



Who do Canadians blame for climate change?

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Summary

In this analytical brief, we take a deep dive into public perceptions of who is responsible for causing climate change. Based on a segmentation analysis of the Canadian public, drawn from the results of EcoAnalytics Climate of Change Survey (fall 2020), we identify three clusters of the population that share similar views on who is to blame for causing climate change. We call these Radicals, Reformers, and Rejectors.

Radicals (27% of the sample) are more likely than the other two clusters to assign blame across the board, and in particular, are more likely to hold economic and colonial systems responsible for causing climate change. They tend to be urban, university-educated, left-leaning, and women. Radicals are concentrated in Ontario and Quebec, in relatively safe electoral districts that are currently represented by Liberal MPs. Radicals are found in households at both lower and upper income levels and generally vote Liberal or NDP.

Reformers (49% of the sample) are the largest cluster. They tend to assign blame to governments and fossil fuel companies, while being much more ambiguous in their propensity to hold individuals and economic systems responsible for causing climate change. They are also much less likely to say colonial systems play a major role. This ideologically diverse cluster tends to be urban, university-educated, and concentrated in Ontario, Quebec, and British Columbia. Relative to other clusters, Reformers are twice as likely to reside in a “swing riding,” while their partisan preferences are roughly equally distributed across the three major federal parties: Conservative (CPC), Liberal (LPC), and New Democratic (NDP). More than any other cluster, Reformers tend to be more evenly distributed across income groups.

Rejectors (23% of the sample) are, relative to the other clusters, systematically least likely to assign blame for climate change. People in this cluster lean right and are more likely to be middle-aged, male, and from higher income households. They are also more likely than the other clusters to have children living at home. Geographically, they are concentrated in Ontario and Alberta while being concentrated in relatively safe electoral districts and represented by Conservative MPs. They tend to vote Conservative and are equally likely to live in rural or urban areas.

Based on these results, we offer the following recommendations (which we elaborate in the recommendations section).

1. Target the middle.

- a. Reformers are the largest cluster (nearly half the population). They are also politically important, with a higher probability of living in a swing riding.

2. Tailor your message.

- a. Each cluster identified here is characterized by its own pattern of blame for climate change, representing different opportunities for EcoAnalytics Members and other advocates of climate action.

3. Test some messages. And test them again.

- a. Members interested in building a new narrative demanding more action and accountability from governments and fossil fuel companies might want to field-test a few ideas in their communications. We provide some examples in the recommendations section of this report.

Background

Communications experts have argued that a key barrier to engaging the public on climate change has to do with a lack of clear narrative; climate change has no single enemy, no single solution, and it is difficult to attribute clear causes and effects (Marshall, 2014). As research in moral psychology additionally points out, the consequences of climate change are a result of actions that generally have good intentions (e.g. traveling for work or driving kids to school), which imply no conscious moral transgressions. To the extent that powerful narratives are vital to a movement's capacity to frame a story and disrupt the status quo, some voices seek to identify a clear culprit in an effort to build a policy narrative around who is to blame for climate change.

Typically, opinion polls ask people to identify the perceived causes of climate change. From this research, we know that respondents generally understand that climate change is human-caused. The 2020 Climate of Change Survey found that 56% of Canadians see evidence of warming global temperatures and attribute this warming "mostly" to human causes, while an additional 12% attribute rising global temperature at least partially to human activity like the burning of fossil fuels (for a total of 68%).

While acknowledgment of human causation is a necessary condition for public support of mitigation policy (Ding et al., 2011), it is an insufficient motive for behavioural change, insofar as people tend to downplay their own role to avoid negative emotions such as helplessness, overwhelm and guilt (Norgaard, 2006). These general “human vs. natural” cause questions also tell us little about who, or which group, the public perceives as being most responsible for causing climate change.

Other polls, however, go deeper than the general “human vs. natural” cause question. For instance, the 2017 Climate of Change survey asked respondents the following: Thinking about the human causes of climate change, who or what group would you say is primarily responsible for causing climate change?

