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Support for coercive and voluntary climate policies: the relevance of climate change concern, political trust and generalised trust in Finland

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Abstract

Purpose – This paper aims to study how climate change concern, political trust, and generalised trust are associated with public support for coercive and voluntary climate policies. Understanding these dynamics is critical for crafting climate policies that gain sufficiently broad public support, ensuring their longevity and efficacy.

Design/methodology/approach – This study analyses data from a probability sample of 2,169 respondents collected in Finland in 2022. The data analysis was conducted using an ordered probit regression model. This study also examines interaction effects to understand how political and generalised trust modify the impact of climate change concern on support for both coercive and voluntary climate policy measures.

Findings – The analysis indicates that higher levels of both climate change concern and political trust are associated with more support for climate policies, whether coercive or voluntary. Higher generalised trust is associated with more support for voluntary policies, particularly among those with lower levels of climate concern. Conversely, political trust significantly increases the likelihood of supporting coercive measures, irrespective of the level of climate concern.

Originality/value – This study contributes to the understanding of how different trust dimensions intersect with climate change concern to shape public support for coercive and voluntary climate policies. By acknowledging the roles of these factors, policymakers can tailor strategies to enhance public acceptance and the effectiveness of climate actions. Moreover, instead of exploring individual measures, by examining coercive and voluntary climate policies as entities the study provides new insights into the study of attitudes on climate policy.

Keywords Public opinion, Public attitudes, Climate change concern, Climate change mitigation

Paper type Research paper

1. Introduction

Climate change is a textbook example of a large-scale collective action problem, where compared to smaller-scale collective problems actors are less likely to cooperate (Jagers *et al.*, 2020). Climate change poses a global threat (Gergis, 2022) and vulnerable groups impacted

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by its effects, such as heat stress, are found not only in the Global South but also in regions like Europe, including countries such as Portugal (Lopes *et al.*, 2025) and Finland (Päivärinne *et al.*, 2025). Governments play a crucial role in mitigating climate change, as they still possess the legitimacy and coercive power to promote cooperation regarding mitigation (Duit *et al.*, 2016). However, despite the global threat posed by climate change, implementing effective mitigation policies has proven challenging. Global greenhouse gas emissions have steadily risen, with 2020 being an exception due to the pandemic (UNEP, 2024). This underscores the urgent need for more robust climate actions.

One significant barrier to the implementation of more effective climate policies is, or can be, public opinion (Drews and van den Bergh, 2016). Studies indicate an association between public attitudes and the level of climate policy implementation (Anderson *et al.*, 2017; Levi, 2021). Therefore, understanding public attitudes towards climate policies is crucial for designing and implementing policies that are long-term, effective and legitimate. This research aims to deepen our understanding of climate policy attitudes and their formation.

Successful climate change mitigation is likely to require a combination of coercive and voluntary policy measures (Goulder and Parry, 2008; Thaler and Sunstein, 2021). Coercive policies are regulatory measures imposed by public administration, mandating compliance with specific environmental standards and including penalties for non-compliance. Examples include carbon taxes, emission standards and low-carbon energy mandates. Voluntary policies, on the other hand, encourage individuals and organisations to adopt sustainable practices without legal mandates, often through public awareness campaigns, recognition programmes, and nudges. According to Meckling and Allan (2020), ideological foundation of climate policy has shifted from a market-oriented, neoclassical paradigm dominant in the 1990s towards a more diversified policy discourse emphasizing an active role for the state and green industrial policy. This transformation has expanded the range of legitimate policy tools beyond market mechanisms to include multifaceted policy mixes that combine coercive and incentive-based or voluntary instruments (Nakamura, 2011; Meckling and Allan, 2020).

Coercive measures are informed by the theory that market failures occur due to externalities, such as environmental pollution, which are not accounted for in the cost of goods and services. Governments intervene, for example, by setting regulations and standards that legally mandate reductions in emissions and improvements in energy efficiency, or be setting prices to emissions (Goulder and Parry, 2008; Zhang *et al.*, 2024). Broadly speaking, both pricing and regulating carbon emission have been important parts of the climate policies. Contemporary systematic reviews reinforce this theoretical foundation: a meta-analysis of 21 carbon pricing schemes found reductions in greenhouse gas emissions ranging from 5% to 21% following implementation (Döbbeling-Hildebrandt et al., 2024). In addition, firm-level studies confirm that mandatory environmental regulations consistently stimulate green innovation (Zhang *et al.*, 2024).

