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RESEARCH NOTE/NOTE DE RECHERCHE

The Effects of Personality Traits, Environmental Attitudes, and Demographic Factors on Green Party Support in Canada

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Abstract

By appealing to public concern over environmental issues, Green parties have emerged to gain secure positions in several party systems. However, in Canada, we know very little about why people support the Green Party. This research note draws upon the Canadian Election Study (CES) to explore the ways in which demographic factors, personality traits and individual environmentalism impact vote choice. Theorizing Green Party support as a form of pro-environmental behaviour, we build a model that tests the impact of demographic factors and personality traits as mediated through environmental attitudes. It finds that, while pro-environmental policy attitudes are the strongest predictor of Green Party support, several demographic factors and personality traits—specifically conscientiousness, openness to experience, agreeableness and extraversion—have an effect.

Résumé

En faisant appel aux préoccupations du public sur les enjeux environnementaux, les partis verts ont émergé et ont obtenu des positions sûres dans plusieurs systèmes de partis. Cependant, au Canada, nous savons très peu sur ce qui motive les électeurs à voter pour le Parti vert. Cette note de recherche s'appuie sur l'Étude électorale canadienne pour explorer les façons dont les facteurs démographiques, les traits de personnalité et le déterminisme environnemental individuel affectent le vote. Théorisant le soutien au Parti vert comme une forme de comportement pro-environnemental, nous construisons un modèle qui teste l'impact des facteurs démographiques et des traits de personnalité par l'intermédiaire des attitudes environnementales. Il en ressort que, si les attitudes politiques pro-environnementales sont les prédicteurs le plus fort du soutien au parti écologiste, plusieurs facteurs démographiques et traits de personnalité—notamment le caractère consciencieux, l'ouverture à l'expérience, l'agréabilité et l'extraversion—ont un effet.

Keywords: Green Party of Canada; Green Party voting; environmentalism; personality traits; political parties

Mots-clés: Parti vert du Canada; vote en faveur du Parti vert; déterminisme environnemental; traits de personnalité; partis politiques

Environmental issues have become increasingly prominent in global politics (Chasek and Downie 2020; Zürn 1998). Not only are voters more concerned, but Green parties—which primarily contest elections through environmental issues—have emerged to gain secure positions in several party systems (Carter 2013; Richard and Rootes 1995). That said, Green Party support is often still seen as a high-cost, low-reward choice as even successful Green parties receive a small share of the popular vote and are unlikely to gain positions of power. As such, Green Party supporters seem to be motivated more by ideological proximity or affective attachment than electoral utility-maximization.

We know that, outside of Canada, Green Party support comes largely from young, urban and educated voters (Camcastle 2007; Schumacher 2014). We also know that the differences between liberal and conservative ideology and identification can be attributed, at least partially, to personality differences caused by underlying biological predispositions (Alford, Funk, and Hibbing 2005; Fatke 2017; Ksiazkiewicz 2020). However, the question of whether these demographic factors and the same personality approach could account for aspects of Green Party support in Canada has not been examined. Thus, our main research question is—how do these factors affect support for Green parties in Canada and elsewhere? In this article, we focus more on the role of personality traits, drawing upon the broader literature on pro-environmental attitudes to explore the extent to which support for Green parties can be explained by pro-environmental attitudes driven by a discernible personal predisposition.

We draw upon the Canadian Election Study (CES) to measure traits, individual environmentalism, demographic factors and Green Party support to explore the forces behind this electoral behaviour of interest in Canada. We build a bloc-recursive binary logistic regression model to test the mediated effect of demographics and personality traits on Green Party vote through environmental attitudes. Overall, we find that personality traits play a minor, but statistically significant, role in predicting support for the Green Party of Canada. While pro-environmental policy attitudes are the strongest predictor of Green Party support, the personality traits of conscientiousness, openness, agreeableness, and emotional stability have an impact through the way that they condition environmental attitudes.