Figure 1: Perceived anthropogenic culprit for causing climate change, 2017

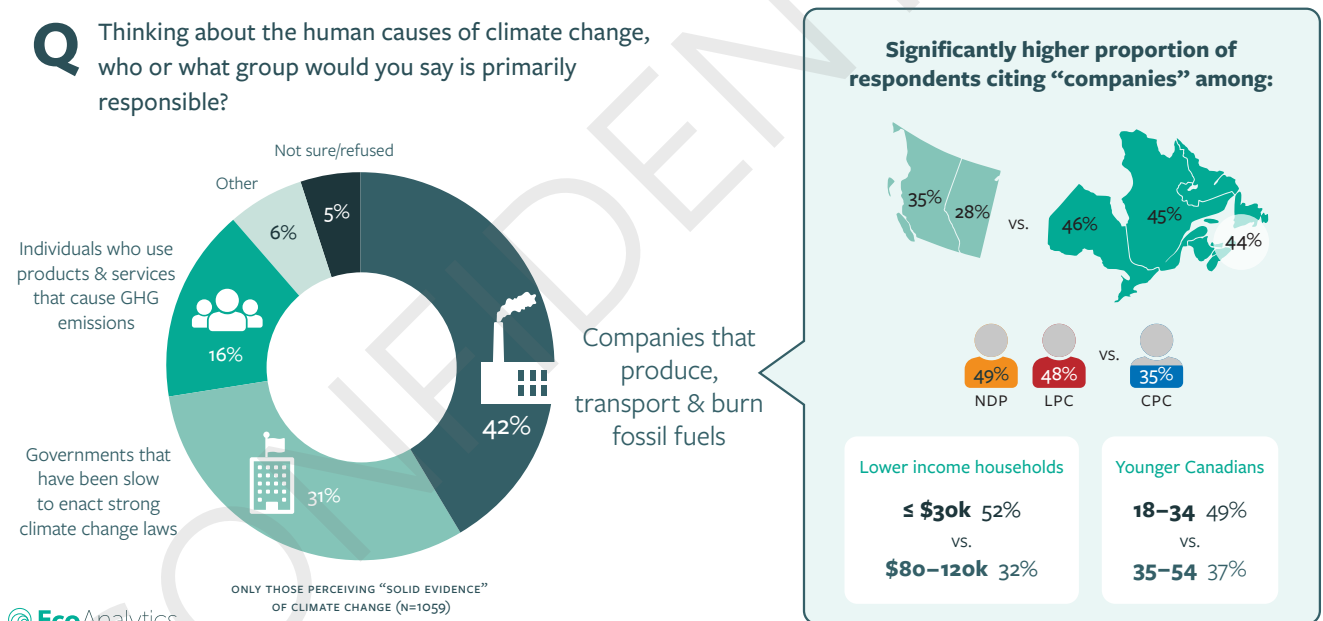


Figure 1 provides an illustration of the results obtained in 2017. It shows that Canadians who acknowledge the existence of rising global temperatures had mixed views on who is most responsible for causing climate change. In 2017, a plurality of respondents (42%) identified companies that produce, transport, and burn fossil fuels, followed by a third (31%) who assigned blame to governments for acting too slowly, while just under 1 in 5 (16%) opted for individuals who use products and services that cause greenhouse gas (GHG) emissions. The analysis of the data further identified a number of sociodemographic characteristics associated with a higher probability of blaming fossil fuel companies, including being younger, left-leaning, residing in Eastern Canada, and being on the lower end of household income.

Question and methods

In this analytical brief, we examine the question of who Canadians blame for climate change. To answer this question, we focus on the following responsibility battery of questions asked in the 2020 Climate of Change survey:

Q.RESP (Responsibility battery): Thinking about the human causes, how much of a role, if any, do you think the following have had in causing climate change?

1. Governments that have been slow to act on climate change
2. Companies that produce, transport, and burn fossil fuels
3. Individuals who use products and services that cause climate change
4. Colonial systems of economic dominance of one nation over another
5. The global economic system based on private ownership and profits

This battery of questions differs from the forced-choice version asked in 2017 in so far as it asked respondents to rate the degree to which different anthropogenic forces play a role in causing climate change, on a scale ranging from a major role to no role at all. The survey was programmed to present each item in a randomized order. As such, we measured public perceptions of climate change causes across a range of social forces, making more detailed analyses and comparisons possible.

The analysis focuses on data drawn from the 2020 Climate of Change Survey. This random digit dialing (RDD) telephone survey was conducted with a sample of 1,000 Canadians, 18 years and older. An overlapping dual-frame (landline and cell phone) sample was used. Quotas were set to ensure 400 surveys were completed with respondents via cell phones and 600 with landline. Interviews were conducted from October 17th to November 7th, 2020 and averaged 17 minutes. To ensure that the data collected were representative of the Canadian population, a weighting factor based on region, age, and gender was employed. The AAPOR response rate was 10%. Based on a sample of this size, the results can be considered accurate to within $\pm 3.10\%$, 19 times out of 20.

