old, compared to a younger mean 33.31 for Canada. Most respondents were college educated, with 48 percent and 53 percent of United States and Canadian respondents having a bachelor's degree, respectively. Most respondents reported a relatively high level of financial stability, with only 22 percent of respondents from the United States and Canada reporting some or significant financial difficulties. Most respondents - 83 percent of US respondents and 72 percent of Canadian - reported being employed and not currently studying.

Using a Likert scale of self-reported political ideology, with 1 as progressive and 7 as conservative, U.S. respondents gave a mean of 4.33, relatively conservative compared to 3.6 for Canadian respondents, especially conservative compared to the 2.59 and 3.09 values for New Zealand and Australian respondents, respectively. White respondents from the United States were overrepresented in the survey, 78 percent compared with the national percentage of 60.1 percent. Finally, 66 percent of U.S. respondents and only 29 percent of Canadian

respondents reported as Christian, indicating an overall higher level of religiosity in the United States.

These demographics are similar to those anticipated by the MTurk information, indicating the sample size is highly educated, predominantly white and with an average age lower than the general US population.

4.2. Relative Rankings for Policy Issues

Because of the conjoint nature of the survey, the relative rankings of all policy issues can be observed. These are presented in Figures 1 to 4. It comes as no surprise that the COVID-19 pandemic was rated as the top policy priority, both in terms of importance and urgency, for Canada, the United States, and snowball respondents (the majority from New Zealand and Australia). Surprisingly, food security was ranked second for all samples, which could be related to panic buying, scarcity mindsets, and anxieties around food distribution and cost, linked loosely to the pandemic. Economic development ranked much higher in the United States compared to Canada. For our issue of interest, climate change, in terms of urgency it ranked 6th in the Canadian sample and 5th in the United States, and for overall importance it ranked 4th in both the USA and Canada. Despite also being a comparable, large-scale environmental threat, Overexploitation of Resources was ranked just under climate change in the top 7 for both urgency and importance, in the USA and Canada. Of the environmental issues presented, Climate Change was rated the most significant.

4.3. Generalized Linear Mixed Models

Generalized Linear Mixed Models (GLMMs) are the best method of analysis for the format of this study. They are a version of linear mixed models which allow for regressions of limited dependent variables, like binary responses (such as my response selection dependent variable). They also include both fixed and random effects. In this regard, assessed paired conjoinants are at level-1, and individual respondents are at level-2.

As displayed in Tables 3 and 4 and indicated by the Odds Ratios, very few demographics are strongly positively or negatively correlated with likelihood of selecting COVID-19 or Climate Change, and have a statistically significant relationship (with a $p < 0.001$ or similar). Non-students are likely to select COVID-19 as a more urgent issue ($p < 0.01$), but to a lesser extent for importance ($p = 0.018$). Canadian and US respondents were also more likely to select COVID as an important issue ($p = 0.001$ and 0.011 respectively).

For Climate Change, females were less likely to select Climate Change as an important issue ($p < 0.001$), and those with a Bachelor's degree are slightly more likely to select Climate Change as the more important issue ($p = 0.001$), which is similar but even less of a relationship for those with Post-Graduate education ($p = 0.024$). Interestingly, U.S. respondents were more likely to select Climate Change as an important issue ($p = 0.043$) than the referent category of NZ respondents.

The only variable that is significantly associated with likelihood to select both COVID-19 and Climate Change (based on both urgency and importance) is political ideology. As respondents become more conservative, the likelihood to select Climate Change as more important decreases ($p < 0.001$), and the likelihood of selecting COVID-19 in terms of urgency *and* importance decreases ($p < 0.001$).

4.4. Predicted Probabilities - Political Ideology and country

Predicted probabilities indicate the likelihood of an event based on available data. Given the relevance of political ideology as previously discussed, this was calculated with political ideology for COVID-19 and climate change, both in terms of urgency and importance. All probability figures (Figures 5-8) show a decreasing likelihood of selecting COVID-19 or climate change as political ideology becomes more conservative. The confidence intervals are broader for climate change's importance, but narrower for climate change's urgency, and COVID-19 for both importance and urgency.

4.5. Interaction effects - Political ideology and country

Given the correlations between political ideology and COVID, and political ideology and climate change, interaction effects were estimated between political ideology and country of residence. This was done to determine whether the observed relation between political ideology and COVID-19 or Climate Change varied across countries.

To observe any interaction effects, a Nested Model Comparison was run. This involves the comparison of an estimated model without interaction effects, and a model with interaction effects between political ideology and the policy issue (COVID-19 and climate change) shown in Tables 5 to 8. For COVID-19 urgency, the difference between means was statistically significant ($p < 0.01$). This statistically significant difference was also observed for COVID-19 importance ($p = 0.035$).