Literature Review

Green parties, alongside broader environmentalist movements, emerged in Western Europe and North America in the 1960s. Since then, they have competed in the party systems of most developed democratic states (Richardson and Rootes 1995; Carter 2013; Spoon et al. 2014). Their rise has been linked to the growth of a culturally left-wing, post-materialist electorate no longer concerned with class-based economic issues and traditional electoral cleavages (Meguid 2008; Kahn and Kotchen 2010; Grant and Tilley 2019). Their varying success has been linked to electoral institutions, such as the electoral system, degree of centralization and the political opportunity structures provided by the existing mainline parties (Richardson and Rootes 1995; Grant and Tilley 2019). Some Green parties have formed into influential partners of governing coalitions, while others struggle to elect a few members of a legislative assembly. Nevertheless, in most Western

democracies, Green parties rely on a stable, albeit small, base of support. Research has found two generalizable components. First, electoral support for the Green Party corresponds with membership in broader environmentalist movements and activist organizations (Rüdig and Sajuria 2020). Second, Green Party supporters tend to share specific demographic characteristics. They are predominately younger, urban, more educated and less religious (Schumacher 2014).

The Canadian Green Party follows these trends, generally. Although the first Canadian environmentalist organizations were formed in the 1970s, the Green Party was formalized in 1983. And, while continuing to struggle through volatile and undedicated electoral support, the party had by 2004 become a reasonable fixture of Canadian federal politics, electing some candidates and participating in leaders' debates. As with Green parties more generally, Camcastle's (2007) seminal study on Canadian Green Party members found that they were disproportionately young, educated and prioritized environmental issues. The Canadian Greens also have some unique features. First, many members are ideologically centrist on other policy issues and more heterogeneous in their policy preferences than other partisans (Camcastle 2007).[1] The recent conflict between the "pro-capitalist environmentalism" of Elizabeth May and Annamie Paul and the "eco-socialist" faction over issues such as Israeli-Palestine hostilities serves as a case-in-point (Grant 2020; Reynolds 2021).

Second, Canadian Green supporters are more likely to be self-employed (Camcastle 2007). While receiving support from urban university graduates like Green parties in Europe (Meguid 2008), the Canadian Greens also get support from the owners of ecological or "green economy" businesses, including the agrarian, retail, manufacturing and tech sectors. While Green parties are most often categorized under the label of the "new left," the available findings suggest that Green Party support may be sourced and sustained by factors, related to environmental attitudes, that are distinct from other left-wing parties. For instance, it has found no consistent link between post-materialism, wealth and environmental concern at the aggregate level (Dunlap and Mertig 1995; Jorgenson and Givens 2014). This is particularly applicable to the Canadian Greens, who seem to attract members from a range of demographic and ideological categories with a shared priority on environmental issues (Camcastle 2007).

The political psychology literature has developed rigorous findings on the link between pro-environmental attitudes and the "Big Five" and HEXACO personality traits (Brick and Lewis 2016; Pavalache-Ilie and Cazan 2018; Soutter et al. 2020; Panno et al. 2021). For example, Hopwood et al. (2022) find that, while pro-environmental behaviours have grown over time, it is linked to changes in demographics and personality traits. First and foremost, environmentalism is consistently linked to cognitive openness to experience, likely because flexible, abstract thinking for long-term consequences is necessary in order to develop a concern for environmental issues (Hirsh and Dolderman 2007; Markowitz et al. 2012; Brick and Lewis 2016). Many studies find additional links to agreeableness, extraversion, and honesty-humility (Milfont and Sibley 2012; Pavalache-Ilie and Cazan 2018; Soutter et al. 2020). The link to conscientiousness is less clear (Milfont and Sibley 2012; Brick and Lewis 2016). Marrying these two streams of research suggests that personality should, at least, impact Green Party support through its effect on environmental attitudes.

Theoretical Framework

We follow Hopwood et al. (2022) in conceptualizing electoral support for Green parties as a form of pro-environmentalist behaviour. Green parties position themselves as the champions of environmental causes in electoral appeals, and individuals who are concerned about environmental issues vote for the Green Party as one of many possible pro-environmental behaviours, like participating in protests or engaging in sustainable lifestyle practices. Given the link between pro-environmental attitudes and personality traits, it follows that Green Party support should be linked to the personality traits of openness to experience, agreeableness, honesty-humility, extraversion, and, perhaps, conscientiousness.