Figure 2: Distribution of responses to responsibility battery, 2020

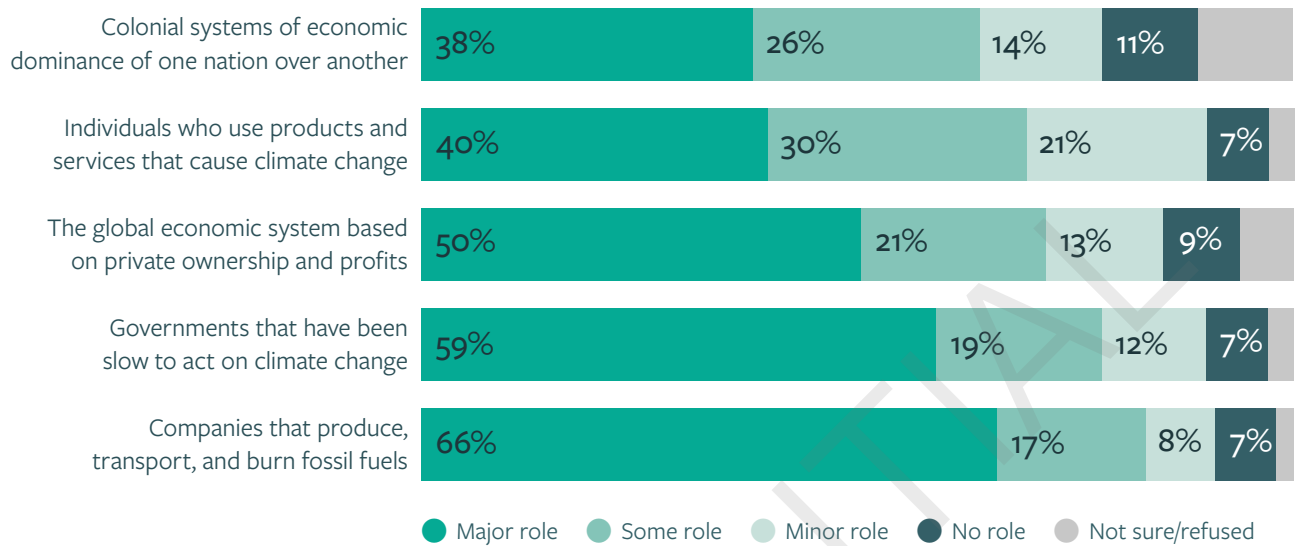


Figure 2 illustrates the distribution of responses to the five items asked in the responsibility battery across the sample as a whole. While these national averages suggest substantial support for the idea that fossil fuel companies, governments, and global capitalism play a major role in causing climate change, the aggregate data from which they are drawn mask large differences within the population.

To reveal these differences, we used an analytical strategy designed to segment the data using Latent Class Analysis, a statistical modelling technique (similar to cluster analysis) that identifies latent classes (or clusters) within a population. In statistical terms, this method uses probabilities derived from models to assign respondents to subgroups. This is a way to group similar people together based on converging and divergent patterns of responses. The resulting classes or clusters can then be analyzed further to identify their sociodemographic and psychographic characteristics.

Results

Using responses to the battery of five questions as the segmentation criteria, our analysis produced a three-cluster model that proved to be both highly interpretable and a superior fit to the data. Specifically, the analysis identified three unique audiences based on the way in which these groups perceived the five social forces as playing, or not, a major role in causing climate change.

Figure 3: Key audiences for assigning responsibility for causing climate change in Canada