No statistically significant interaction effects were observed for climate change, both in terms of importance and urgency.

Figures 9 and 10 show interaction effects and differences across all sampled countries: New Zealand, United States, Canada, and Australia. Almost all countries showed negative correlations between increasing conservatism and reported urgency and importance of COVID-19. The impact of political ideology held true between Australia, Canada, and the United States, the exception being New Zealand where the correlation observed was slightly positive. Minor differences which are observed in the figures include a higher likelihood for Australian conservatives to prioritize issues other than COVID-19, in terms of both importance and urgency.

5. DISCUSSION

Overall, these findings indicate that as of February 2021, COVID-19 is still the most salient issue for respondents in the dataset and is by far reported to be the most significant issue. Despite this, climate change is still ranked high, even above economic development for both urgency and importance.

In addition to this, demographics that were expected to impact the results, such as age, gender, religion, and education, did not have such an effect. The lack of variation across demographic groups is surprising given that often opinions on other policy issues (such as warfare, abortion, incarceration) differ across demographics, and the unified nature of responses could be due to any number of factors including shared media consumption, shared experiences in times of disaster, as well as methodological artifacts such as sampling bias.

However, it was unsurprising that political ideology was the demographic factor most strongly associated with selecting climate change or COVID-19. Political polarization in the West has been increasing, in countries such as the UK and Hungary (Palonen 2009). This trend is especially well documented regarding climate change in the United States and Australia (Brewer 2011; Tranter 2013). The politicization of COVID-19 also appears to be following a similar trajectory (Abbasi 2020), though it is in the very early stages of research. It is surprising, however, that the politicization of climate change did not provide any significant differences between countries, such as the United States, and that only COVID-19 presented differences according to country of respondent. The United States is leading the world in political polarisation (Boxell, Gentzkow, and Shapiro 2020), and it would be expected that this correlation would be stronger there. The absence of this could be due to

the prevalence of international misinformation about COVID-19 across multiple English-speaking countries through social media platforms (Nsoesie et al. 2020).

These rankings of policy issues are similar to all existing research on policy priorities from 2020 to 2021, such as the Eurasia group risk study which shows pandemics as the top-rated global risk, coinciding with COVID-19 as our top ranked policy priority. However, in the IPSOS study on COVID-19 and climate change, respondents ranked climate change higher in their priorities, second only to COVID-19, whereas in our study it was frequently outranked by issues such as food security, global health, human trafficking and over-exploitation of resources. Food security in particular is unexpected, and could reflect the other disruptions caused by COVID-19 including the breakdown of certain food supply chains (Barman, Das, and De 2021).

Some potential problems and limitations with my study include its reliance on a convenience sample through Mechanical Turk, which may not accurately reflect the general populations of the US and Canada. Also, these surveys also rely on self-reporting, which may not be entirely accurate. Participants are also responding to gain a monetary incentive, and may have been incentivized to give less accurate answers in order to finish faster. Another limitation is the generalizability of my data. Despite a relatively large sample size, almost all responses were from Western countries and Mechanical Turk workers. Even within the Western countries studied, very few respondents were of lower income backgrounds or BIPOC communities, and fewer older respondents partook in the survey. I was also unable to make full use of the conjoint data due to the format in which it was provided. Calculating policy rankings for each individual respondent, and comparing across data sets would provide more in-depth analysis which is beyond the scope of this project.

Future research should calculate identical policy priority comparison studies one year from now, in the USA, Canada, Australia and New Zealand, which could then be compared to this dataset collected in February 2021. This could serve as a study of the volatility of public policy perceptions, and the length of time after which policy priorities shift after an exogenous shock.

6. CONCLUSION

Overall, my data indicate that the effect of COVID-19 on the public opinion is so great that it transcends all demographic categories, aside from political ideology. Climate change responses indicated a similar lack of association based on demographics. This universal acknowledgement of climate change's threat could be

for similar reasons to COVID-19, being the greatest long-term global health challenge that we are currently facing.

The relatively large scale of my dataset, and its production of rankings, could be useful for policymakers and politicians, particularly those in Western countries. For example, the impact of political ideology on perception risks from COVID-19 and climate change could be addressed by a number of policies. These could include monitoring the spread of misinformation online, particularly in conservative, online forums and news outlets, political advertisements targeting conservative audiences, and stronger bipartisan messaging overall. This could help them understand what issues are currently relevant and how to design and develop policy and focus areas based on this.