Under this approach, personality traits can plausibly have both a direct and mediated effect on Green Party support. Here, we expect personality traits as mediated by environmental attitudes to have a more significant impact. This should be found to operate in the following ways. Openness to experience is connected to a greater capacity for challenging authority and tradition, novel abstract thinking, a preference for variety (adventurousness) and aesthetic sensitivity (McCrae and Costa 2003). More open individuals should be more likely to draw their attention to the state of the environment and challenge conventional political frameworks to promote a more sustainable way of life. More open individuals may support the low-performing Green Party due to their willingness to challenge conventional frameworks. In contrast, less open people with pro-environment attitudes may support mainstream parties because they are unlikely to challenge established structures of partisan competition. At the same time, people who score *high* on openness to experience but *low* on environmentalism may support other forms of contrarianism, such as support for some forms of more right-wing libertarianism.

Agreeableness comprises a tendency toward empathetic, altruistic and co-operative behaviour (Mondak 2010), and honesty-humility is characterized by a sense of fairness, co-operation and egalitarianism (Ashton et al. 2014). As such, individuals who possess these traits should be more willing to both co-operate and make personal sacrifices to preserve a public good like the environment. Still, in the absence of strong pro-environmental attitudes, these individuals' tendency to avoid conflict or divisiveness may lead them to support mainline left-wing parties. Extraversion is linked to a higher degree of personal participation in political activity and a greater likelihood to form social affinities with other activists (Gerber et al. 2011). As such, extraverts who are otherwise environmentally inclined should be more likely to support the Green Party of Canada.

The effect of conscientiousness is less clear. In one sense, the trait is associated with competence, self-discipline and dutifulness, suggesting that these individuals could have the capacity to organize, execute and stay committed to pro-environmental behaviours with a low probability of success (Markowitz and Shariff 2012). At the same time, the trait can also be linked to a desire for orderliness and self-directedness. In contrast, this would entail that these individuals may tend not to challenge conventional social practices to advance novel environmental concerns. It may also lead to individualistic orientation (White and Hyde 2012), which explains why conscientiousness is often linked to political conservatism, which is negatively related to pro-environmental behaviours (Dunlap et al. 2001; Allen et al. 2007). This leaves us

without a clear expectation regarding conscientiousness, but our findings here may inform future studies.

Three main hypotheses emerge. Hypothesis Three, the alternative hypothesis, tests the direct effect.

H1: Green Party support is a form of pro-environmental behaviour. Therefore, broader pro-environmental policy stances should relate positively to electoral support for the Green Party of Canada.

H2: The personality traits of openness to experience, agreeableness and extraversion, as mediated by environmental attitudes, should be positively related to electoral support for the Green Party of Canada

H3: The personality traits of openness to experience, agreeableness, and extraversion should have a direct effect on electoral support for the Green Party of Canada

Data and Methods

Dataset: 2019 Canadian Election Study

We use the 2019 Canadian National Election Study (online), which comprises 37,822 participants in the campaign period survey and 10,337 in the post-election follow-up. Since some of the questions we require (including the Big Five personality battery) are in the post-election follow-up, we limit our empirical investigation to that sub-sample. Further, we only use those respondents who indicated voting for one of the six major parties (Liberals, NDP, Greens, BQ, Conservatives and PPC).[2] We also limit ourselves to observations that have a valid survey weight. This reduces the sample size to 8,128. The Appendix provides more details on the composition of the sample and our choices about dealing with missing data, though we also discuss these briefly below. There were 577 Green Party voters (7%) in the sample—a sufficient size to estimate the models of interest.

The analysis is complicated by several factors.[3] First, most of the variables contain some amount of missing data. As Arel-Bundock and Pelc (2018) and Pepinsky (2018) show, when there is no missing data on the dependent variable (as in our case), and the missing data mechanism is MCAR or MAR (according to Rubin's (1976) classification scheme, as we assume here), both listwise deletion and multiple imputation generate unbiased results. In our case, the listwise deleted dataset is quite small (n=234), mostly due to randomness in which respondents were asked the issue position and personality questions. Using listwise deletion would certainly generate underpowered results and would call into question both the internal and external validity of our analysis. Because of this, we use multiple imputation to characterize the increased uncertainty in our estimates due to missing data.[4]

