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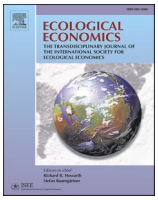

Methodological and Ideological Options

The role of trust in citizen acceptance of climate policy: Comparing perceptions of government competence, integrity and value similarity

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ABSTRACT

This study examines the role of citizen trust in explaining climate policy support, using the case of low-carbon transportation policies in Canada – namely a carbon tax, electric vehicle purchase subsidies, and three regulations. Through a representative survey of 1,552 Canadian citizens collected in 2019, we assess: 1) support and opposition of policies, 2) trust in several key actors, and 3) other factors associated with policy support. The majority of respondents support purchase incentives and most regulations, whereas support is considerably lower for a carbon tax. Factor analysis identifies three different types of trust in key actors: competence, integrity, and value similarity. Fewer than 50% of respondents trust their national or provincial government regarding climate change issues in general or according to each type of trust. Regression analysis assesses the role of trust in policy support, while controlling for respondent values and demographic characteristics. Perceptions of national government "competence" is the only trust variable that is consistently positively associated with support for all five policies tested. Other forms of trust (integrity and value similarity) and trust in the provincial government are not consistently associated with policy support.

1. Introduction

Experts recommend that in order for a climate policy to be successfully implemented and enduring, it must also be publicly acceptable in a way that does not provoke strong opposition (Rhodes et al., 2017). Pursuing widely unfavorable climate policies comes at a political cost that can impact perceptions of a government's legitimacy and compromise bids for re-election (Harrison, 2010, 2012; Lachapelle et al., 2012). Therefore, policymakers must make trade-offs between a policy's greenhouse gas (GHG) reduction potential, its cost-effectiveness, and its levels of "political acceptability" (Harrison, 2010) – one component of which is citizen support.

Several social, psychological, and demographic factors have been found to influence public willingness to support climate policies. This study focuses on the construct of citizen trust in actors involved in climate policy and examines the role of trust in explaining climatepolicy support (or opposition). Because citizens often lack personal knowledge, time, or resources to make their own cost-benefit assessments for complex policy issues, they may rely instead on a few key actors to make policy judgements for them (Siegrist et al., 2000; Terwel et al., 2009; Timothy and Michael, 2006). Based on the literature review and our present analysis, we identify three aspects of trust in policymakers: competence, integrity and value similarity.

Several studies have considered trust in the context of public support for climate policies (Harring and Jagers, 2013; Kallbekken and Sælen, 2011; Rhodes et al., 2014), though this understanding has generally been limited to one-dimensional measures of trust. When citizen trust has been studied more in-depth, it has usually been in the context of other public issues, for example, carbon capture technology, nuclear energy projects, and gene technology (Bronfman et al., 2012; Poortinga and Pidegon, 2003; Siegrist et al., 2000). This study provides a novel analysis of citizen trust in the context of climate policy support, in particular by considering several aspects of trust.

We use the case of climate policies in Canada, focusing on a selection of policies that encourage a transition to low-carbon transportation. Specifically, we focus on taxes, subsidies, and regulations that 1) support the uptake of electric vehicles (EVs), and 2) increase the supply of low-carbon fuels in the transportation sector. The five policies considered in this study are a carbon tax, EV subsidy, and three regulations: a low-carbon fuel standard, vehicle emissions standard, and zero-emission

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vehicle mandate. These policies (collectively referred to here as "low-carbon transport policies"), have been identified as potentially playing an important role in achieving GHG emissions reductions (Axsen et al., 2020; Baranzini et al., 2017; Lepitzki and Axsen, 2018; Plötz et al., 2017; Sykes and Axsen, 2017).

Using Canada as a case study, we explore if citizens support low-carbon transport policies and how trust might explain policy support, compared to other factors. Our specific objectives are to:

1. Assess the proportions of Canadian citizens that support or oppose different low-carbon transport policies;
2. Characterize citizens' trust in key actors involved in implementing low-carbon transport policies in Canada; and
3. Statistically examine the role of citizen trust in policy support by type of trust and across different key actors.

2. Policy instruments for low-carbon transportation

Climate change mitigation likely requires a combination of policy measures to achieve long-term, deep GHG abatement targets (Bhardwaj et al., 2020; Kangur et al., 2017; Sykes and Axsen, 2017; Wolinetz and Axsen, 2017). We consider different 'types' of policies that may help achieve the uptake of both EVs and low-carbon fuels: a tax, subsidy, and regulations.

First, governments may choose to put a price on units of emissions through a carbon tax. If priced high enough, carbon taxes are generally regarded as an effective and efficient tool for reducing emissions (Baranzini et al., 2017; Jagers and Hammar, 2009). Experts suggest that carbon prices need to reach at least CAD $150/tonne of carbon dioxide (CO_2) by 2030 in order to meet the goals of the Paris Agreement (Carbon Pricing Leadership Coalition, 2017; World Bank Group, 2019), though very few pricing schemes around the world attempt to achieve such a stringency (World Bank Group, 2019).

Second, policymakers pursuing GHG reductions can offer financial incentives for low-carbon technology. For example, a government may offer point-of-sale incentives, tax credits, or rebate programs to reduce the up-front cost of EVs. Financial incentives are popular policy tools among policymakers, implemented in several European countries, many US states, and in several Canadian provinces (Melton et al., 2020).

Finally, regulatory policies can effectively achieve GHG reductions by mandating a shift toward cleaner technologies and fuels (Environment and Climate Change Canada, 2019; Jaccard, 2006). We consider three examples in this study. A low-carbon fuel standard (LCFS) requires fuel suppliers to progressively reduce the lifecycle carbon intensity of fuels in a region. California's LCFS has largely been found to be successful in reducing GHG emissions (Yeh and Witcover, 2016), while modeling indicates that a stronger version of the policy can play an important role in meeting 2050 targets (Lepitzki and Axsen, 2018).

A vehicle emissions standard (VES) targets automakers, requiring lower GHG intensities of vehicles sold in a given year, with emissions calculations based on fleet averages. Automakers may meet requirements by increasing the proportion of EVs in their fleet, as EVs produce significantly lower tailpipe GHG emissions compared to conventional vehicles (Axsen et al., 2011; Kamiya et al., 2019). A VES is generally found to be effective at reducing the carbon intensity of vehicles when the requirement is stringent (Bhardwaj et al., 2020).

A zero-emissions vehicle (ZEV) sales mandate requires automakers to sell a certain percentage of low- and zero-emitting vehicles as part of their total annual sales. First implemented in California in 1990, versions of the ZEV mandate have since been adopted in several other US states, China, and the Canadian provinces of Quebec and British Columbia (Melton et al., 2020; Sykes and Axsen, 2017). Several studies have modeled the effects of the ZEV mandate, finding even in the context of other strong clean transport policies (e.g., VES and LCFS), implementing a ZEV mandate may be a necessary part of the policy mix to achieve deep GHG reductions (Greene et al., 2014a,b).

3. Literature review

3.1. Citizen support by policy type

Citizen support for these policies has been found to vary by policy type (Dietz et al., 2007; Rhodes et al., 2017). Studies from North America and Europe suggest that much of the difficulty with implementing carbon taxes stringent enough to contribute to deep GHG reduction is due to strong public opposition (Dietz et al., 2007; Drews and van den Bergh, 2016; Jaccard, 2006; Lachapelle et al., 2012; Leiserowitz, 2006; Rhodes et al., 2017). Carbon tax initiatives around the world have received significant public pushback in recent years as citizens may perceive carbon taxes to be ineffective, unfair, or "coercive" in nature (Drews and van den Bergh, 2016; Jagers and Hammar, 2009). There is also a persistent perception that the public will bear significant personal costs of carbon pricing (Harrison, 2013; Jaccard et al., 2016). A 2008 survey in British Columbia, Canada, found that over 70% of respondents perceive that a carbon tax will be very costly to themselves personally, even under a 'revenue neutral' tax that returns revenue to citizens via rebates and other tax reductions (Harrison, 2013). Citizens tend to prefer policies that they perceive to be less coercive, and that are believed to involve lower personal costs (Drews and van den Bergh, 2016; Jaccard, 2006; Tobler et al., 2012).