In contrast, voluntary climate measures are based on encouraging or guiding rather than mandating behavioural change. These initiatives encourage individuals and organisations to adopt more climate-friendly practices without legal compulsion or sanctioning. The theoretical background of voluntary measures stems especially from behavioural sciences, which emphasise that positive incentives, social norms and public acceptance can nudge individuals and organisations toward adopting practices that align with climate goals. Strategies designed to encourage climate-wise responsible behaviour without mandatory regulations can result in climate-friendly behaviour out of moral or social responsibility (Nyborg *et al.*, 2016). Voluntary climate policy instruments – such as self-set climate targets or participation in environmental certification schemes – operate without regulatory

enforcement, appealing both to individuals' sense of moral or social responsibility (Nyborg *et al.*, 2016) and to cultural worldviews that value individualism (Bretter and Schulz, 2025).

Trust plays a significant role in shaping public support for climate policies. Previous research has highlighted the importance of both climate change concern and trust in political institutions in this respect. Political trust influences how people evaluate the government's competence and intentions, affecting support for coercive policies (Kyselá, 2017; Levi, 2021). Generalised trust, which reflects trust in other people, can influence support for voluntary policies, as trusting people may believe others will cooperate in climate change mitigation voluntarily. However, high levels of generalised trust may also lead to opposition to coercive policies, as people might expect others to cooperate voluntarily. Conversely, high political trust often boosts support for coercive policies, for example, due to trust in the competence of political institutions (Matti, 2015; Levi, 2021).

Prior studies highlight the importance of climate change concern in public support for climate policy (e.g. Drews and van den Bergh, 2016; Smith and Mayer, 2018). Kulin and Johansson Sevä (2021) observed that political trust enhances the translation of climate concern into climate policy support, especially at the country level. Furthermore, citizens who are more concerned about climate change are more inclined to accept the costs of such policies, but this willingness is dependent on their political trust (Fairbrother *et al.*, 2019). It may be that political trust is a prerequisite for climate concern to be channelled as support for climate policies. In this study, we explore this possibility in relation to both political trust and generalised trust.

To clarify our understanding of the complex associations between climate concern, trust and climate policy attitudes, this study addresses the following research questions:

RQ1. How is climate change concern associated with attitudes on coercive and voluntary climate policy measures?

RQ2. How is political trust associated with attitudes on coercive and voluntary climate policy measures?

RQ3. How is generalised trust associated with attitudes on coercive and voluntary climate policy measures?

RQ4. How do political and generalised trust modify the association between climate change concern and attitudes on coercive and voluntary climate policy measures?

The characteristics of the context of this study, Finnish society, include high levels of trust in political institutions and other people (Torcal, 2017; Bäck and Kestilä-Kekkonen, 2019; Kouvo, 2011). Furthermore, generalised trust among Finns has remained relatively stable despite recent global hazards such as COVID-19, which highlights the resilience of the society (OECD, 2021). Finnish people are generally concerned about climate change and willingness to mitigate climate change has increased over the years (Ervasti and Mustikkamaa, 2020). Finland exemplifies the Nordic welfare state model and the principle of universal welfare services (Kangas and Kvist, 2018), and scores highly on the quality of government index (Charron *et al.*, 2022). These qualities provide an informative context to examine climate policy attitudes. As Matti (2015) points out, trust in public administration is a key component of effective policy measures.

Our study utilises Climate Nudge survey data collected in Finland during spring and summer 2022 and applies ordered probit regression analyses (see, Figure 1). After reviewing the literature on coercive and voluntary climate policy measures and on climate concern and political and generalised trust, we present the data and methods. We then provide an