At first, it may seem inappropriate to impute answers to questions people were not asked. We recognize that this appears unorthodox. Roughly 30% of the data are missing from the full sample of 8,128 observations. However, Pokropek (2011) makes a compelling argument for why imputation is ideal for this situation. He describes these designed as "Planned Missing" designs—where some people are purposefully (and randomly) not asked some questions. In this scenario, the

missingness will be completely at random (Rubin's MCAR), in which case imputation will deliver unbiased results. To ensure the reader that this choice to impute questions that were not asked does not drive the findings, we conduct a parallel analysis in the Appendix using only those observations that were presented with the Big Five personality battery. This reduces the percentage of missing data to just below 10%. The results are substantively similar, and our main findings regarding personality and environmental attitudes continue to hold.

Second, we have several indicators of environmental policy attitudes. We conceive of each indicator as an error-laden realization of an underlying latent environmental policy attitude. We use an ordinal Item-Response Theory (IRT) model to create a single summary measure of environmental attitudes. We discuss the properties of the model, and some measures of model fit in the Appendix.

Third, our data are not from a simple random sample of the population. The sampling scheme produced data that do not perfectly reflect the relative frequencies of people in provinces. As such, the data are weighted by province and phone (landline vs mobile) ownership. We use these weights in survey-weighted regression models to generate population-level inferences.

Statistical Model

The theoretical perspective adopted above is one where demographic variables do not directly impact the vote for the Green Party. Instead, their effects are mediated through environmental attitudes. A simple graphical model of this effect can be seen in Figure 1. The solid arrows indicate the effects of demographics and personality we expect to see through environmental attitudes. The dashed lines indicate the direct effects, which we hypothesize to be zero.

We use the method proposed by Imai et al. (2010a, 2010b) to estimate the mediated effect of demographics and personality through environmental attitudes. We use a Monte Carlo simulations strategy to capture uncertainty in the indirect and direct effects.

Variables and Operationalization

The main outcome of interest is vote for the Green Party of Canada (relative to a vote for any other party). The main independent variables—measurements of

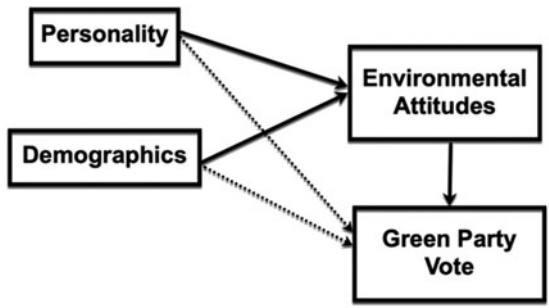

Figure 1: Path Model of Green Party Vote

the "Big Five" personality traits—come from a ten-item battery, wherein each trait is measured with two questions (Rammstedt and John 2007).[5] Each item is asked on a seven-point scale (0-6). We aggregate the two items corresponding with each trait resulting in five measures (one for each of the overarching personality traits of openness, conscientiousness, emotional stability, agreeableness and extraversion) with the resulting two-item scales ranging from (-6,6).

The main mediating variable is environmental attitudes. We use several existing variables—cause of climate change (human vs other), protecting the environment should come before job creation (5-point Likert scale), the federal government should continue carbon tax (5-point Likert scale), spending on the environment (less, same more), the environment should be protected even at the expense of higher prices (5-point Likert scale) and issue importance. We also used the CES dictionary coding of the most important issue–environment dummy.[6] We use an IRT model to generate a single summary measure of environmental attitudes for each respondent. The scale has a single-peaked, roughly symmetric distribution centred around zero with a range of roughly (-2,2).

We include several other variables in the model. Education is coded into four categories (<HS, HS graduate, Some post-secondary, University degree or higher), religious importance was asked on a four-point scale (not at all important, not very important, somewhat important and very important). Place of residence was measured as a five-category urban-rural scale (rural, small town, mid-sized town, suburb of large town/city, large town/city). Gender is measured as Man, Woman and Other. Ideological position is measured by self-reported placement on a (0 [Left]–10 [Right]) scale. Age is the respondent's self-reported age at the time of the survey. Region is coded as Atlantic, Quebec, Ontario, Prairies, BC, the North.