Several studies show that North American citizens tend to favour voluntary policies, such as subsidies. Such support has been found to relate to citizen perceptions that subsidies offer immediate financial benefits, are perceived to require low personal costs, and avoid perceived loss of personal freedom (Attari et al., 2009; Drews and van den Bergh, 2016; Tobler et al., 2012). A 2013 Canadian study found that 83% of survey respondents ($n = 1306$) supported subsidies for efficient technologies or clean energy, compared with only 53% support for the carbon tax (Rhodes et al., 2017). Experts maintain that voluntary measures alone are unlikely to be effective in reducing vehicle emissions and that more coercive measures (e.g., taxation of fuels and cars) are necessary, but difficult to implement because of public opposition (Gärling and Schuitema, 2007).

Regulations have been found to generally avoid public opposition as they primarily target producers of technologies and fuels rather than the consumer directly, resulting in fewer visible up-front costs to citizens (Tobler et al., 2012). In the same Canadian study mentioned above, 87% of respondents indicated support for a VES and 88% supported a LCFS (Rhodes et al., 2017). We are not aware of any literature that explicitly considers public support of the ZEV mandate (the third regulation that our study considers).

3.2. The role of trust in policy support

Of special focus in this study is the construct of citizen trust. Trust can be defined as a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviour of another (Perlaviciute and Steg, 2014; Rousseau et al., 1998). Citizens who highly trust organizations responsible for designing and implementing policies may perceive lower associated policy costs and greater policy benefits, making policies appear more favorable (Siegrist et al., 2000). This in turn may influence acceptability ratings of policies being advocated by the trusted organization. This chain of effects has been demonstrated in experimental designs by Terwel et al. (2009), who refer to the effect as a 'causal chain account of trust'.

We focus on a number of actors that are involved in policymaking, initiating projects, and disseminating information: governments (national and provincial), industry (car manufacturers), scientists, and non-governmental organizations (environmental groups) (Huijts et al., 2007; Poortinga and Pidegon, 2003). A study of 23 European countries found that high political trust is associated with support for fossil fuel taxes (Fairbrother et al., 2019). Similarly, a Swedish study shows that trust in politicians may be particularly important in gaining support for the

carbon tax (Hammar and Jagers, 2006), as governments are directly responsible for collecting and distributing tax revenues. A Canadian study found that citizens who support climate policies exhibit higher trust in government (Rhodes et al., 2017), and research from Korea found a positive association between citizen trust in government and reported willingness-to-pay for public environmental projects (Oh and Hong, 2012). A 2018 Irish study ($n = 505$) found that general trust in government indirectly affects acceptance of water charge policy, mediated by citizens' emotions toward water charges and evaluations of expected costs and benefits (Rodriguez-Sanchez et al., 2018).

Trust in environmental groups and scientists is generally positively associated with climate policy support (Dietz et al., 2007; Huijts et al., 2007; Rhodes et al., 2014), whereas trust in the fossil fuel industry has been associated with opposition to climate policies (Rhodes et al., 2017; Shwom et al., 2008). As one example, a 2013 study of Canadians (Rhodes et al., 2017) found that citizen trust in scientists was positively associated with support for various climate policies (e.g., carbon tax, LCFS, VES, and subsidies), and trust in fossil fuel industry was negatively associated with support for the same policies. Similarly, a 2007 US study found greater trust in environmentalists and lower trust in industry to be associated with climate policy support (Dietz et al., 2007). We expand on past research by exploring three dimensions of trust in the context of support for climate policy.

4. Conceptual framework: Trust and other factors of policy support

We draw from the literature to discern four categories of variables that may predict policy support: (1) trust in actors, (2) other psychological constructs (i.e., values, environmental concern, and belief in climate change), (3) socio-demographic variables, and (4) regional effects. Table 1 summarizes the variables included in this study, and their hypothesized direction of effect on climate policy support based on the literature. We first summarize our framework and hypotheses relating to trust, then the other factors of support.

4.1. Trust framework: Actors and types of trust

We explore trust in five actors that citizens may perceive as bearing responsibility for addressing climate change and who communicate with the public on climate policy issues: national and provincial governments, car manufacturers, scientists, and environmental groups. Governments play a key role in enacting climate change policies, and we hypothesize that general trust in governments will be positively associated with policy support (Hammar and Jagers, 2006; Rhodes et al., 2017). Trust in industry has been found to be negatively associated with policy support (Rhodes et al., 2017; Shwom et al., 2008), though we are not aware of any studies that explore trust in car manufacturers as a subset of industry. We expect that trust in car manufacturers will be negatively associated with support for low-carbon transport policies, as car manufacturers are often vocal in opposing these types of policies (e.g., the VES). While we show descriptive results for trust in all five actors, our regression analysis focuses on three key actors: national government, provincial government, and car manufacturers. We omit trust in scientists and environmental groups in our regression analyses, as we speculate that trust in these actors may be inter-correlated with other environmental constructs (e.g., climate change belief) (Hmielowski et al., 2014).

Beyond this general assessment of trust, a key novelty of this research is exploring the roles of different types of trust (Fig. 1). Although trust is widely recognized as an important factor in gaining support for public policies, researchers often disagree on the ways in which citizens develop trust for actors that make policy decisions on their behalf, and which factors of trust are most important for policy support. Drawing from a broader literature, we identify three types of trust that may determine a citizen's confidence in an actor to make decisions on their behalf: (1) perceived competence, (2) perceived level of integrity, and (3) perceived value similarity (Bronfman et al., 2012; Huijts et al., 2007; Poortinga and Pidegon, 2003; Terwel et al., 2009).

Pioneering work on interpersonal trust point to trust as a two-dimensional construct, comprised of competence and integrity (the latter sometimes being called 'care', 'honesty', or 'general trustworthiness'). In a series of psychological experiments, researchers discovered that people accept information more easily when the communicator is perceived as being an expert (i.e., competent) and having no other motives except to communicate the most valid information (i.e., of high integrity) (Hovland et al., 1953). These two dimensions have been studied in cases such as public support of carbon capture technology, hydro projects, nuclear power, and renewable energy projects (Bronfman et al., 2012; Huijts et al., 2007; Terwel et al., 2009). Presently, we refer to competence-based trust as the perception that an actor is knowledgeable, skillful, and experienced enough to make decisions on behalf of the public regarding climate change. Integrity-based trust refers to the perception that the actor intends to be fair, open, honest, and act in the best interest of the public without being overly influenced by special interest groups.

Other research has pointed to a third aspect that underlies citizen trust: values. In particular, the Salient Value Similarity (SVS) model suggests that people base their trust judgements on whether they feel an actor shares similar values to their own, or has a similar understanding of a specific situation (sometimes referred to as 'social trust') (Poortinga

Table 1
Variables hypothesized to predict support for policies.