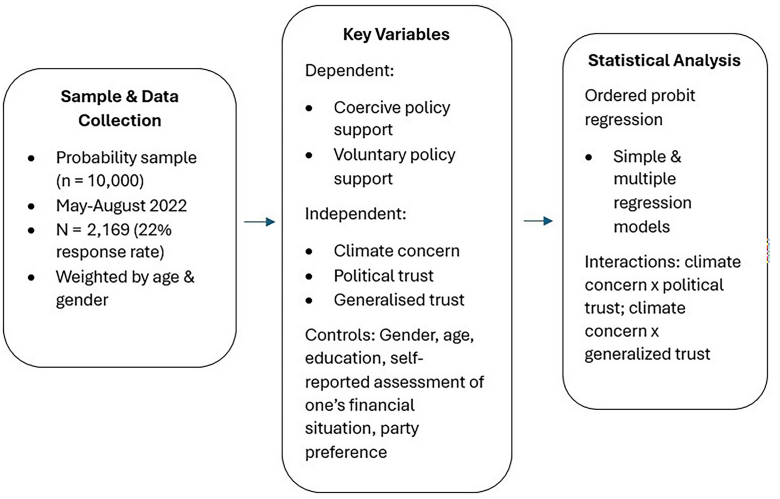

Figure 1. Schematic overview of the study design, variables and analytical strategy
Source: Created by authors

integrated Results and Discussion section that combines empirical findings with theoretical and practical interpretation, highlighting the importance of political trust and the nuanced role of generalised trust. The paper concludes with implications for policy and broader climate governance.

2. Public support for policies and the significance of trust and climate concern

In this section, we explore the factors that may influence public support for climate policy measures and discuss their relations to coercive and voluntary measures. Matti (2015) provides a framework to analyse differences in attitudes towards climate policy measures. According to him, there are four basic reasons why certain measures gain more support than others:

(1) perception of effectiveness;
(2) personal outcome expectancy;
(3) consequences for freedom; and
(4) consequences for fairness (Matti, 2015).

Perception of effectiveness refers to the evaluation of how effective a policy instrument is in mitigating climate change. Policy instruments perceived as ineffective tend to receive less support (Matti, 2015). This notion is supported by a meta-analysis (Bergquist *et al.*, 2022) which identified perception of effectiveness as a key factor predicting support for carbon taxation. According to Matti (2015), since climate policy measures are typically planned and implemented by public administrations, the perceived effectiveness of these measures is also influenced by how trustworthy political institutions are considered to be. If we focus solely on effectiveness in mitigating climate change, coercive measures might in principle garner more support than voluntary ones. Voluntary actions allow for the continuation of activities harmful to the climate, whereas coercive measures do not – at least when implemented

ambitiously enough. However, perceptions of policy effectiveness also depend significantly on one's understanding of the causal processes behind climate change (Matti, 2015).

Personal outcome expectancy involves assessing the costs and benefits of implementing a policy (Matti, 2015). Policies with more visible costs generally receive less support than those with hidden costs (Drews and van den Bergh, 2016). Since voluntary climate actions generally have a smaller impact on people's lives, it is reasonable to assume that, from the perspective of personal impacts, voluntary actions would be more popular than mandatory measures. However, outcome expectancy is not limited to material aspects; the social context is also important. For example, differences in norms between social groups can influence attitudes and actions, either bolstering or diminishing support for climate policies (Matti, 2015). Furthermore, people who are more concerned about climate change tend to be more willing to bear the costs associated with climate policy (Fairbrother *et al.*, 2019).

How policy affects freedom of choice is another factor associated with policy support (Matti, 2015; Rissman *et al.*, 2017). Coercive measures are typically perceived to limit freedom more than voluntary measures, and as a result, they often receive less support (Kyselá, 2017). The experience of freedom is closely related to the value priorities held by individuals. For example, the extent to which restrictions on personal freedom impact support for a policy instrument depends on how strongly personal autonomy is valued (Rissman *et al.*, 2017). In addition, the individual's willingness or ability to personally adhere to the required climate-friendly behavioural changes also matters (Matti, 2015).

Perception of fairness can significantly influence support for climate policies. Empirically, it has been observed that the perceived fairness of a policy is a significant predictor of support for carbon taxation (Bergquist *et al.*, 2022). According to a study from the USA, the most common reasons for perceiving a carbon tax as unfair include the belief that the price of petrol is already too high, distrust in the government, the necessity of driving, and the assumption that the tax will disproportionately burden poor citizens and the middle class (Povitkina *et al.*, 2021). Several factors may explain why coercive climate measures are perceived as fair or unfair compared to voluntary climate policies. Coercive policies may be perceived as unfair and receive less support due to their visible costs and restrictions, which may disproportionately affect disadvantaged groups. Conversely, voluntary policies may be seen as fairer, offering more personal choice and fewer restrictions, thus gaining higher support.