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APPENDIX

Table 1: Demographic Data, USA and Canada

	United States of America (N = 1088)	Canada (N = 976)
Age		
min	19	15
max	83	99
mean (sd)	40.49 ± 11.86	33.31 ± 10.46
Gender		
Male	593 (55)	596 (61)
Female	488 (45)	378 (39)
Other	7 (1)	2 (0)
Degree		
High School or below	117 (11)	149 (15)
Some University	187 (17)	107 (11)
Bachelors Degree	520 (48)	516 (53)
Post-Graduate Study	263 (24)	191 (20)
Income		
Able to save	507 (47)	444 (45)
No notable difficulties	324 (30)	264 (27)
Some or significant difficulties	239 (22)	218 (22)
Employment		
Employee	797 (73)	647 (66)
Self Employed	161 (15)	126 (13)
Not Working	129 (12)	184 (19)
Student		
Full time/part time student	174 (16)	257 (26)
Not a student	900 (83)	701 (72)
Political Ideology		
min	1	1
max	7	7
mean (sd)	4.33 ± 2.10	3.60 ± 1.76
Ethnicity		
White	850 (78)	562 (58)
Asian	54 (5)	269 (28)
Other	177 (16)	119 (12)
Marital Status		
Married	690 (63)	442 (45)
Never Married	288 (26)	459 (47)
Other	110 (10)	75 (8)
Religion		
No religion	296 (27)	452 (46)
Christian	721 (66)	280 (29)
Other	71 (7)	244 (25)

Table 2: Demographic Data, New Zealand and Australia

	New Zealand (N = 58)	Australia (N = 23)
Age		
min	18	9
max	77	80
mean (sd)	33.45 $\pm$ 16.61	32.70 $\pm$ 14.88
Gender		
Male	22 (38)	11 (48)
Female	35 (60)	12 (52)
Other	1 (2)	0 (0)
Degree		
High School or below	7 (12)	3 (13)
Some University	12 (21)	1 (4)
Bachelors Degree	26 (45)	13 (57)
Post-Graduate Study	13 (22)	6 (26)
Income		
Able to save	35 (60)	11 (48)
No notable difficulties	12 (21)	7 (30)
Some or significant difficulties	7 (12)	4 (17)
Employment		
Employee	39 (67)	11 (48)
Self Employed	3 (5)	5 (22)
Not Working	15 (26)	7 (30)
Student		
Full time/part time student	24 (41)	9 (39)
Not a student	34 (59)	14 (61)
Political Ideology		
min	1	1
max	6	7
mean (sd)	2.59 $\pm$ 1.21	3.09 $\pm$ 1.81
Ethnicity		
White	41 (71)	15 (65)
Asian	11 (19)	3 (13)
Other	6 (10)	5 (22)
Marital Status		
Married	13 (22)	10 (43)
Never Married	41 (71)	10 (43)
Other	4 (7)	3 (13)
Religion		
No religion	29 (50)	15 (65)
Christian	19 (33)	5 (22)
Other	10 (17)	3 (13)