Results

Table 1 shows the coefficients for both models—the first column gives the effects of personality and demographic variables on pro-environmental attitudes.[7] Of the personality variables, openness and conscientiousness are statistically significant predictors. The variable with the biggest effect is left-right self-placement. Education, gender, size of place of residence, religious importance, region and gender all exhibit statistically significant effects on environmental attitudes—mostly in the expected directions. Education, religious importance and region are the only demographic variables that have direct statistically significant effects on the Green Party vote. The most important variable is environmental attitudes. Controlling for environmental attitudes, personality measures and left-right self-placement all have insignificant effects. The effects of religious importance are a bit more complex. Those for whom religion is somewhat important have the lowest level of environmental attitudes, but all other levels are not statistically different from each other.

Figure 2 shows the direct and indirect effects of each of the variables in Table 1.[9] The indirect effect shows how each demographic variable's effect is mediated through environmental attitudes.[10] The direct effect is each variable's effect on

Table 1: Regressions—Environmental Attitudes and Green Party Support

	Environmental attitudes		Green Party vote	
	Estimates	CLD	Estimates	CLD
Pro-environmental attitudes			0.771*	
			(0.105)	
Openness	0.031*		0.051	
	(0.008)		(0.039)	
Extraversion	0.002		-0.025	
	(0.007)		(0.032)	
Agreeableness	0.012		-0.025	
	(0.009)		(0.045)	
Emotional Stability	-0.013		0.005	
			(0.040)	
Conscientiousness			-0.054	
	(0.008)		(0.037)	
Left-right self-placement (0-10)	-0.148*		-0.043	
	(0.006)		(0.030)	
Age	0.000		-0.002	
	(0.001)		(0.004)	
Education (ref: < HS)		ab		ab
High school	-0.008	a	0.236	ab
	(0.067)		(0.334)	
Some post-secondary	0.089	ab	-0.052	ab
	(0.063)		(0.316)	
University degree +	0.230*	abc	-0.299	a
	(0.065)		(0.326)	
Religious importance (ref: not at all)		a		a
Not very important	-0.086	ab	-0.197	ab
	(0.046)		(0.227)	
Somewhat important	-0.085*	ab	-0.430*	ab
	(0.042)		(0.216)	
Very important	-0.033	ab	0.051	a
	(0.038)		(0.180)	
Urban-rural (ref: Rural)		a		a
Small town	0.039	ab	-0.399	a
	(0.055)		(0.230)	
Mid-sized town	0.078	ab	-0.076	a
	(0.055)		(0.242)	
Suburb of large town/city	0.112*	abc	-0.194	a
	(0.050)		(0.208)	
Large town/city	0.162*	abc	-0.263	a
	(0.046)		(0.191)	
Region (ref: Atlantic)		a		a
British Columbia	-0.075	a	-0.371	ab
	(0.051)		(0.206)	
The North	0.327	ab	-0.809	abc
	(0.310)		(0.770)	
Ontario	-0.016	a	-0.694*	ab
	(0.045)		(0.178)	
The Prairies	-0.346*	abc	-1.500*	abc
	(0.048)		(0.223)	
Quebec	0.170*	ab	-1.407*	abc
	(0.050)		(0.236)	
Gender (ref: Man)		a		a
Woman	0.090*	ab	0.167	a

(*Continued*)

Table 1: (*Continued.*)

	Environmental attitudes		Green Party vote	
	Estimates	CLD	Estimates	CLD
	(0.027)		(0.130)	
Other	0.248	ab	0.346	a
	(0.132)		(0.621)	
Intercept	0.718*		-1.194*	
	(0.109)		(0.483)	

Main entries are survey-weighted GLM coefficients (Env Attitudes: Gaussian, Green Vote: Binomial)
N=8,128,
* p<0.05 (two-tailed)
R^2 (environmental attitudes): Average = .32, min= .31. max=.34
PRE[8] (Green vote): Average = -.002, min = -.005, max = 0.002
CLD: compact letter display identifying significant differences among categories of a variable

the Green Party vote not mediated through environmental attitudes. The effect of openness is substantively on the small side—it changes the probability of voting for the Green Party by roughly .02 on average. The findings on openness to experience largely support the main theoretical framework. Consistent with prior findings, they suggest that Green Party support may be driven by the individual's tendency toward challenging the authority of the conventional Canadian party system or the more abstract thinking and aesthetic sensitivity that could shape an interest in environmentalism. Conscientiousness has a negative indirect effect. The role of conscientiousness could suggest that Green Party supporters express their self-preoccupied nature through a more emotive, rather than self-disciplined, form of expression.