In summary, when compared with coercive climate policies, less coercive or completely voluntary policies typically receive more public support (Drews and van den Bergh, 2016). According to Matti's (2015) framework, there are several reasons why the public tends to favour voluntary climate policies over coercive ones. Voluntary measures preserve personal freedom, are perceived as fairer, and often involve lower visible economic costs. In addition, trust in government and the perceived effectiveness of policies play key roles. Coercive measures often face scepticism if the positive impact of the policies is doubted.

Concerns about climate change among people are real, as is the general awareness of the risks and threats posed by it. Previous research has observed that climate concerns positively influence citizens' support for climate actions and policies (e.g. Drews and van den Bergh, 2016). Furthermore, the greater the concern about climate change, the more willing people are to support policy initiatives that affect their lives, such as carbon taxes (Fairbrother *et al.*, 2019).

Climate concern has attracted interest from various disciplines, including psychology, social science and political science. However, the concept has not been clearly defined or conceptualised. On the one hand, it encompasses individual worry about the personal, societal or environmental impacts of climate change (van der Linden, 2017). These

discussions link climate concern to individual wellbeing through affective and pathological aspects such as fear, anxiety and depression. On the other hand, climate concern is linked to social movements and political activity.

Concern itself does not necessarily directly translate into support for policy actions (Fairbrother *et al.*, 2019). Even people with strong environmental values may reject policy initiatives or feel sceptical about the effectiveness of named measures. As such, it may be the case that political trust serves as a prerequisite for concern to be channelled into support for climate measures.

Trust in political institutions and generalised trust influence attitudes towards climate policies in a nuanced way. Trust in the decision-makers involved in policy execution plays a vital role when citizens evaluate how supportable a certain climate policy is (Matti, 2015). Similarly, trust in the actors targeted by the policies is crucial; they must be perceived as trustworthy to ensure compliance with implemented policies. For example, trust in how other people comply with regulations can influence the extent to which one supports different kinds of climate policies (Davidovic, 2023).

Trust in political institutions, i.e. political trust, can be characterised as vertical trust, and generalised trust as horizontal trust. Generalised trust is defined as the extent to which people rely on each other, including those they do not know personally (Kouvo, 2011, p. 20). Both political and generalised trust in Finland are among the highest in Europe (e.g. Bäck and Kestilä-Kekkonen, 2019).

The impact of trust on climate policy attitudes varies depending on the type of trust and the policies under consideration. Harring (2018) outlines two main perspectives: one suggests that greater trust in institutions and other people encourages acceptance of state intervention and stricter policies, since it strengthens the belief that these will be effectively implemented. Conversely, the other perspective proposes that distrust fosters demand for coercive measures. A survey of Swedish students illustrates how the influence of trust varies by trust type and policy category. For example, higher levels of political trust correlate with support for diverse climate policies, while trust in business actors corresponds to reduced support for coercive climate measures (Harring, 2018).

Smith and Mayer (2018) find that both trust in political institutions and courts (i.e. institutional trust) and generalised trust positively influence climate actions and support for climate policy at the individual level. In particular, generalised trust is a stronger and more consistent predictor than institutional trust (Smith and Mayer, 2018). Kulin and Johansson Sevä (2021), in contrast, observe that higher levels of political trust and trust in impartial institutions, such as the police and the legal system, predicted better translation of citizens' climate concern into policy support at the individual level in Europe. At the country level, the latter trust was especially influential (Kulin and Johansson Sevä, 2021).

Compared with other forms of trust, political trust is particularly important in the context of risk-laden policies, which include measures with uncertain outcomes that may be either beneficial or detrimental. As people often lack comprehensive information about political issues, trust in political institutions becomes critical when evaluating the feasibility or identifying the beneficiaries of such policies (Rudolph, 2017). For instance, a rise in taxation can be seen as an economic risk for households, and the level of political trust among citizens can play a significant role in whether they support or oppose such a measure. Several empirical studies highlight political trust as a crucial predictor of favourable attitudes on climate policies, notably concerning carbon and fuel taxation (e.g. Bergquist *et al.*, 2022; Levi, 2021).