Variable	Hypothesized direction of effect	Reference
Trust in actors		
Government (national and provincial levels of gov't are not differentiated in past research)	+ (carbon tax only)	Hammar and Jagers (2006), Kallbekken and Sælen (2011), Rhodes et al. (2014)
Scientists	+	Dietz et al. (2007), Rhodes et al. (2014)
Environmental groups	+	Dietz et al. (2007), Shwom et al. (2008)
Car manufacturers (i.e., representing industry)	−	Dietz et al. (2007), Rhodes et al. (2014), Shwom et al. (2008)
Psychological variables		
Altruistic-biospheric values	+ (all except subsidies)	Nilsson and Biel (2008), Rhodes et al. (2017)
Egoistic & traditional values	−	Nilsson and Biel (2008)
Environmental concern (NEP score)	+	Attari et al. (2009), Dietz et al. (2007)
Climate change belief	+	Clark et al. (2003), Rhodes et al. (2014)
Socio-demographic variables		
Commuting by vehicle	- (carbon tax & LCFS)	Rhodes et al. (2017)
Age	−	Elliott et al. (1997), Klineberg et al. (2016)
Female	+	Elliott et al. (1997), Klineberg et al. (2016), Rhodes et al. (2014)
Household income	+	Elliott et al. (1997), Klineberg et al. (2016)
Education	+	Elliott et al. (1997), Klineberg et al. (2016)
Region in Canada		
Rural	−	Agrawal et al. (2016), Mildenberger et al. (2016), Rhodes et al. (2014)
Alberta and the Prairies (i.e., regions that rely on high-polluting industries)	−	Mildenberger et al. (2016), Shwom et al. (2008)
British Columbia, Ontario, Maritimes, and Quebec	+	Mildenberger et al. (2016), Shwom et al. (2008)

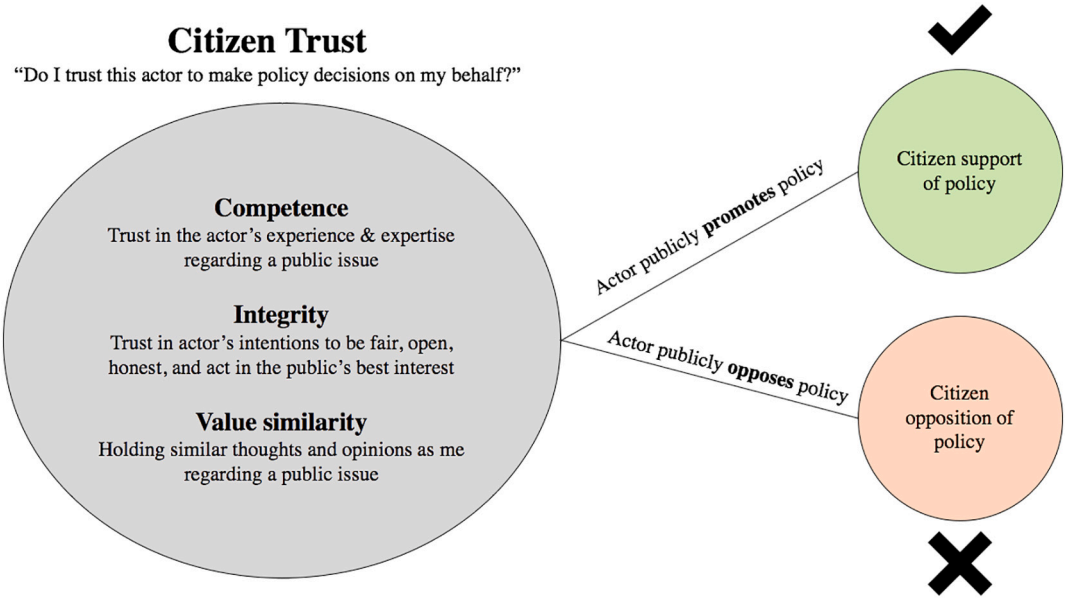

Fig. 1. Framework of citizen trust and policy support.

and Pidegon, 2003). This construct has been found to help explain support for gene technology, pesticides, nuclear power, and artificial sweetener (Siegrist et al., 2000). We presently use a version of this construct that we also call value similarity, defined as the perception that an actor's underlying thoughts and opinions are similar to a respondent's own (Poortinga and Pidegon, 2003).

4.2. Other factors of support

In addition to trust, research finds that other constructs may influence policy support. We separate constructs into three additional categories: psychological factors, socio-demographic characteristics, and region (Stern, 2000). Psychological factors include personal values, environmental concern, and belief in climate change. Values can be defined as general beliefs that transcend specific situations and guide behaviour (Schwartz, 1994). In line with previous research, we expect that altruistic-biospheric values (that prioritize the wellbeing of society and the environment) will be positively associated with policy support (Nilsson and Biel, 2008; Rhodes et al., 2017), whereas egoistic and traditional values (that prioritize personal benefits and upholding tradition) will be negatively associated with support (Dietz et al., 2007; Perlaviciute and Steg, 2014; Siegrist et al., 2000; Terwel et al., 2009). We expect that general environmental concern, measured using the New Environmental Paradigm (NEP) scale, and climate change belief will be positively associated with support for all policies (Attari et al., 2009; Clark et al., 2003; Dietz et al., 2007; Rhodes et al., 2014).

Socio-demographic variables relating to individuals' life circumstances may also be associated with climate policy support. Based on prior research, we expect older age and daily commuting by car to be negatively associated with support for policies (Elliott et al., 1997; Klineberg et al., 2016; Rhodes et al., 2017). We expect policy support to be positively associated with being female (Elliott et al., 1997; Klineberg et al., 2016; Rhodes et al., 2014), having higher household income, and being more highly educated (Elliott et al., 1997; Klineberg et al., 2016).

Finally, we expect that living in regions that rely on high-polluting industries like oil and gas production, such as Alberta and the Prairies (i.e., Manitoba and Saskatchewan combined) will be negatively associated with policy support, as has been found in similar types of studies (Lachapelle et al., 2012; Mildenberger et al., 2016; Shwom et al., 2008). British Columbia, Ontario, Quebec, and the Maritimes (i.e., Nova Scotia, New Brunswick, Prince Edward Island, and Newfoundland/Labrador combined) are not as closely tied to high-polluting industries, and in many cases have had climate policies implemented for longer periods of time. Therefore, we expect that living in these regions will be positively associated with support for policies compared with the reference case of Alberta (Mildenberger et al., 2016; Murray and Rivers, 2015; Shwom et al., 2008). Further, we expect that living in rural regions will be negatively associated with support for low-carbon transport policies, compared to living in urban or suburban areas (Agrawal et al., 2016; Mildenberger et al., 2016; Rhodes et al., 2014).

5. Case study context: Low-carbon transport policy in Canada

We test this framework using the case of low-carbon transportation policy in Canada. The transportation sector accounts for approximately one-quarter of Canada's total GHG emissions (Government of Canada, 2017). Cleaner fuels and increased EV uptake are required for a transition to a low-carbon transportation system and progress toward national GHG reduction targets (30% GHG reduction below 2005 levels by 2030). As part of this target, Canada aims to have 30% of all new sold vehicles nation-wide be low- or zero-emission by 2030, increasing to 100% by 2040 (Government of Canada, 2017). As of 2019, Canada has a mix of national and sub-national low-carbon transport policies (carbon tax, subsidies, and three regulations), each of which may help achieve GHG targets. Table A1 in the Appendix shows where policies were implemented in Canada at time of data collection.

The carbon tax was first implemented in British Columbia in 2008, and the policy has since been adopted in many other provinces. The national government requires all provinces to implement a carbon pricing scheme, and a national carbon tax of CAD$20/t of CO_2 came into effect April 1st 2019 as a 'backstop' for provinces that failed to comply. As of December 2020, the federal carbon tax is set to increase to CAD $170/t by 2030, a stringency that experts believe is required for deep GHG reductions.