The demographic variables also work as hypothesized—being more educated, a woman and living in larger areas all lead to more pro-environmental attitudes. Residing in the Prairie provinces reduces pro-environmental attitudes, on average. The column labelled "CLD" in the table is a compact letter display for each of the categorical variables. The chart relates to the categories of each categorical variable. Levels with the same letter designation are not significantly different from each other. Levels with different letters are significantly different from each other. This display aids in considering pairwise comparisons that are not immediately calculable from the model output (Andersen and Armstrong 2022). The biggest mediated effect is that of left-right self-placement. Those on the far left have a probability of voting for the Green Party that is roughly .075 higher than those on the far right.

Pro-environmental attitudes have the biggest positive direct effect. Those with the most pro-environmentalist attitudes have a probability of voting for the Green Party that is 0.15 higher than those who have the least pro-environmental attitudes. The only other effect that is statistically significant is the region effect wherein those who live in the Prairie provinces have a probability of supporting the Green Party that is 0.1 lower than those who live in the Atlantic provinces.

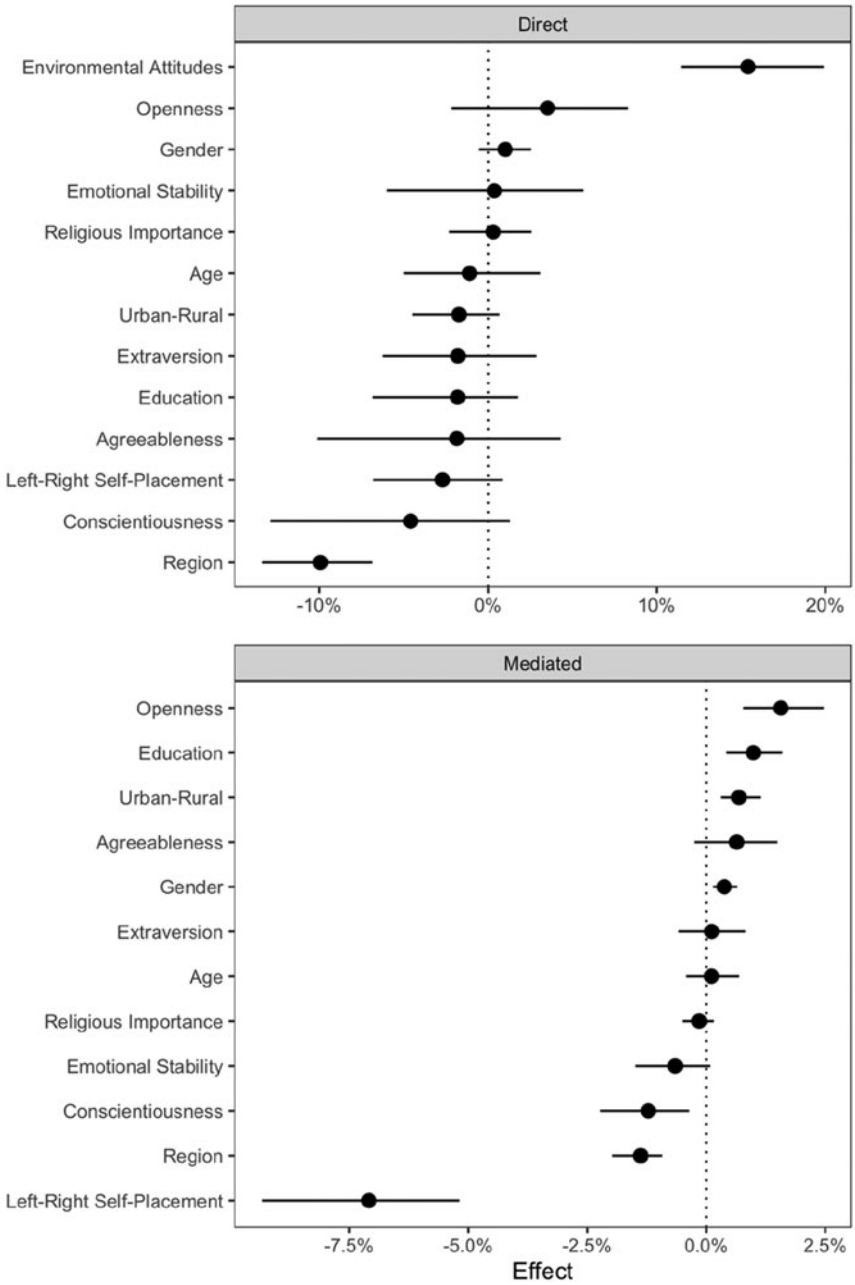

Figure 2. Direct and Indirect Effects from Regression Models in Table 1

Note: The effects for the personality measures, environmental attitudes, age and left-right self-placement are all from a change from the minimum to the maximum of the variable of interest. For urban-rural, the comparison is between large cities and rural areas, for gender the comparison is between men and women, for religious importance the comparison is between the most and least religious and for region the comparison is between the Atlantic provinces and the Prairies.

Conclusion

In this article, we sought to investigate the relationship between Green Party support, environmental attitudes, demographic factors, and personality traits. We conceptualized Green Party support as a pro-environmental activity and theorized that the same personality and demographic traits should influence Green Party support through the way that they are mediated by pro-environmental attitudes. Overall, we find considerable empirical support for our theoretical framework and hypotheses. Reviewing the direct and indirect effects, there are three main takeaways that are worth emphasizing.