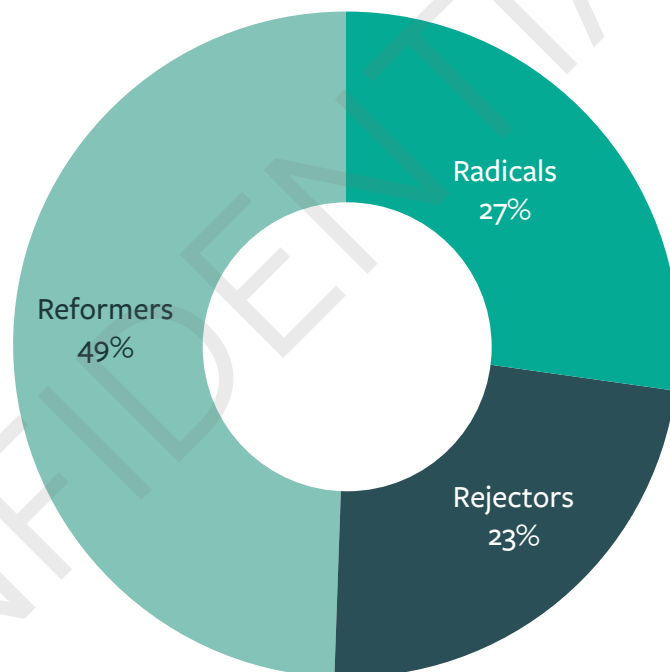


Figure 3 shows the distribution of classes within the Canadian population as it relates to assigning responsibility for causing climate change. The largest cluster is made up of Reformers (49%), followed by Radicals (27%) and Rejectors (23%). These three clusters share similar views around the social forces to blame for causing climate change.

Radicals make up about just under a third (27%) of the sample. They are generally more likely to assign blame across the board. However, what distinguishes Radicals from the other clusters is their inclination to blame entire systems (of economic, power, etc.) for climate change. Specifically, the probability of saying that the global economic system has played a major role in causing climate change is especially high among Radicals (0.96) compared to both Reformers (0.529) and Rejectors

(0.055). The conditional probability of saying colonial systems play a major role in causing climate change (0.91) is also highest among this cluster. Meanwhile, the probability of Radicals assigning blame to fossil fuel companies (0.91), government inaction (0.82), and individual consumer choice (0.67) is also higher relative to both Reformers and Rejectors.

Reformers are the largest of the three clusters identified, representing 49% of the sample. While the probability of Reformers assigning blame to fossil fuel companies (0.78) and to government inaction (0.73) is high, we find much smaller conditional probabilities for attributing a major role to the global economic system (0.53), individual consumers (0.43), and to colonial systems (0.30). In other words, what distinguishes Reformers is their tendency to assign blame to institutional players (businesses and government) as opposed to economic and colonial systems, or to individuals. The conditional probabilities for the global economic system (0.53/0.47) and individual consumers (0.43/0.57) further suggests that Reformers tend to be ambiguous in their inclination to blame such forces. Given the sheer size of this cluster, and their more ambiguous and less strongly held views, this cluster might be important to target as a potential “moveable middle” sitting between the Radicals, on the one side, and Rejectors, on the other.

Rejectors make up the smallest, though non-trivial cluster, representing 23% of respondents. Rejectors are distinct in their general tendency to assign low levels of responsibility. In fact, relative to Radicals and Reformers, Rejectors are least likely to point to *any* of the social forces examined as playing a major role. Indeed, this is true when asking about fossil fuel companies (0.10), government inaction (0.07), the global economic system (0.06), individual consumers (0.03), and colonial systems (0.01).

Figure 4: Pattern of responses by cluster (conditional probabilities)