In terms of regulations, Canada has had a nationally-implemented VES (applying to all provinces) since 2004, which is harmonized with the US federal standards (CAFE). British Columbia is currently the only region with an implemented version of the LCFS (since 2010), although the Canadian government has proposed a national-level LCFS (Government of Canada, 2020). At the time of data collection, Quebec was the only province with an implemented ZEV mandate (which came into effect in 2018). British Columbia's ZEV mandate legislation came into

effect shortly after data collection in 2019.

British Columbia implemented Canada's first EV subsidies in 2010, offering up to CAD$3,000 per EV purchase. Quebec implemented a provincial EV rebate of up to CAD$8,000 in 2012. Shortly after data collection (May 1st, 2019), the national government implemented nation-wide EV purchase incentives of up to CAD$5,000 per vehicle in every province.

6. Method

6.1. Data collection

We designed a 25-minute online questionnaire, which was implemented in April 2019 using the market research company LegerWeb. LegerWeb distributed the survey to a representative sample of Canadian citizens aged 19 and older drawn from their panel, providing a CAD $2.50 incentive for completion.

The final sample consists of 1,552 high quality respondents from all 10 Canadian provinces, with oversamples collected in British Columbia, Alberta, and Ontario (to allow descriptive comparisons between these provinces). Weights were calculated and applied (where applicable) to correct for any biases introduced by the regional oversamples. The survey data demographics are fairly representative of Canadian citizens (see Table 2). However, the final sample is slightly over-representative of more highly educated and mid-income earning respondents compared to Census data.

6.2. Survey instrument

The survey instrument consists of several sections. Here, we only outline the sections relevant to our present analysis. First, levels of support for policies was assessed by asking respondents, "Based on the information provided, we would like to know how much you would support or oppose these policies if there were a referendum (vote) on implementing or keeping them in your region" adapted from Rhodes et al. (2017), reported on a five-point Likert-type scale from, "strongly oppose" to "strongly support". Support for multiple stringency levels (i.e., a 'low' and 'high' policy strength) was asked for each policy (shown in Table 3). Put together, the survey measured support for 10 policy-stringency combinations that were presented to respondents in a randomized order.

In a subsequent section, the survey measured trust in five key actors: national and provincial government, environmental groups, car manufacturers, and scientists. Trust in each actor was first assessed as a single general question, "When thinking about possible solutions to climate change (global warming), including strategies for electric vehicles, please indicate your level of trust in each of the following organizations" adapted from Rhodes et al. (2014), and indicated by a four-point Likert-type scale from, "no trust at all," to "high trust". To explore our key novelty relating to trust (i.e., nuanced types of trust in actors and effect on policy support), we employed a seven-item in-depth questionnaire (Fig. 2) for each of the five actors in turn. Together, these items are meant to measure the three types of trust that we expect to find, based on different empirical models of citizen trust: competence, integrity, and value similarity. Items were adapted from a 2003 UK study, which initially consisted of 11 items relating to a variety of trust constructs (Poortinga and Pidegon, 2003). Items relating to trust in competence (two questions) and integrity (four questions) were indicated according to a four-point Likert-type scale from, "no trust at all," to "high trust". Value similarity was assessed with a single question, "Please indicate if you think these organizations' values are similar or different from your values? By values we mean your thoughts and opinions", indicated by a four-point Likert-type scale from, "very different from my values" to "very similar to my values."

Last, the survey collected details on respondent values, environmental concern, belief in climate change, and demographic characteristics. Values were assessed using a 15-item questionnaire eliciting four value orientations (egoistic, traditional, altruistic, and biospheric) (Stern et al., 1998). Environmental concern was assessed using the "short" (eight-item) New Environmental Paradigm (NEP) scale whereby respondents indicate their level of agreement with eight statements (Dunlap, 2008). Belief in climate change was assessed by asking respondents to identify a statement closest to their opinion on climate change (Axsen, 2014): "It is a serious problem," "It could be a serious problem," "More research is needed," "It is not a problem," and "I don't know anything about this issue."

Table 2
National survey sample compared to 2016 Census data. Weighted data accounts for provincial and sub-provincial oversamples.

		Census data (2016)	Survey sample (weighted %)	Survey sample (non-weighted, n and %)
Population		35, 151, 728	1552	1552
Gender				
	Male	49%	48%	741 (48%)
	Female	51%	52%	811 (52%)
Age				
	19–24	10%	10%	150 (10%)
	25–34	17%	17%	255 (16%)
	35–44	16%	16%	242 (16%)
	45–54	18%	18%	276 (18%)
	55–64	18%	18%	286 (18%)
	65+	21%	22%	343 (22%)
Household income (pre-tax)				
	< $40,000	26%	24%	336 (22%)
	$40,000–$59,999	16%	21%	283 (18%)
	$60,000–$89,999	20%	23%	315 (20%)
	$90,000–$124,999	16%	19%	259 (17%)
	$125,000 +	22%	14%	198 (13%)
Education				
	High school or less	41%	24%	382 (25%)
	Other training/ diploma	34%	40%	618 (40%)
	Bachelor's degree	17%	20%	308 (20%)
	Above Bachelor's	8%	16%	244 (16%)
Household size				
	1 person	28%	20%	306 (20%)
	2 people	35%	42%	655 (42%)
	3 people	15%	17%	265 (17%)
	4 people	14%	14%	217 (14%)
	5+ people	8%	7%	109 (7%)
Region				
	Alberta	12%	12%	252 (16%)
	Maritimes[a]	7%	7%	92 (6%)
	British Columbia	13%	14%	300 (19%)
	Ontario	38%	37%	497 (32%)
	Prairies[b]	7%	7%	89 (6%)
	Quebec	23%	24%	322 (21%)
Region type				
	Rural	19%	17%	287 (18%)
	Urban and suburban	81%	83%	1265 (82%)

[a] Maritimes = provinces of New Brunswick, Newfoundland, Nova Scotia, and Prince Edward Island.
[b] Prairies = provinces of Manitoba and Saskatchewan.

Table 3
Questions assessing citizen support of five policies, and multiple stringencies.

Policy definition	Low stringency *("how much would you support or oppose…")*	High stringency *("how much would you support or oppose…")*
Carbon tax A tax on greenhouse gas emissions from burning gasoline, coal, or natural gas. The tax is "revenue-neutral", meaning that household taxes and corporate taxes would be reduced by the amount collected via the carbon tax.	… a tax of $50 per tonne of greenhouse gas, which raises the price of gasoline by about $0.10 per litre?	… a tax of $150 per tonne of greenhouse gas, which raises the price of gasoline by about $0.30 per litre?
Electric vehicle subsidy A subsidy or rebate for the purchase of an electric vehicle.	… a $6,000 subsidy per household/business in place over the next 2 years?	… a $6,000 subsidy per household/business in place over the next 10 years?
Low carbon fuel standard A requirement that fuels used in your region have lower greenhouse gas emissions, including from the production of the fuel.	… this requirement, such that there are 20% lower carbon emissions than today's fuels by 2030?	… this requirement, such that there are 80% lower carbon emissions than today's fuels by 2050?
Vehicle emissions standard A requirement that new vehicles (cars, SUVs, vans and pickup trucks) must have lower greenhouse gas emissions.	… this requirement, such that there are 30% lower carbon emissions than today's vehicles per vehicle sold, by 2030?	… this requirement, such that there are 60% lower carbon emissions than today's vehicles per vehicle sold, by 2040?
Zero-emissions vehicle sales mandate A requirement that car manufacturers must sell an increasing proportion of electric vehicles each year.	… this requirement, such that electric vehicles make up at least 30% of new vehicle sales by 2030?	… this requirement, such that electric vehicles make up 100% of new vehicle sales by 2040?