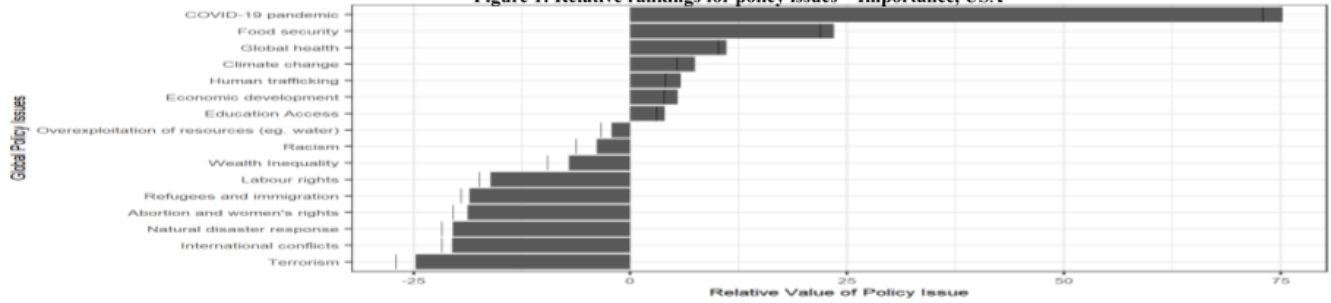
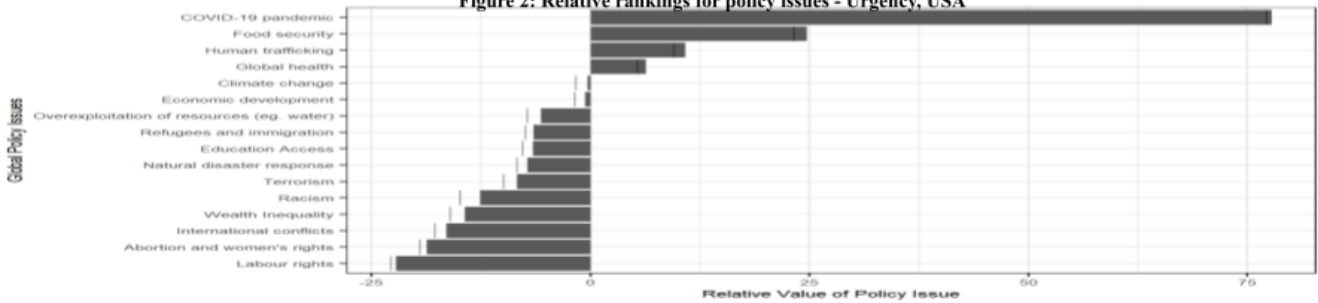
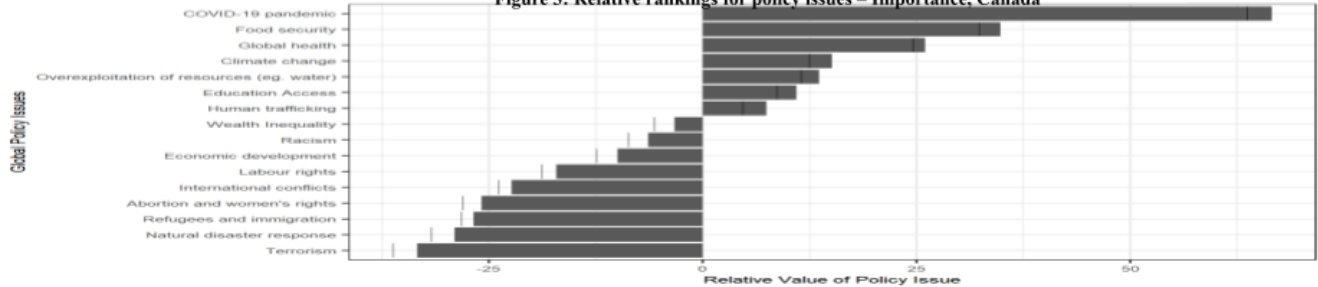
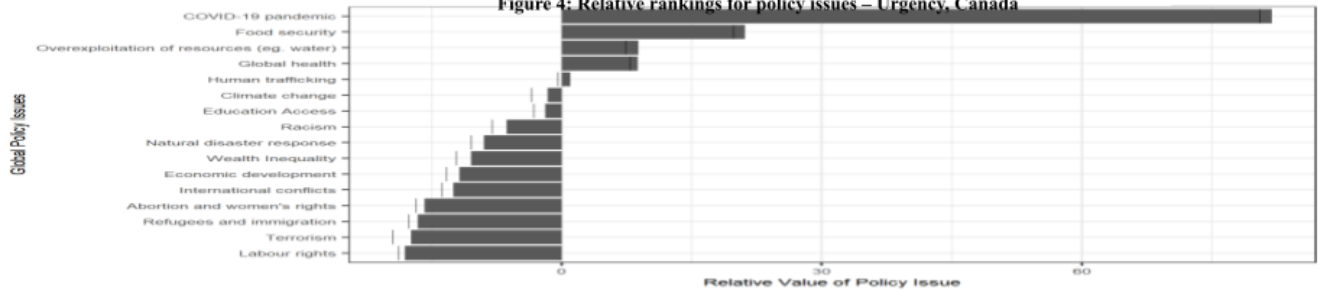
Figure 1: Relative rankings for policy issues – Importance, USA