People are more likely to adopt green behaviours when they trust that others are doing the same. This concept, known as conditional cooperation, suggests that if individuals think other people are not contributing to solving environmental problems, they themselves are

less likely to cooperate. This could explain why having a higher level of generalised trust reduces the gap between caring about the environment and taking action to protect it (Tam and Chan, 2018). In addition, a strong sense of trust in other people might make one less inclined to support coercive climate policies. One might view these tougher measures as unnecessary if one believes everyone is already working together effectively to address climate change.

Empirical evidence regarding the relationship between generalised trust and climate policy attitudes is inconsistent. Some studies, such as those by Tam and Chan (2018), Bodor *et al.* (2020) and Smith and Mayer (2018), identify a positive link between generalised trust and support for environmental protection. However, others such as those by Harring (2018) and Kyselá (2017) find no definitive connection. Sivonen (2020) notes that the association between generalised trust and support for fossil fuel taxation is generally weak across many European countries, especially when compared to political trust. In addition, a study by Davidovic and Harring (2020) suggests that both political and generalised trust may partially mediate the influence of government quality on support for carbon taxation. However, this mediation does not extend to renewable energy subsidies or the banning of the least energy-efficient appliances (Davidovic and Harring, 2020), indicating that further research is necessary into the relationships between different types of trust and climate policies.

Based on the discussion above, we formed following research questions and hypotheses.

RQ1. How is climate change concern associated with attitudes on coercive and voluntary climate policy measures?

Previous studies have shown that higher climate change concern increases support for different types of climate policies (e.g. Pohjolainen *et al.*, 2024; Sivonen and Kukkonen, 2021). Climate concern indicates that one is aware of at least certain harms that climate change is causing, hence we expect support for mitigation policies to be more pronounced among individuals with higher concern. In other words, we hypothesise that:

H1a. Higher climate concern is associated with greater support for coercive climate policies.

H1b. Higher climate concern is associated with greater support for voluntary climate policies.

RQ2. How is political trust associated with attitudes on coercive and voluntary climate policy measures?

Research shows that higher political trust is linked to greater support for both coercive and non-coercive climate policies (e.g. Harring, 2018; Davidovic and Harring, 2020). Trust in political institutions increases the perceived legitimacy and acceptance of policies, especially when they involve personal or financial costs (Sivonen and Kukkonen, 2021). As political trust also reflects trust in the competence of political institutions, political trust may similarly be associated with support for voluntary measures (which also require competence to be implemented successfully). Thus, we hypothesise that:

H2a. Higher political trust is associated with greater support for coercive climate policies.

H2b. Higher political trust is associated with greater support for voluntary climate policies.

RQ3. How is generalised trust associated with attitudes on coercive and voluntary climate policy measures?

Generalised trust encourages cooperation and belief in collective action (Tam and Chan, 2018). This may increase support for voluntary policies, which rely on shared responsibility, but also for coercive policies, if people believe others will comply with the legislation (Davidovic, 2023). However, it would also be justified to assume that higher generalised trust is associated with lower support for coercive policies, given that a person with high trust in others may think that coercive policies are unnecessary. As the literature on this theme is unclear, we will not present a hypothesis about the association between generalised trust and attitudes on coercive policies. Instead, we only hypothesise that:

H3. Higher generalised trust is associated with greater support for voluntary climate policies.

RQ4. How do political and generalised trust modify the association between climate change concern and attitudes on coercive and voluntary climate policy measures?

Trust may enhance the extent to which climate concern translates into support for climate policy. Political trust can increase confidence that authorities will act effectively, thereby making concerned individuals more likely to support climate policies (Fairbrother *et al.*, 2019; Kulin and Johansson Sevä, 2021). Similarly, generalised trust may strengthen the link between climate concern and policy support by reinforcing the belief that others participate in voluntary climate actions – making such efforts seem effective rather than futile. As noted above, we will refrain from presenting a hypothesis about the association between generalised trust and coercive policy attitudes, but we do hypothesise that:

H4a. Political trust strengthens the positive association between climate concern and support for coercive climate policies.