6.3. Data analysis

All analyses were completed using Stata IC 15.1 software. To achieve our first research objective, we assessed proportions of respondents who support or oppose each low-carbon transport policy at each stringency level. We calculated 95% confidence intervals for overall support (the total proportion of "somewhat support" and "strongly support" responses) and opposition (the total proportion of "somewhat oppose" and "strongly oppose" responses). For subsequent regressions analysis, policy support responses were coded on a scale of −2 "strongly oppose" to +2 "strongly support". "Neutral" and "I don't know" responses were coded as 0 to represent indifference or uncertainty around support.

To explore our second research objective, we first conducted an exploratory factor analysis for the seven-item trust scale to determine if categories of variables could be grouped into a subset of correlated factors. We conducted separate analyses for each actor and compared the resultant factors, looking for item loadings of at least 0.30 and minimal cross-loading between factors, ultimately choosing to retain two factors. A Maximum Likelihood factor analysis was selected with oblique promax rotation (instead of orthogonal rotation), as this rotation strategy allows some factor correlation. Oblique rotation is generally considered more accurate in social science research (Costello and Osborne, 2005), as behaviour and attitudes are rarely neatly packaged into independent units (i.e. uncorrelated factors). We then describe the frequencies of respondents who trust the five actors according to one general trust question. Responses were coded on a scale from 0 "no trust at all" to 3 "high trust". "I don't know" responses were coded as 1.5 (middle of the scale). Proportions of trust in the five actors were then measured according to the different types of trust distilled from the factor analysis, with responses coded the same as for the 'general trust' question. Paired *t*-tests were conducted to assess significant differences in types of trust in a given actor.

Finally, we conducted a series of multiple linear regression analyses to examine variables associated with policy support, following the categories detailed in Section 4. We first created continuous, composite policy support scores by averaging each respondent's responses for the 'high' and 'low' stringencies of each of the five policies (each ranging from −2 to +2). Composite policy scores were set as the dependent variable for the regression runs, controlling for a selection of variables hypothesized to be important in predicting support. Post-regression diagnostic tests show little concern for multicollinearity in our remaining independent variables (variance inflation factor = 2.13, whereas a score of at least 15 typically indicates concern of multicollinearity). The Breusch-Pagan/Cook Weisberg test confirmed some heteroskedasticity in regression runs. We corrected for any unequal variances by calculating robust standard errors, which did not ultimately change the significance level of our variable coefficients.

7. Results and discussion

7.1. Citizen support for policies

Most (7 out of 10) low-carbon transport policies and stringencies are supported by the majority (at least 50%) of respondents nation-wide (Fig. 3). By 'support', we refer to the summed frequencies of responses for "somewhat support" and "strongly support." We also refer to policy 'opposition' as the summed frequencies for "somewhat oppose" and "strongly oppose" responses. The only policies not supported by the majority of respondents are the carbon tax (both stringency levels), and the strong version of the ZEV mandate.

In line with expectations, we find that the carbon tax is the most strongly opposed policy across Canada, as well as the least supported. The weaker version reflects the trajectory of the national carbon tax at the time of data collection, which set the tax at CAD$50/t by 2022. Only 42% of respondents support this version of the policy, with an equal proportion of respondents in opposition. The strong version of the tax reflects a price thought by experts to be necessary to achieve deep GHG reductions (CAD$150/t) (Carbon Pricing Leadership Coalition, 2017; World Bank Group, 2019), and is supported by only 27% of respondents nation-wide (54% oppose). Notably, the current trajectory of the national tax is set to reach CAD$170/t by 2030, exceeding our 'high stringency' scenario. Relatively high proportions of respondents report

	[The organization]…	Response categories
Competence	1. …is *competent* enough to deal with these issues	"No trust at all" to "High trust"
	2. … has the necessary *experience and knowledge* to make good decisions	
Integrity	3. … intends to act in the *best interest of the public*	
	4. … intends to act *fairly*	
	5. … is *open and honest* with the public, even if it is not in their favour	
	6. … *avoids being overly influenced* by interest groups	
Value similarity	7. … The *values* of this organization are…	"Very different from my values" to "Very similar to my values"

Fig. 2. Seven-item trust scale measuring competence, integrity, and value similarity.

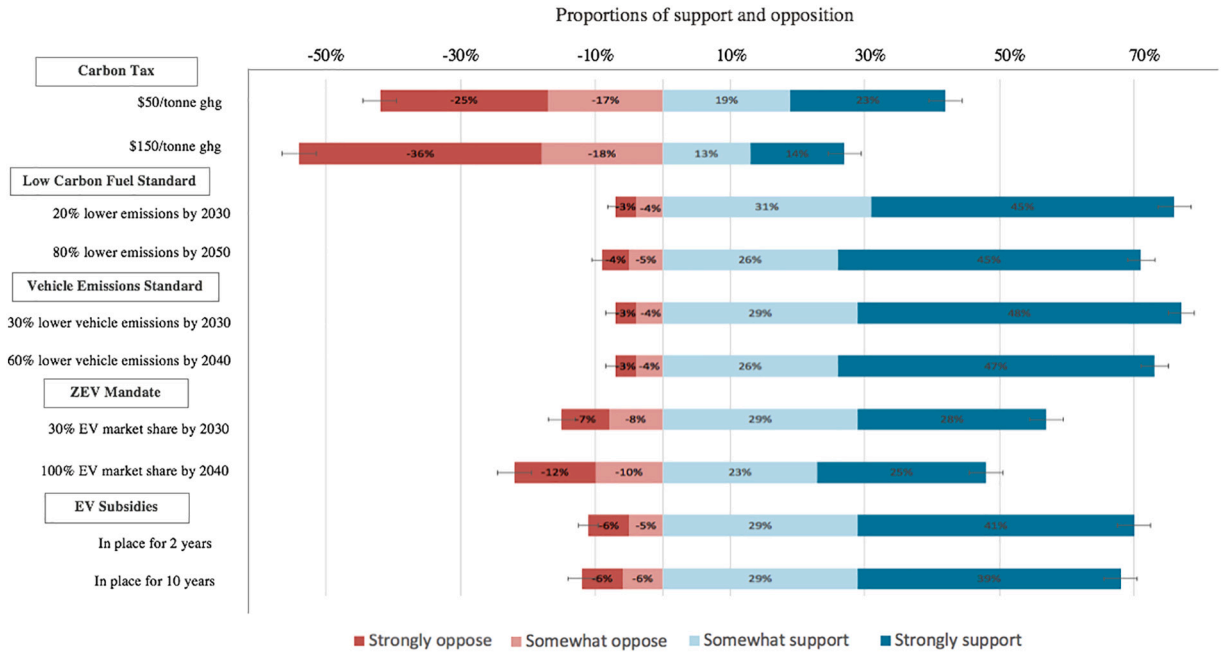

Fig. 3. Proportions of national policy support and opposition ($n = 1552$). Error bars indicate 95% confidence intervals for total proportions of policy support (sum of "somewhat support" and "strongly support" responses) and opposition (sum of "somewhat oppose" and "strongly oppose" responses).

that they would "strongly oppose" both the weak and strong versions of the tax (25% and 36%, respectively) in a hypothetical referendum, compared to other policies.