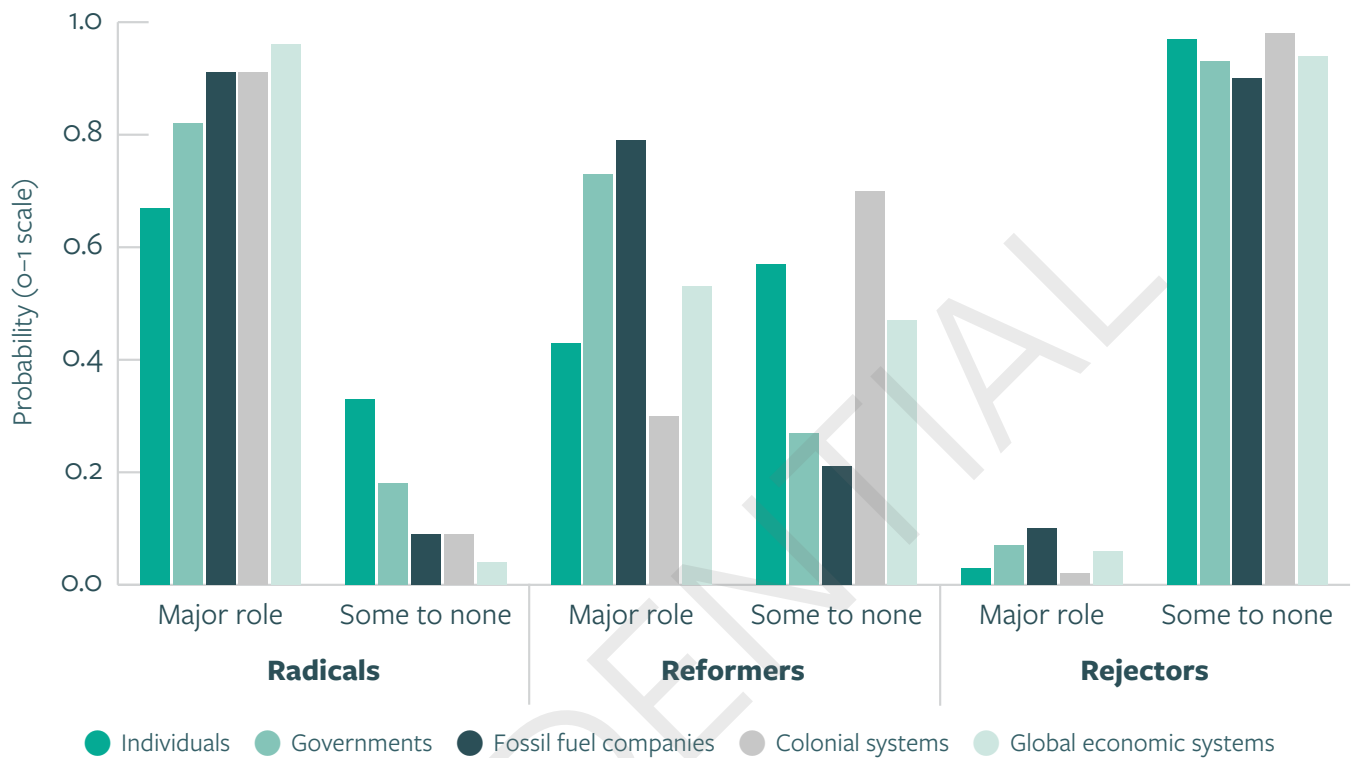


Figure 4 presents the *probabilities* of assignment to one of the three clusters, conditional upon responses to the five-question responsibility battery used for segmentation purposes. These conditional probabilities show the difference in response patterns that distinguish each cluster across the five question items.

Conditional probabilities: what are these?

Conditional probabilities are used in latent class analysis (LCA) to assign respondents to clusters. They represent the probability (from 0–1) of a particular response (e.g. colonialism has played a “Major role”) based on the cluster one is assigned to. Based on these probabilities, we might say that the probability of blaming fossil fuel companies for causing climate change, conditional upon being classified as Radical, is 82%, while the comparable figure for a Rejector is 10%. Or, put differently, if you were to randomly meet 100 Radicals, about 82 of them would hold this position; whereas among 100 Rejectors, 10 would have this point of view.

So who exactly do we find in these clusters? Using LCA, we describe the clusters in terms of their sociodemographic profiles as well as their positions on some of the other questions included in the survey.

Radicals are more likely than the other two clusters to be left-leaning (0.582), women (0.571), younger (0.278), and support the Liberal Party of Canada (0.520). Geographically, they are most commonly found in Census Metropolitan Areas (0.629), and are concentrated in Ontario (0.433) and Quebec (0.276). They tend to be university educated (0.569), live in relatively uncompetitive (or *safe*) electoral districts (0.780), and be represented by Liberal (0.540) Members of Parliament. Radicals most commonly live in households with gross income levels in the \$40,000 to \$80,000 range (0.352), though they are also likely to be found in households with gross incomes of more than \$120,000 (0.278).

In terms of their other attitudes, Radicals support every type of climate policy. Indeed, the probability of strongly supporting every climate policy in the policy matrix asked in the Climate of Change Survey is consistently higher among Radicals than both Reformers and Rejectors. For instance, this cluster is where we find the greatest probability of strong support for nature-based solutions for climate change (0.985), holding fossil fuel companies responsible for the costs of climate change (0.812), and giving citizens the power to hold governments legally accountable for inaction on climate (0.810). We also find that the conditional probability of supporting the cancellation of plans to build new pipelines is highest among this cluster (0.503) and that support for a green economic recovery is highest for Radicals (0.659), relative to Reformers (0.480) and Rejectors (0.067). Consistent with the label we've applied to this cluster, the conditional probability of Radicals endorsing systems-level change (0.956) is much higher than the probability of strongly agreeing that we can solve environmental problems if enough people change their lifestyles (0.216).¹