H4b. Political trust strengthens the positive association between climate concern and support for voluntary climate policies.

H4c. Generalised trust strengthens the positive association between climate concern and support for voluntary climate policies.

3. Data and methodology

Given our interest in public opinion in Finland, this study involves analysis of survey data. Climate Nudge data were collected between May and August 2022 in Finland. The study is part of the Climate Nudge project to evaluate, develop and pilot nudges to promote climate-friendly actions (Climate Nudge, 2025). Our data consist of 2,169 responses (sample size = 10,000, response rate = 22%) representing the population aged 20 and older in Finland (see Figure 1). The random sample was obtained from the population register of Finland. The questionnaire was available both on paper and online to Finnish- and Swedish-speaking respondents, while the English language version was available online only.

We assessed attitudes towards coercive climate policy measures through the statement, “The state should enact bans and taxes that coerce citizens to act in a more climate-friendly way”. Attitudes towards voluntary climate policy measures, meanwhile, were assessed through the statement, “The state should guide and encourage citizens to make voluntary climate-friendly choices”. The response options for both of these propositions were 1) Completely agree, 2) Somewhat agree, 3) Neither disagree nor agree, 4) Somewhat disagree, and 5) Completely disagree. To enable a more intuitive interpretation, he scales were reversed so that higher values indicated stronger agreement. In Figures 2 and 3 (interaction analysis), the variables are dichotomised: responses Completely agree and Somewhat agree

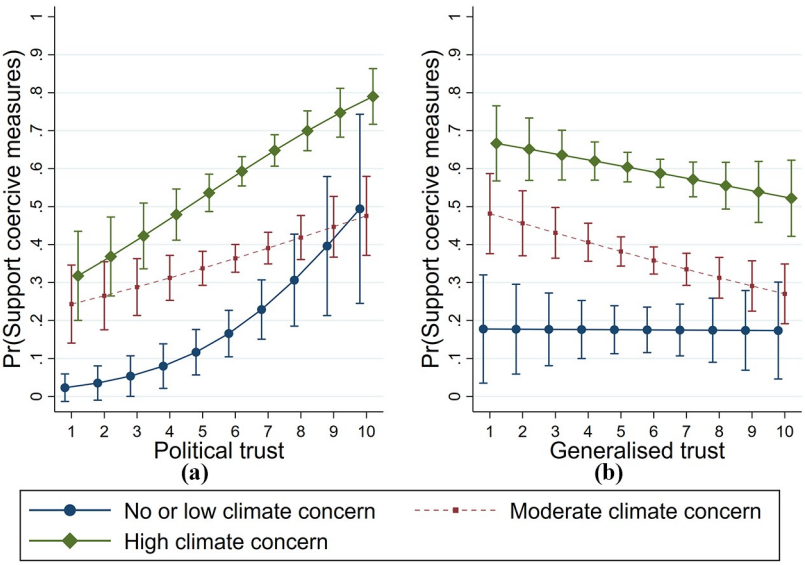

Figure 2. Support for coercive climate policy measures by levels of trust and climate concern. (a) Predicted probabilities of support across levels of political trust, by level of climate concern. (b) Predicted probabilities of support across levels of generalised trust, by level of climate concern
Source: Created by authors

are coded as 1 = support, while Neither agree nor disagree, Somewhat disagree, and Completely disagree are coded as 0 = do not support.

The climate change concern question was, "Are you concerned about climate change?" The response options were 1) I am not at all concerned, 2) I am not very concerned, 3) I am somewhat concerned, 4) I am very concerned, and 5) I am highly concerned. To ensure sufficient observations on each category in the interaction effects analysis, Categories 1 and 2 were combined into Category 1: "No or low climate concern", Category 3 was reclassified as 2: "Moderate climate concern", and Categories 4 and 5 were reclassified as Category 3: "High climate concern".

The trust variables were measured using the question, "To what extent do you trust the following?", with response options ranging from 1 ("I do not trust at all") to 10 ("I trust very much"). The generalised trust variable is based on trust in "other people" (with a value range of 1–10). To measure political trust, we formed a sum variable that consists of trust in three political institutions: "the Parliament of Finland", "political parties" and "Finland's government" (e.g. Kestilä-Kekkonen and Söderlund, 2016). To make the scales of the trust variables consistent, we transformed the scale of the political trust sum variable from 3–30 to 1–10.