These results indicate stronger public opposition to the carbon tax compared to a similar study (Rhodes et al., 2017) which found a majority (53%) of respondents supporting a carbon tax in Canada. The difference may suggest a growing national rejection of the policy in response to recent national carbon pricing schemes, or increasingly negative framing of the carbon tax in the media in recent years (Nelson, 2019). This difference may also be partially attributed to the survey phrasing; we presented the policy with explicit personal costs to respondents (i.e., dollars per litre of gasoline), whereas some previous studies did not - which may contribute to lower public support (Chetty et al., 2007; Tobler et al., 2012).

As expected based on previous research (Attari et al., 2009; Jaccard et al., 2016; Tobler et al., 2012), EV subsidies are found to receive strong support nation-wide. Here, subsidies were set at CAD$6000 per household or business, lasting for either 2 or 10 years. Both versions of EV subsidies receive fairly similar levels of support among respondents (70% support subsidies for 2 years, 68% support subsidies for 10 years) and similarly low levels of public opposition. 11% of respondents nation-wide reported they would oppose the shorter term EV subsidies, and 12% oppose longer term subsidies.

Of the regulatory policies (LCFS, VES, and the ZEV mandate), the LCFS and VES are the most strongly supported. The VES receives the greatest amount of national support, with 76% of respondents reporting they would support the weaker version of the policy (i.e., 30% lower vehicle emissions by 2030), and 73% of respondents supporting the strong version (i.e., 60% lower vehicle emissions by 2040). The LCFS receives similarly strong support nation-wide, with 76% of respondents supporting the weaker stringency (i.e., 20% lower fuel emissions by 2030) and 71% supporting the stronger stringency (i.e., 80% lower fuel emissions by 2050). Opposition for these policies is also low compared to opposition of other policies, where both versions of the VES and the weak version of the LCFS receive only 7% opposition, and opposition is only slightly higher for the stronger version of the LCFS (9%). This reflects findings of past research showing that these regulatory policies (VES and LCFS) are likely to see high public support, and avoid strong public opposition (Leiserowitz, 2006; Rhodes et al., 2017).

The ZEV mandate receives relatively higher levels of public opposition compared to the other two regulations, particularly in its strong version. The majority (57%) of respondents nation-wide support the weak version of the ZEV mandate requiring 30% new sold vehicles be low- or zero-emission by 2030 (15% oppose). The stronger version of the policy is supported by a minority of respondents (48% support, 22% oppose), despite Canada's national targets reflecting the same intentions for EV uptake (100% new market share by 2040). We are not aware of other studies that explicitly consider citizen support for the ZEV mandate. We speculate that lower levels of support for this regulation may be partially explained by perceptions that the VES and LCFS are relatively 'up-stream' regulations that primarily impact industry, whereas a ZEV mandate may be perceived as requiring a more obvious behavioural change from citizens who are purchasing electric vehicles over conventional vehicles. The ZEV mandate may therefore be more salient to citizens compared to further up-stream regulations, which likely influences public perceptions of costs and subsequent policy support (Chetty et al., 2007; Tobler et al., 2012).

7.2. *Factor analysis of citizen trust*

To explore our scale of citizen trust, we conducted a Maximum Likelihood factor analysis on our seven-item trust questionnaire for each of the five actors, expecting that several items would be correlated to define different constructs.

As anticipated, results suggest that our seven-item trust scale can in fact be collapsed into three distinct constructs. For four out of the five actors (all except car manufacturers), results indicate a loading of two distinct factors: competence and integrity. The value similarity item cross-loaded onto the two retained factors (highlighted in red in Fig. 4) in every version of the analysis, suggesting that value similarity is a distinct construct of trust. We show a factor solution for the national government (Fig. 4) as an illustrative example, both with and without the cross-loading value similarity item.

Questionnaire items	Analysis #1 Factor 1 "Competence"	Analysis #1 Factor 2 "Integrity"	Analysis #2 (removed cross-loading item) Factor 1 "Competence"	Analysis #2 (removed cross-loading item) Factor 2 "Integrity"
"The national government…"				
… is open and honest with the public…	**0.8234**	0.0906	**0.8249**	0.1011
… avoids being overly influenced by interest groups	**0.7954**	0.1771	**0.7796**	0.0834
… intends to act in the best interest of the public	**0.7779**	0.0729	**0.7508**	0.2273
… intends to act fairly	**0.6881**	0.2799	**0.6505**	0.3234
… is competent enough to deal with these issues"	0.0686	**0.9244**	0.1041	**0.8825**
… has the necessary experience and knowledge to make good decisions	0.2163	**0.7373**	0.1851	**0.7775**
"The values of this organization are…(similar/different)"	0.4889	0.2936		

Fig. 4. Factor analysis results (Maximum Likelihood) for trust in national government: two factors retained with oblique promax rotation ($n = 1552$). Bolded values indicate items most strongly associated with a given factor, red indicates cross-loading values.

7.3. Characterizing citizen trust in actors

Fig. 5 shows proportions of national trust in five actors, in the context of addressing climate change and EV deployment. Trust is further broken down according to three factors distilled from our factor analysis: perceived competence, integrity, and value similarity. Proportions of trust are represented by the summed frequencies of "somewhat trust" and "highly trust" responses for the seven-item trust scale.

Respondents consistently indicate that they trust the competence of actors regarding climate change issues to a greater extent than they trust actors to be of high integrity. This suggests that Canadians may perceive actors as placing organizational interests over the interests of the public. Perceived competence is highest for scientists (79%) and environmental groups (51%), and is lowest for both the national and provincial governments (38% and 32%, respectively).

Perceived competence in car manufacturers (49%) is notably high compared with other factors of trust for this actor and compared to perceived competence in both levels of government. This may be attributed to the context of the survey question assessing perceived competence. Respondents were asked to assess trust in actors in the context of climate change issues, whereby electric vehicles are highlighted as one possible solution. As the public likely views car manufacturers as experts (i.e., highly competent) in electric vehicle development, we acknowledge that respondents may be conflating car manufacturers' competence in electric vehicle development with competence in good environmental decision making. Proportions of perceived value similarity appear to be fairly varied between actors, with scientists and environmental groups being perceived most frequently as having values that are similar to respondents' values (66% and 56%, respectively).

Overall, we find that citizens report relatively low trust in both the provincial and national government to address climate change and pursue EV strategies. Patterns of trust types appear to be fairly similar among both levels of government. Proportions of 'general' trust (according to one 'general trust' question) are also similarly low for the national and provincial governments (41% and 39%, respectively). Though overall trust in governments to address climate change and pursue EV strategies is low, there may be nuanced differences in *how* citizens trust different levels of government in this context. Results of paired *t*-tests (df = 1551) indicate a significant difference between the national and provincial governments in mean trust in competence to address climate change issues and EV deployment. Mean trust in the