Figure 2: Relative rankings for policy issues - Urgency, USA

Figure 3: Relative rankings for policy issues – Importance, Canada

Figure 4: Relative rankings for policy issues – Urgency, Canada


Table 3: General Linearized Mixed Models – COVID-19

Coefficient	COVID-19, Urgency			COVID-19, Importance		
	Odds Ratios	Conf. Int (95%)	P-Value	Odds Ratios	Conf. Int (95%)	P-Value
Intercept	29.93	7.61 – 117.68	<0.001	1.64	0.52 – 5.21	0.401
Gender - Female	1.29	0.91 – 1.84	0.157	1.08	0.78 – 1.49	0.660
Gender - Other	1.18	0.18 – 7.89	0.867	1.20	0.28 – 5.04	0.806
Education - Some University	1.06	0.63 – 1.80	0.817	1.10	0.67 – 1.80	0.697
Education - Bachelors Degree	1.31	0.80 – 2.15	0.290	1.57	0.99 – 2.47	0.053
Education - Unspecified	0.97	0.37 – 2.55	0.953	1.44	0.65 – 3.22	0.368
Education - Post-graduate	1.26	0.72 – 2.19	0.421	1.57	0.94 – 2.60	0.083
Income - No notable difficulties	0.85	0.61 – 1.19	0.339	1.16	0.87 – 1.55	0.325
Income - Some or significant difficulties	1.00	0.71 – 1.43	0.979	1.16	0.85 – 1.59	0.342
Income - Unspecified	1.15	0.51 – 2.60	0.730	1.57	0.87 – 2.81	0.133
Employment - Self employed	0.81	0.56 – 1.18	0.273	0.94	0.68 – 1.31	0.731
Employment - Not working	1.07	0.72 – 1.58	0.745	0.99	0.71 – 1.40	0.975
Employment - Unspecified	0.66	0.16 – 2.74	0.568	0.89	0.33 – 2.42	0.815
Student - Not a student	1.85	1.31 – 2.62	<0.001	1.42	1.06 – 1.90	0.018
Student - Unspecified	1.05	0.44 – 2.51	0.918	1.16	0.57 – 2.39	0.679
Marital Status - Never married	1.07	0.72 – 1.60	0.733	0.93	0.66 – 1.32	0.690
Marital Status - Unspecified	1.21	0.75 – 1.96	0.444	0.92	0.63 – 1.35	0.683
Religion - Christian	0.66	0.43 – 1.03	0.066	1.12	0.79 – 1.60	0.526
Religion - Other	0.76	0.48 – 1.21	0.243	0.84	0.56 – 1.27	0.408
Ethnicity - White	0.91	0.53 – 1.55	0.727	0.91	0.60 – 1.38	0.655
Ethnicity - Unspecified	0.62	0.13 – 3.04	0.559	1.58	0.45 – 5.50	0.471
Ethnicity - Other	0.74	0.41 – 1.33	0.314	1.05	0.66 – 1.66	0.834
Age	1.00	1.00 – 1.00	0.937	1.01	1.00 – 1.02	0.152
Political Ideology (Where 1 is progressive and 7 conservative)	0.75	0.68 – 0.82	<0.001	0.79	0.72 – 0.86	<0.001
Country - United States of America	0.98	0.33 – 2.92	0.978	4.41	1.85 – 10.54	0.001
Country - Canada	1.49	0.50 – 4.49	0.476	3.09	1.29 – 7.36	0.011
Country - Australia	1.50	0.30 – 7.44	0.617	3.86	0.85 – 17.51	0.080
Country - Other	0.93	0.29 – 2.96	0.902	2.14	0.85 – 5.37	0.107

Referent categories for each of the demographic variables are *Male* for gender, *High School or Below* for education, *No Difficulties* for income, *Employed* for employment, *Current Student* for student, *Married* for Marital Status, *No religion* for religion, *Black* for Ethnicity and *New Zealand* for country.

Table 4: General Linearized Mixed Models – Climate Change

Coefficient	Climate Change, Urgency			Climate Change, Importance		
	Odds Ratios	Conf. Int (95%)	P-Value	Odds Ratios	Conf. Int (95%)	P-Value
Intercept	3.84	2.03 – 7.26	<0.001	1.07	0.68 – 1.67	0.774
Gender - Female	0.99	0.86 – 1.14	0.875	0.79	0.70 – 0.89	<0.001
Gender - Other	1.16	0.52 – 2.60	0.722	0.92	0.47 – 1.79	0.799
Education - Some University	0.97	0.76 – 1.24	0.800	1.10	0.90 – 1.34	0.369
Education - Bachelors Degree	1.09	0.87 – 1.35	0.449	1.35	1.13 – 1.62	0.001
Education - Unspecified	1.00	0.60 – 1.67	0.992	1.11	0.74 – 1.68	0.608
Education - Post-graduate	1.07	0.84 – 1.36	0.601	1.26	1.03 – 1.54	0.024
Income - No notable difficulties	1.00	0.87 – 1.16	0.967	0.97	0.86 – 1.09	0.626
Income - Some or significant difficulties	1.04	0.89 – 1.22	0.636	0.91	0.80 – 1.04	0.161
Income - Unspecified	1.09	0.82 – 1.45	0.547	0.95	0.75 – 1.20	0.661
Employment - Self employed	0.92	0.77 – 1.10	0.376	0.93	0.80 – 1.08	0.329
Employment - Not working	0.95	0.79 – 1.13	0.551	0.95	0.82 – 1.10	0.489
Employment - Unspecified	0.81	0.43 – 1.50	0.495	1.02	0.66 – 1.57	0.936
Student - Not a student	0.82	0.70 – 0.97	0.018	0.94	0.82 – 1.06	0.308
Student - Unspecified	0.80	0.50 – 1.27	0.342	1.12	0.80 – 1.55	0.508
Marital Status - Never married	0.90	0.76 – 1.06	0.193	1.06	0.92 – 1.21	0.410
Marital Status - Unspecified	0.97	0.78 – 1.21	0.804	0.91	0.77 – 1.09	0.308
Religion - Christian	0.85	0.72 – 1.01	0.060	0.89	0.77 – 1.02	0.084
Religion - Other	0.93	0.76 – 1.12	0.444	0.76	0.64 – 0.89	0.001
Ethnicity - White	1.09	0.88 – 1.35	0.424	1.02	0.86 – 1.21	0.831
Ethnicity - Unspecified	0.82	0.42 – 1.58	0.551	0.99	0.63 – 1.55	0.967
Ethnicity - Other	1.08	0.84 – 1.39	0.547	0.84	0.69 – 1.02	0.081
Age	1.00	1.00 – 1.00	0.274	1.00	1.00 – 1.00	0.426
Political Ideology (Where 1 is progressive and 7 conservative)	0.82	0.79 – 0.85	<0.001	0.97	0.94 – 1.00	0.088
Country - United States of America	0.76	0.45 – 1.29	0.315	1.43	1.01 – 2.03	0.043
Country - Canada	0.75	0.44 – 1.27	0.280	1.17	0.83 – 1.66	0.375
Country - Australia	1.22	0.55 – 2.74	0.624	1.40	0.79 – 2.51	0.251
Country - Other	0.83	0.46 – 1.47	0.516	1.33	0.91 – 1.96	0.144