Questions regarding support for coercive climate policy measures, support for voluntary climate policy measures, climate change concern, political trust and generalised trust included the response option "Don't know". "Don't know" answers were not included in our analysis.

According to previous research, climate policy attitudes can also be related to gender, age (Sivonen, 2020), assessment of one's financial situation (Sivonen and Kukkonen, 2021), political party preference (Drews and van den Bergh, 2016) and education (Bergquist *et al.*, 2022). To

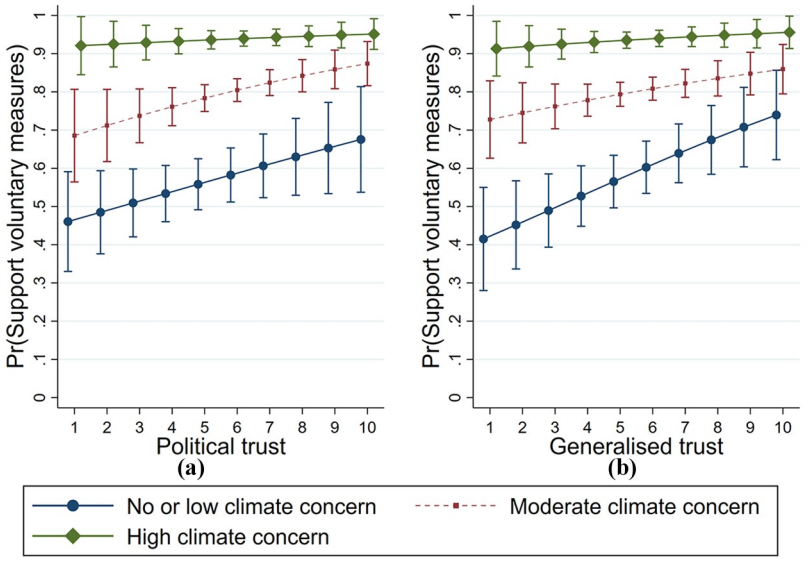

Figure 3. Support for voluntary climate policy measures by levels of trust and climate concern. (a) Predicted probabilities of support across levels of political trust, by level of climate concern. (b) Predicted probabilities of support across levels of generalised trust, by level of climate concern
Source: Created by authors

take into account these relationships, we included these factors as control variables in our analysis.

Gender was self-reported, and the response options were 1) Woman, 2) Man, 3) Other, and 4) I do not want to say. Due to the small number of responses in other categories, our analysis only included the first two gender categories. Self-reported assessment of one's financial situation was inquired about through the question, "How would you evaluate your economic situation at the moment?", with the response options 1) Very good, 2) Quite good, 3) Moderate, 4) Quite poor, and 5) Very poor. Due to the relatively low number of responses (49) in the category "Very Poor", the categories "Quite poor" and "Very poor" were combined to form the category "Poor".

Party preference was asked about as follows: "If parliamentary elections were held now in Finland, which party would you vote for?" Response options included the parties in parliament at the time of the survey:

- National Coalition Party;
- Social Democratic Party of Finland;
- Finns Party;
- Centre Party;
- Green League;
- Left Alliance;
- Swedish People's Party of Finland;
- Christian Democrats of Finland;

- Movement Now;
- Some other party; and
- I would not vote.

In the analysis, the smallest parliamentary parties, namely the Swedish People's Party of Finland, the Christian Democrats of Finland, and Movement Now were classified into the category "Other". To make the results section more readable, the categories "Other party" and "None" are included in the models but are not presented in the results.

In Finnish politics, the Left Alliance has a left-of-centre-left political orientation, the Social Democrats are a centre-left party, the Green League is a green-centre-left party, the Centre Party is a rural-centrist party, the National Coalition Party is a centre-right party, and the Finns Party can be characterised as a populist-right party (Tiihonen *et al.*, 2022).