Reformers are more likely than other clusters to be older (0.59) and university educated (0.616). They are most likely to live in Census Metropolitan Areas (0.743) represented by Liberal (0.477) and Bloc Québécois (0.201) MPs. Relative to other groups, this cluster is more ideologically diverse, with a more even probability of self-reporting across the political left (0.394), centre (0.375), and right (0.232). They also belong to no distinctive income category, but are two to three times as likely than individuals classified in the other clusters to live in a swing riding (0.22). The probability of finding Reformers is highest in Ontario (0.349), followed by Quebec (0.294) and British Columbia (0.151). Further indicating their “swing” potential, the conditional probability of vote choice given classification into this cluster is more equally spread (relative to the other clusters) across the LPC (0.392), NDP (0.315), and CPC (0.293).

This cluster has ambiguous opinions about climate action. For instance, Reformers are divided on the green recovery, with a conditional probability of support (0.480), which is substantially lower than support among Radicals (0.659). In terms of solutions, Reformers are very likely to strongly support protecting and restoring forests as a means of addressing climate change (0.780), while the probability of strongly supporting a policy to cancel plans to build new pipelines conditional on being classified as Reformer is relatively low (0.243). Crucially, we also find some incoherence in this cluster with respect to a willingness to *assign responsibility* to fossil fuel companies for playing a major role in causing climate change, but a greater *reluctance to strongly support* holding fossil fuel companies legally responsible. Indeed, despite a high probability of assigning a great deal of responsibility to fossil fuel companies for causing climate change (0.78), the probability of strongly supporting holding fossil fuel companies financially accountable given classification as Reformer is considerably lower (0.463).

Reformers also have ambiguous views about citizens being allowed to hold governments legally accountable for climate change outcomes (0.370), despite a high probability among this cluster (0.731) to say government inaction has played a major role in causing climate change. Adding to this ambiguity, the probability of strongly agreeing with the statement “If enough people like me change their behaviour, we can solve climate change” (0.496) is roughly the same as the probability of those in this cluster strongly agreeing with this statement: “For us to successfully combat climate change, our institutions and businesses need to change.” Thus, Reformers are distinctly less clear on what the solutions to climate change are or ought to be. Indeed, while the conditional probability of this cluster to say that governments and fossil fuel companies play a major role in causing climate change is relatively high, they are not necessarily all convinced that businesses and governments need to change, or that individuals (as citizens or consumers) have an important role to play.²

Rejectors are more likely than all other clusters to fall into the middle-aged (35–54) category *and* the conditional probability of having a child living with them under the age of 18 is highest (0.254). This cluster might thus be interpreted as coming close to the “sandwich” generation composed of parents and guardians aged 34–54 who have been found to be significantly more likely to vote Conservative given their more immediate family concerns (Ipsos, 2019). Compared to the other clusters, Rejectors are more likely to be on the political right (0.513) or centre (0.4571) with a much smaller probability of being on the left (0.029). Rejectors are also more likely to be men (0.672) and to vote Conservative (0.707). Geographically, Rejectors are more likely than the other clusters to live in rural settings (0.505) in electoral districts that

are safe (0.902) while also more likely to be represented by a Conservative (0.633) Member of Parliament. They are most likely to be found in Ontario (0.375), Alberta (0.299), and in British Columbia (0.105). Membership in this category results in a relatively high probability of living in a household making over \$120,000 per year (0.375).

In terms of attitudes, the probability of supporting a just recovery is exceedingly low (0.0667) relative to the probability of supporting existing industries getting back on their feet as quickly as possible (0.933). In a similar vein, the probability of supporting various solutions tends to be very low. For instance, the probability of strong support for holding fossil fuel companies financially responsible for the impacts of climate change, given classification in this cluster, is a mere 7 per cent (0.07). While Rejectors tend to be less supportive of climate policy, one exception is with nature based climate solutions (i.e. protecting and restoring forests, grasslands, and wetlands to reduce greenhouse gas emissions and increase resilience to climate change) where support among Rejectors tends to be much higher (0.480). Being classified in the Rejector group is also associated with a much lower probability of supporting an individual level theory of change (0.075), although the probability of strongly supporting the idea that businesses and government need to change is higher (0.208).