Referent categories for each of the demographic variables are *Male* for gender, *High School or Below* for education, *No Difficulties* for income, *Employed* for employment, *Current Student* for student, *Married* for Marital Status, *No religion* for religion, *Black* for Ethnicity and *New Zealand* for country.

Table 5: Nested Model Comparisons ANOVA - COVID-19 Urgency

npar	AIC	BIC	logLik	deviance	Chisq	Df	Pr(>Chisq)
29	5226.2	5431.2	-2584.1	5168.2			
33	5217.6	5450.9	-2575.8	5151.6	16.614	4	0.002297 **

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Table 6: Nested Model Comparisons ANOVA - COVID-19 Importance

npar	AIC	BIC	logLik	deviance	Chisq	Df	Pr(>Chisq)
29	7581.1	7789.6	-3761.5	7523.1			
33	7578.7	7816.1	-3756.4	7512.7	10.328	4	0.03525 *

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Table 7: Nested Model Comparisons ANOVA – Climate Change Urgency

npar	AIC	BIC	logLik	deviance	Chisq	Df	Pr(>Chisq)
29	19879	20101	-9910.2	19821			
33	19879	20132	-9906.3	19813	7.8934	4	0.09556 .

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Table 8: Nested Model Comparisons ANOVA – Climate Change Importance

npar	AIC	BIC	logLik	deviance	Chisq	Df	Pr(>Chisq)
29	27010	27240	-13476	26952			
33	27014	27276	-13474	26948	3.9807	4	0.4086

Figure 5: Predicted Probabilities of Political Ideology - COVID-19, Urgency

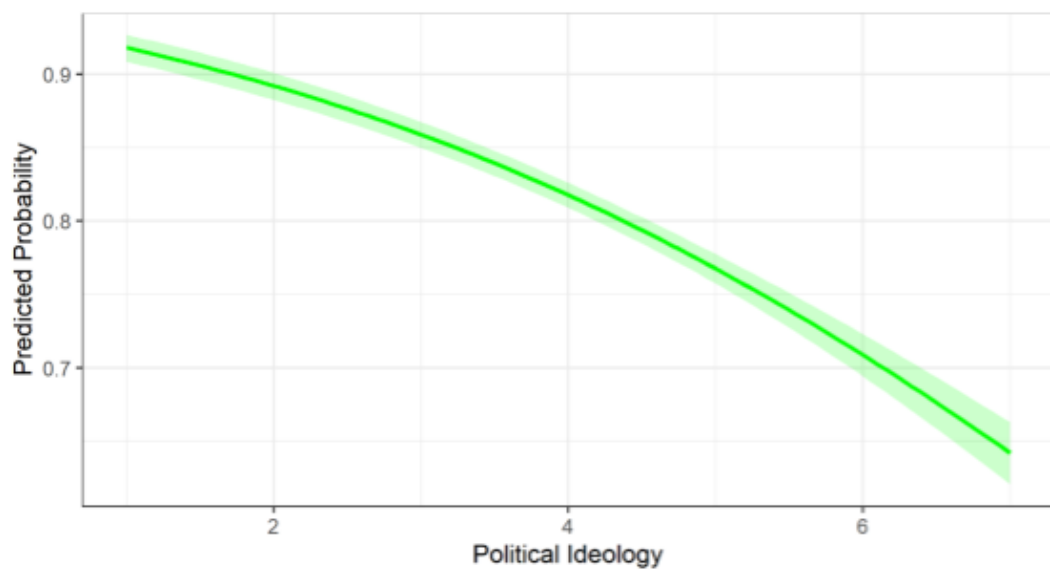


Figure 6: Predicted Probabilities of Political Ideology – Climate Change, Urgency