First, environmental attitudes are by far the strongest direct predictor of Green Party support. This is not unsurprising, and it confirms the conventional wisdom that the Green Party of Canada exists and finds support through the way it prioritizes environmental policy issues. Yet our findings further suggest that a common concern for the environment, rather than a cohesive left-libertarian ideology, is what characterizes Green Party supporters. This is supported by the fact that while left-right self-placement has a strong direct effect, it is rendered insignificant when we control for environmental attitudes; while most Green Party supporters are left-leaning, this is largely because those on the left tend to care about the environment more than those on the right. Seen this way, our findings suggest that the general ambiguity of both Green Party ideological placement and its internal conflicts over non-environmental policy can be accounted for through a clear ideological heterogeneity. At the same time, we can speculate that much of what drives individuals to support the Green Party is not well approached in right-left spatial terms but is, instead, characterized by a dissatisfaction with the mainstream parties' performance on environmental issues.

Second, Green Party voters in Canada appear to resemble their peers in Europe, in so far as they are younger, less religious, more educated and more likely to live in cities. This casts some doubts on the impression, communicated throughout popular Canadian discourse, that the Canadian Greens have a unique composition of more conservative and agrarian forms of environmentalism. Furthermore, a comparison between the direct and mediated effects shows that several demographics—specifically education, gender and place of residence—are important because of their effects on pro-environmental attitudes. This adds further support to the inference that these types of people support the Green Party because they are more likely to prioritize environmental issues (Hopwood et al. 2022), and it is consistent with the impression that, with some caveats, the Green Party of Canada can be understood within the same, broader left-libertarian or post-materialist frame as other environmentalist parties.

Third, we find that personality traits have a minor, but statistically significant, effect on Green Party support. In particular, when it comes to the mediated effects, the personality traits operate in the way that our theoretical model predicted: while openness to experience, agreeableness and extraversion all have a positive association with Green Party support, those high in conscientiousness are less likely to be supporters. Nevertheless, in our analysis, only openness to experience and conscientiousness have important, statistically significant relationships. Openness to experience, for example, suggests that environmental attitudes emerge from the way that high-scoring individuals are more likely to draw their attention to the state of the environment and challenge conventional political frameworks, ideologies and

structures of partisan contestation. Conscientiousness may be related to practices of orderliness, self-directness and a privileging of convention. This corroborates previous findings that identified a link between low environmental attitudes, conscientiousness and political conservatism (Dunlap et al. 2001; Allen et al. 2007).