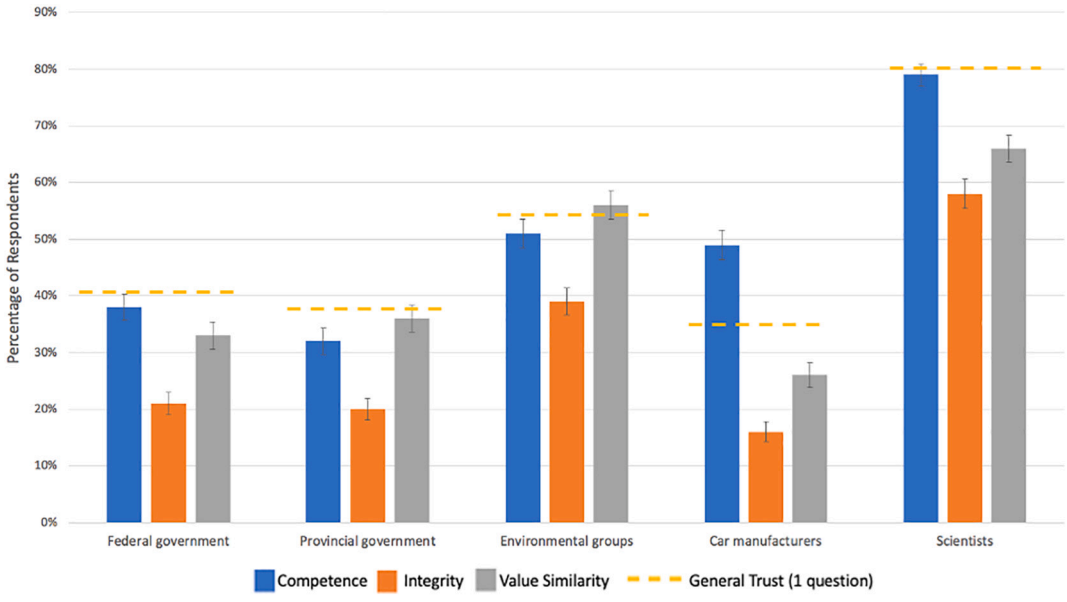

Fig. 5. Proportions of respondents who trust (sum of "somewhat trust" and "highly trust") actors according to three constructs (competence, integrity, value similarity) and one 'general trust' question.

competence of the national government is significantly higher than the provincial government (1.28 vs 1.21 on scale of 0 "no trust at all" to 3 "high trust," $p = 0.0054$). Thus, citizens nation-wide appear to perceive the national government as being relatively more competent (i.e., possessing the necessary skills, experience and expertise) to address climate change compared to the provincial government. Paired t-testing between mean levels of trust in integrity and value similarity between levels of government revealed no significant differences.

7.4. Explaining policy support: The roles of trust (by type and actor)

In this section, we summarize the role of trust in predicting policy support, according to each of the three trust types distilled from our factor analysis: competence, integrity, and value similarity. Results from the multiple linear regression analyses (Table 4) depict the associations between several trust, psychological, socio-demographic, regional variables, and national support for the five low-carbon transport policies.

Comparing citizen trust in the two levels of government is of particular interest in this study, given the government's key role in addressing climate change by enacting policies. Thus, we focus here on trust in national and provincial governments. We also explore trust in industry (represented by car manufacturers) given its role in complying with low-carbon transport policies and advocating for or against these policies. As noted earlier, we chose to omit trust in scientists and environmental groups in our regression, as we speculate that trust in these actors may be closely associated with other environmental constructs (Hmielowski et al., 2014).

We found trust in the national government to be consistent in predicting support for policies. Specifically, citizens trusting that the national government is competent in the context of climate change issues (i.e., experienced and knowledgeable enough to make good decisions) is strongly positively associated with support for all five policies. Trust in the national government's level of integrity (i.e., honesty, openness, and intention to act in the best interest of the public) and perceived value similarity are positively associated with support for the carbon tax only. This is in line with research showing that government trust is particularly important for citizens supporting the carbon tax (Gauchat, 2018; Jagers and Hammar, 2009; Rhodes et al., 2017).

Trust in the provincial government is less consistent in predicting policy support compared with the national government. Perceived value similarity with the provincial government is positively associated with support for the VES only (though the VES is a national, rather than provincial policy). Thus, trust in the provincial government may play a relatively minor role in predicting support for policies, compared with the national government. This may support findings that citizens assign a relatively greater responsibility to the national government in climate change mitigation, compared with sub-national governments (Borick et al., 2011; Lachapelle et al., 2012).

The effect of trust in car manufacturers is curious, as perceived competence in car manufacturers in addressing climate change issues is positively associated with support for the VES and LCFS. We expected that citizens who more strongly trust car manufacturers would be more

Table 4
Multiple linear regression results. Coefficients and significance level (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$) indicate effect on national support for low-carbon transport policies (composite of 'high' and 'low' stringencies).

	Carbon tax		Vehicle emissions standard		Low carbon fuel standard		ZEV mandate		EV subsidies	
Trust in actors (3 factors)										
National government										
Competence	0.302	***	0.182	***	0.203	***	0.172	***	0.206	***
Integrity	0.291	***	0.031		−0.029		0.113	*	0.011	
Value similarity	0.109	**	−0.053		0.025		0.049		0.046	
Provincial government										
Competence	−0.039		−0.063		−0.041		0.020		−0.029	
Integrity	−0.050		−0.072		−0.084		−0.048		0.017	
Value similarity	−0.015		0.114	***	0.060		−0.006		−0.026	
Car manufacturers										
Competence	−0.015		0.140	***	0.110	***	0.012		0.060	
Integrity	0.007		−0.105	**	−0.035		0.013		−0.022	
Value similarity	−0.199	***	0.029		0.041		−0.003		0.055	
Psychological variables										
Altruistic-biospheric values	0.262	***	0.298	***	0.296	***	0.390	***	0.258	***
Egoistic values	0.001		−0.090	***	−0.048		0.101	**	0.056	
Traditional values	−0.386	***	0.068		−0.000		−0.237	***	−0.085	
NEP score	0.019	***	0.041	***	0.050	***	0.038	***	0.040	***
Climate change belief	0.213	***	0.222	***	0.174	***	0.169	***	0.167	***
Socio-demographic variables										
Commuting by vehicle	−0.296	***	−0.058		−0.067		−0.095	*	−0.016	
Age	−0.002		−0.003	*	−0.004	**	−0.010	***	−0.006	***
Female	0.062		0.020		0.002		−0.128	**	0.042	
Household income	0.046	*	0.039	**	0.032	*	0.038	*	0.055	***
Rural residence	−0.082		−0.139	**	−0.073		−0.100		−0.069	
Education:										
Bachelor's	0.125		0.007		−0.011		0.001		0.006	
Above Bachelor's	0.364	***	0.098		0.098		−0.020		−0.050	
Region (reference = Alberta)										
Maritimes	0.003		0.023		0.061		0.206	*	0.306	**
British Columbia	−0.135		−0.024		−0.004		0.228	**	0.260	***
Ontario	−0.048		0.015		0.018		0.153	*	0.043	
Prairies	0.126		0.080		0.005		0.059		0.100	
Quebec	0.081		0.131	*	0.147	**	0.483	***	0.431	***
Constant	−1.531	***	−2.212	***	−2.216	***	−2.110	***	−2.065	***
R^2	0.35		0.36		0.38		0.33		0.28	
N	1,552		1,552		1,552		1,552		1,552	

likely to align with industry interests and oppose low-carbon transport policies (Shwom et al., 2008), as car manufacturers traditionally do. This may be again explained by the context of the survey question, where respondents may be conflating car manufacturers' competence in EV development with competence in good environmental decision making. More in line with expectations, citizen trust in car manufacturers' level of integrity (i.e., honesty, openness, and intention to act in the best interest of the public) is negatively associated with support of the VES, a regulation that car manufacturers have long been vocal in opposing. Perceived value similarity with car manufacturers is negatively associated with support of the carbon tax (as expected), but this negative effect is not found for other policies.