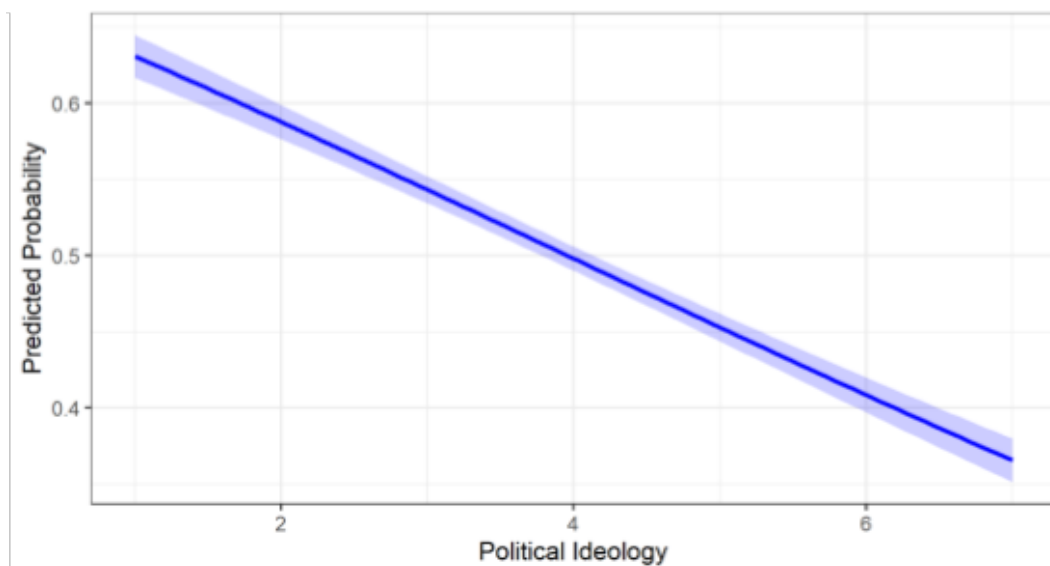


Figure 7: Predicted Probabilities of Political Ideology - COVID-19, Importance

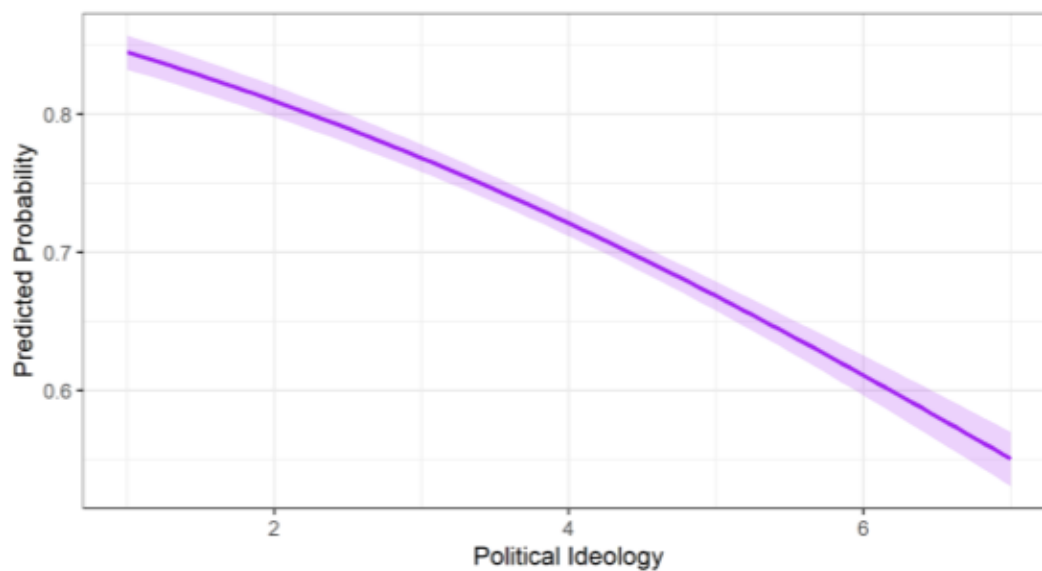


Figure 8: Predicted Probabilities of Political Ideology – Climate Change, Importance