These interpretations are made with caution. Although the effects of the personality variables are larger than the effects of the demographic factors considered (except for region and left-right self-placement)—all these effects are quite small. At the same time, we do feel our analysis highlights one part of the causal mechanisms that link these personality traits to environmental attitudes beyond the initial, empirically based speculation that has been offered previously. That said, the inclusion of the Big Five rather than the HEXACO model in the survey data used means that honesty-humility—despite being theoretically important—could not be analyzed here, so our conclusions remain intriguing, but tentative.

Still, we believe that this analysis presents several interesting characteristics of Green Party support in Canada that can be pursued by further research. This is of relevance to both scholarly efforts to build more general knowledge of Green and left-libertarian parties, in addition to examinations of the way that the Green Party of Canada is specially constituted or expressed. First, future research can focus on further exploring, interrogating and outlining the impact that environmentalism, demographic factors and personality traits have, including the more specific ways that Green Party supporters approach electoral competition and make decisions. In particular, it can expand beyond the largely correlational focus of our article to, through greater data access, integrate several possible causal mechanisms. For example, the relatively small values of these traits raise the question of to what extent are these relevant and should factor into more general scholarly understandings of voter behaviour. Can a certain trait or component of environmentalist personality override another demographic or ideational disposition that in itself would predispose someone not to support Green politics? Second, future research can further investigate whether the Canadian Greens are at all unique, and what insight this may provide into the nature of ecological parties overall. This not only includes the factors behind initial electoral support but can also mean the variables and processes that influence the way Canada's Greens are organized, develop policy positions and compete in Canada's electoral and party systems. How do the different constraints and incentives associated with the PR and majoritarian electoral systems affect partisan environmentalist movements?

Future scholarly efforts on the Canadian Greens will require larger and more targeted data sets. We need more specific data on Canadian Green Party supporters, and this needs to make use of more precise measurements of personality traits and environmentalism. This will not only expand the questions that can be answered but will also reduce threats to internal validity. Green Party support in Canada is small, and the recent internal conflicts of the party have compromised its effectiveness and success. Nevertheless, a growing concern for environmentalist issues among both the public and political elites suggests that this is a political area that will only grow over time.

Supplementary Material. The supplementary material for this article can be found at https://doi.org/10.1017/S0008423924000258.

Notes

1 Scholars have shown that in some cases Green parties adopt a more generic left-wing platform, including liberal positions on most social policies to increase electoral support (Kaelberer 1998; Carter 2013; Dolezal 2010).

2 It is difficult to disentangle who voted and did not indicate their choice versus those who did not vote. To err on the side of caution, we only use those respondents who reported voting for a party.

3 The online Appendix provides a detailed discussion of all aspects of our empirical analysis.

4 We use the multiple imputation by chained equations (MICE) algorithm implemented in the "mice" package in R to impute the data (van Buuren and Groothuis-Oudshoorn 2011). Specifically, we use predictive mean matching to produce 25 completed datasets that will be used throughout the analysis.

5 To measure personality traits, respondents were asked how well a pair of words describes them.

6 These were: extraverted/enthusiastic and reserved/quiet (extraversion), critical/quarrelsome and sympathetic/warm (agreeableness), anxious/easily upset and calm/emotionally stable (emotional stability), open to new experiences/complex and conventional/uncreative (openness to experience), disorganized/careless and dependable/self-disciplined (conscientiousness).

7 Ideally, we might have used the New Ecological Paradigm (Dunlap et al. 2000) or the Pro-Environmental Behavior Scale (Ugulu et al. 2013) to measure environmental attitudes, but these were not available in the CES.

8 See Table A2 in the Appendix for models that only use respondents who were asked the big 5 personality battery.

9 PRE is the Proportional Reduction in Error and is calculated as $\frac{PCP-PMC}{1-PMC}$, where *PCP* is the proportion of observations correctly predicted by the model (i.e., their predicted class and observed class are the same) and *PMC* is the proportion of observations in the modal category of the dependent variable. This measure has properties like the R^2 in a linear model, which also captures the model's proportional reduction in error though is calculated differently from above.

10 See Figure A4 in the Appendix for models that only use respondents who were asked the big 5 personality battery.

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