7.5. Explaining policy support: Psychological, socio-demographic, and regional factors

Regression results indicate that some psychological and socio-demographic variables also play a role in explaining support for low-carbon transport policies. We found altruistic-biospheric values, NEP score, and belief in climate change to consistently predict support for all policies. These findings are in-line with the literature indicating that these attitudes and beliefs are associated with support for pro-environmental policies and behaviour (Clark et al., 2003; Dietz et al., 2007; Dunlap, 2008; Perlaviciute and Steg, 2014). However, egoistic and traditional values are less consistent in their effects. Egoistic values are negatively associated with support for the VES, though oddly, are positively associated with support for the ZEV mandate, which we cannot presently explain. A similar Canadian study also found egoistic values to be negatively associated with support for only some policies, such as subsidies and some regulations (Rhodes et al., 2017). We find traditional values to be negatively associated with support for the carbon tax and ZEV mandate only.

Socio-demographic variables are also inconsistent in predicting support for policies. As expected (Rhodes et al., 2017), commuting with a personal vehicle on a daily basis is negatively associated with support for some policies, namely the carbon tax, and the ZEV mandate (though only significant at $p < 0.1$). Older age is associated with lower support for most policies, with the exception of the carbon tax. In contrast with past research (Elliott et al., 1997; Klineberg et al., 2016), we found being female does not predict support for policies, and is negatively associated with support for the ZEV mandate. As expected, higher household income is associated with support for all policies. Higher educational attainment (i.e., holding a degree higher than a Bachelor's) is associated with support for the carbon tax only. Finally, living in a rural region (as opposed to urban or suburban areas) is negatively associated with support for only the VES.

Region of residence also appears to predict support for policies differently. As expected, living in Quebec, British Columbia, and the Maritimes is positively associated with support for policies (i.e., the ZEV mandate and EV subsidies) compared with the reference case of Alberta. Living in Quebec is also positively associated with support for the LCFS and, to a lesser extent, also the VES. This may be explained by the fact that these regions are not closely associated with high-polluting industry and in many cases have had climate policies implemented for longer periods of time (Mildenberger et al., 2016; Murray and Rivers, 2015; Shwom et al., 2008).

8. Conclusion

8.1. Main findings

Research shows that certain policies with more obvious personal costs (e.g., carbon tax), and more likely to be publicly opposed (Rhodes et al., 2017). We indeed find the carbon tax to receive the highest levels of public opposition and least public support compared to other policies. We find that climate policies with less obvious personal costs (e.g., regulations) or more obvious benefits (e.g., subsidies) receive greater public support, and relatively low opposition.

Overall, citizens appear to have relatively low trust in governments (both provincial and national) and car manufacturers to address climate change and enact climate policies; fewer than 50% of respondents indicate that they trust these actors 'generally' in this context. In addition to measuring general trust, we find evidence of three specific types of trust that are differently associated with policy support: competence, integrity, and value similarity.

We find that trust in the national government, particularly in their competence to address climate change, is strongly associated with support for all policies. However, integrity-based trust and value similarity with the national government is associated only with support for the carbon tax. Therefore, while public perceptions of the national government's competence may suffice in improving support for several types of climate policies (e.g., regulations and subsidies), gaining support for the carbon tax may require that citizens also hold rather positive "affective" beliefs about the intentions and values of their government.

Trust in the provincial government generally appears to play a limited role in predicting support for policies. We find only one component of trust in this actor, perceived value similarity, to be associated with support for one policy, the VES. Trust in the fossil fuel industry has previously been found to be associated with climate policy opposition (Rhodes et al., 2017; Shwom et al., 2008), but we do not find consistent associations between policy support and trust in car manufacturers specifically. However, we do find that perceived integrity is negatively associated with support of the VES, a regulation that car manufacturers have long been vocal in opposing. Perceived value similarity with car manufacturers is also negatively associated with support for the carbon tax.

8.2. Limitations and future research

We acknowledge that this study has several limitations and leaves opportunity for further research. First, while our analyses are limited to a Canadian sample, patterns of trust may differ between countries. Research suggests that citizen trust is particularly important for restoring political stability in countries experiencing or recovering from a national crisis, whether economic, political, or social (Blind, 2007). However, as trends of eroding trust in governments appear consistent in many advanced industrial democracies (Dalton, 2005), we speculate that our trust findings will be relevant to other nations with similar political structures. For example, data from the United States, Canada, and several European countries suggest similar trends in decreasing political trust since the 1960s, with only one country (The Netherlands) differing from this trend (Dalton, 2005). We also note that the effects of citizen trust likely extend far beyond policy support, though these effects (e.g., impact on political identify and social networks) fall outside our current scope.

While we presently focus on a selection of transport-related policies, we recognize that other industry-focused climate policies may be less visible or salient to citizens. Support for other types of climate policies may therefore be explained by a different set of factors and trust dimensions. Also, a policy's level of political acceptability depends not only on the perceptions of citizens, but also on support from other stakeholder groups who may exert preferences (or objections) for environmental policies. Future research may wish to complement the findings of this citizen-based study by evaluating climate policy perceptions from the perspectives of other stakeholders who hold influence in policymaking circles.

To focus the scope of our analyses, we chose to omit some potentially important variables that may be associated with policy support. For example, pro-environmental lifestyles, cultural factors, climate change knowledge, additional household demographics, and political ideology have been theorized to play a role in policy support (Axsen et al., 2012; McCright et al., 2016; Shi et al., 2015; Sierzchula et al., 2014). Though

many variables were measured in the survey instrument, some were omitted in our final analyses in efforts to conduct a parsimonious analysis, and due to likely inter-correlation with other constructs. To supplement this study's analysis of trust and policy support, future research may also investigate how citizen trust may be associated with other facets of citizens' personal and political life – for example, political identity and pro-environmental behaviour.

Finally, a 'measurement error' occurs when survey questions are misunderstood or interpreted differently by respondents (Dillman, 2007). Despite pre-testing efforts, we acknowledge that the phrasing of some questions in our survey may introduce potential measurement error, particularly for elements of the survey that are more novel (compared with more established scales). For example, in the case of measuring perceived competence in car manufacturers, respondents may potentially conflate competence in electric vehicle development with competence in good environmental decision making. Future research may wish to conduct further pre-testing for interpretations of questions as they are applied to different stakeholders.

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Appendix

Table A1
Low-carbon transport policy descriptions and implementation in Canada.

Policy 'type'	Policy	Description	Status in Canada (at time of data collection)
Tax	Carbon tax	A tax on greenhouse gas emissions from burning gasoline, coal, or natural gas.	**Provincially** implemented in British Columbia, Alberta, Manitoba, Saskatchewan, Newfoundland/Labrador, and PEI **Nationally** enforced as a 'backstop' of $20/t (increasing by $10 annually until 2022) starting April 1st 2019, for provinces that did not develop a carbon pricing scheme. In December 2020, the Federal Government announced that the national carbon tax would increase to $170/t by 2030.
Subsidy	EV subsidies	A subsidy or rebate for the purchase of an electric vehicle.	**Provincially** implemented in British Columbia (up to $3,000) since 2011, and Quebec (up to $8,000) since 2012 **Nationally** announced (up to $5,000) coming into effect May 1st 2019
	Vehicle emissions standard (VES)	A requirement that new vehicles (cars, SUVs, vans, and pickup trucks) must have lower greenhouse gas emissions.	**Nationally** implemented since 2004
Regulation	Low carbon fuel standard (LCFS)	A requirement that fuels used in your region have lower greenhouse gas emissions, including from the production of the fuel.	**Provincially** implemented in British Columbia since 2010 **Nationally** announced
	Zero emissions vehicle (ZEV) sales mandate	A requirement that car manufacturers must sell an increasing proportion of electric vehicles each year.	**Provincially** implemented in Quebec since 2018, announced in British Columbia (came into effect in May 2019, shortly after data collection)

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