Discussion and recommendations

We highlight three distinct clusters in Canada with respect to who the public blames for causing climate change, an essential component of a coherent policy narrative around climate change. Despite differences in methodology, our results are broadly consistent with previous EcoAnalytics research, and in particular, the Radicals, Reformers and Lifestylers report (March 2020), that identified three similar clusters. Here, using Latent Class Analysis on a question designed to measure who Canadians blame for climate change (as opposed to their theory of change), we find a broadly similar pattern of a large middle category (Reformers) that are focused on institutional change, flanked on one side by a more radical cluster of the population, and on the other by a less radical one. Similar to that report published in March 2020, we find that there may be more room for conversations about systemic change, causes, and effects than previously thought.

The analysis is, however, limited in a number of important respects. First, the survey was conducted during a pandemic, which may have inflated responses to certain questions, such as the propensity to link pressing problems like climate change to

global economic systems and government inaction. Second, we base our analysis on a split-sample, which limited our ability to correlate the clusters with a number of potentially interesting variables in the survey. Finally, and related to the issue of split-samples, we were limited in our ability to broaden our segmentation criteria to develop more comprehensive profiles. However, a focus on the responsibility battery nevertheless produced a high quality segmentation that provided a good fit to the data while being highly interpretable.

Based on these results, we offer the following recommendations.

1. Target the middle: Reformers are the largest cluster (nearly half the population). They are also politically important, with a higher probability of living in a swing riding.
 - a. In contrast to the other two clusters, Reformers are ideologically diverse and their partisan preferences are roughly equally distributed across the three major political parties. Their softer, at times ambiguous, opinions suggest that many in this cluster could be persuaded to think differently: in other words, this is the “moveable middle.”
2. Tailor your message: Each cluster identified here is characterized by its own pattern of blame for climate change, representing different opportunities for EcoAnalytics Members and other advocates of climate action.
 - a. Radicals have the highest mobilizing potential (potentially larger than what we found in previous research, see: Radicals, Reformers and Lifestylers brief). They are most likely to assign blame to governments and fossil fuel companies *and* support measures to hold these actors accountable. They might be targeted in campaigns designed to mobilize action using an accountability frame demanding governments and corporations step up to climate change.
 - b. Despite their relatively strong propensity to assign blame to fossil fuel companies and slow moving governments for playing a role in causing climate change, Reformers as a group have ambiguous views about how strongly to hold these actors accountable. This cluster requires more convincing that governments and fossil fuel companies need to change to help solve climate change, and that individuals (acting as consumers and voters) can play an important role in bringing such changes about.

3. Test and re-test: Members interested in building a new narrative demanding more action and accountability from governments and fossil fuel companies might want to field-test a few ideas in their communications.
 - a. Radicals (as well as Reformers) seem most ready to be targeted in campaigns around holding governments and fossil fuel companies responsible for climate change impacts, which are popping up in various parts of the world (most recently the City of Paris, France). Communicating the role played by fossil fuel companies in causing the problem and misleading the public, as well as that of governments that have been slow to act on climate policy, may resonate well with these clusters. Other messages that resonate with this group (e.g. about wealth redistribution and colonialism) however, do not have the same cross-over appeal among people in other clusters.
 - b. It is unclear why Reformers are ambiguous on climate solutions and concrete actions. More research is required here, but we might speculate that Reformers require more information and exposure to compelling narratives that link industry and government activities to the climate impacts they care about. This should be further tested, by for instance examining their level of interest in such information, as well as how mobilizing action around governments and fossil fuel companies may contribute to a sense of collective efficacy with key actors stepping up. In a separate segmentation analysis (not shown here) we also found that green technology, community resilience, and nature-based solutions resonate most with Reformers.
 - c. Should Members wish to engage Rejectors, they might try engaging in conversations about nature-based solutions to climate change—and protecting and restoring nature in particular—which tend to be more appealing to people in this cluster.

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Notes

1 We also ran a second, distinct, segmentation analysis using only responses to the solution battery of questions asked in the survey (not shown here given space and time constraints), we find that Radicals are distinct from the other two clusters in the importance they assign to addressing inequalities (0.969) and in eradicating colonialism (0.841), which are viewed by Reformers and Rejectors as much less important to solving climate change.

2 Based on our second segmentation analysis using the solutions battery of questions (not shown here) we find that the probability of seeing green technology (0.831) and preparing communities to be more resilient (0.682) as being very important is relatively high among this cluster, while the perceived importance of reducing economic inequalities (0.302) and eradicating colonialism (0.306) is relatively low.