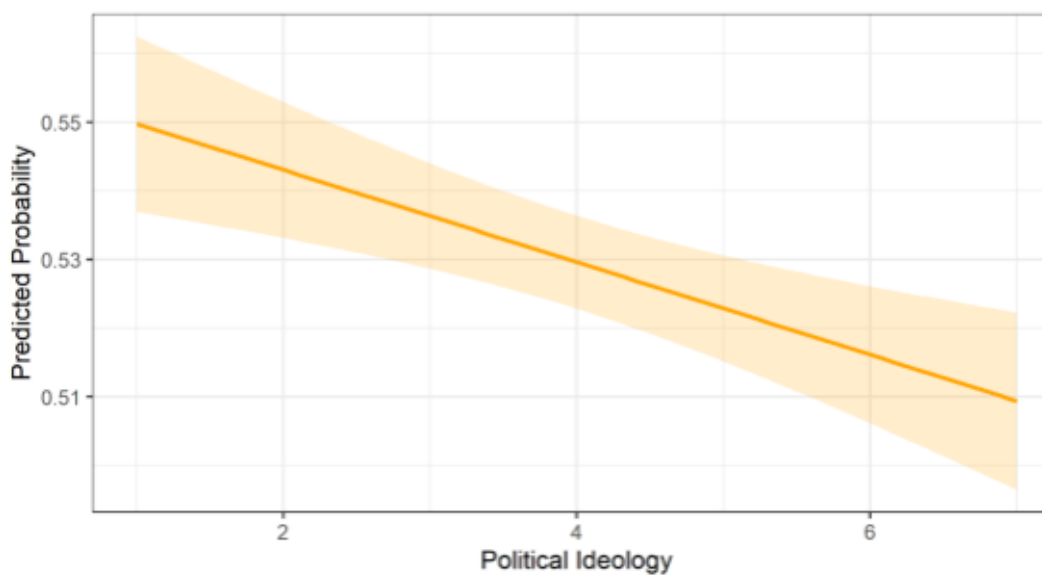


Figure 9: Predicted Probabilities of Political Ideology (Interaction Effects) - COVID-19, Urgency

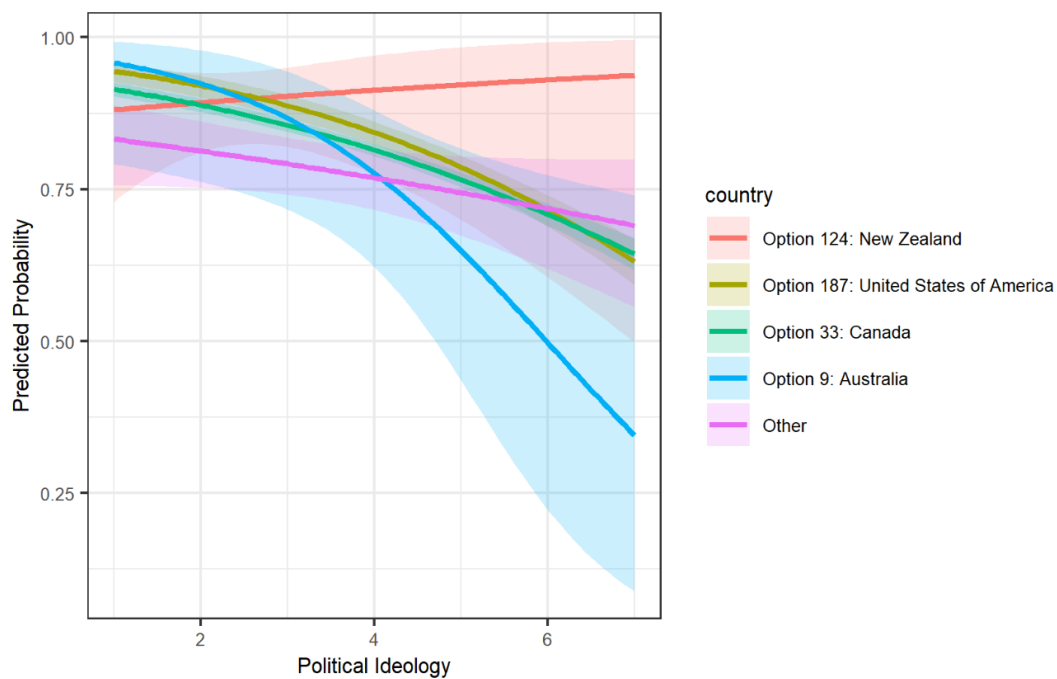


Figure 10: Predicted Probabilities of Political Ideology (Interaction Effects) - COVID-19, Important