Level of education was inquired about through the question, "What is your educational background? Select the highest level of education you have completed". The response options were 1) Comprehensive school, 2) Vocational school or intermediate vocational training, 3) High school qualification, 4) Lower university degree, 5) Higher university degree, and 6) Doctoral or licentiate degree. We classified the education responses into four categories:

(1) Primary (response 1 above);
(2) Secondary (responses 2 and 3 above);
(3) Bachelor's (response 4 above); and
(4) Higher (responses 5 and 6 above).

The respondents' ages were calculated using birth year information from the sample. Age varied from 20 to 96 (mean = 57.33, SD = 18.05). In our analysis, age was categorised into five groups: 20–34, 35–49, 50–64, 65–79 and 80 or more years old. Descriptive statistics on all variables can be seen in Table A1.

Since our dependent variable is ordinal, we employed the ordered probit regression method. Ordered probit regression estimates how predictors influence the likelihood of responses across ordered categories. While positive coefficients imply that increases in the predictor raise the probability of higher category responses on the scale, negative coefficients suggest that increases in the predictor are associated with a shift towards lower category responses (see Daykin and Moffatt, 2002). To identify both direct and controlled associations between explanatory and explained variables, we employ both simple ordered probit regression and multiple ordered probit regression. The cut points of the simple ordered probit regressions are included in the Supplementary Material (Tables A2–A17).

Interaction effects occur when independent variables jointly affect the dependent variable, and we used logistic regression (controlling for age, gender, self-assessed financial situation, party preference and level of education) to explore these relationships, as shown in Figures 2 and 3. To address age and gender biases, we applied weighted analysis using population data from Statistics Finland (2022). The analysis was conducted using Stata 17.

Figure 1 shows a schematic outline of the study design, presenting the sampling procedure, key variables and analytical strategy. The diagram shows the flow from data collection to statistical analysis, highlighting the dependent and independent variables, control factors and how these were applied in the methods.

4. Results and discussion

The purpose of this article was to explore the links between climate change concern, political and generalised trust, and support for coercive and voluntary climate policy measures.

Broadly, the study shows that trust modifies the relationship between climate change concern and attitudes towards different types of – or more precisely, coercive and voluntary – climate policies. Before turning to the multivariate analyses, we first present key descriptive findings.

Climate concern was at high level, with 84% expressing at least some concern about climate change. When it comes to support for climate policies, voluntary policies were substantially more popular than coercive ones: 81% of respondents at least somewhat agreed that the state should implement more voluntary measures, whereas 43% supported coercive measures. This reflects a familiar pattern where non-coercive policies are more supported by the public than mandatory measures that entail obligations or personal costs (Drews and van den Bergh, 2016). At the same time, these descriptive results highlight a central challenge for climate governance since voluntary measures alone are unlikely to suffice for reaching carbon neutrality or carbon negativity.

Tables 1 and 2 report the results of ordered probit regression models. In both tables, the simple models present associations between individual independent variables and the dependent variable. These are followed by full models that include all independent variables simultaneously. Table 1 focuses on support for coercive climate policy measures, while Table 2 presents results concerning support for voluntary climate policies. The tables test the associations proposed in *H1–H3*.

In response to *RQ1*, our findings indicate that greater concern about climate change is positively associated with more support for both coercive (Table 1) and voluntary (Table 2) climate policy measures, thereby supporting *H1a* and *H1b*. These findings aligns with earlier research suggesting that individuals concerned about climate change are more likely to endorse different kinds of mitigation policies (e.g. Kulin and Johansson Sevä, 2021; Smith and Mayer, 2018).

In addition, Tables 1 and 2 revealed that greater political trust was associated with stronger support for both coercive and voluntary policies (*RQ2*), supporting *H2a* and *H2b*. These findings reinforce the view that political trust is a key facilitator of public support for climate action, especially when it involves regulation or cost. Notably, our results expand on prior research (e.g. Fairbrother *et al.*, 2019; Levi, 2021) by showing that the influence of political trust is not limited to climate taxation but extends to broader coercive policies and voluntary policies as well.

Together, these results underline the importance of both climate concern and political trust as key factors in support for state-led climate measures. Conversely, regarding *RQ3*, generalised trust was positively associated with support for voluntary climate policy measures (*H3*) (Table 2), but showed a slight negative association with support for coercive measures when background variables were controlled for (Table 1). Since no hypothesis could be formulated about the direction of this relationship, the observed weak negative association provides an empirical insight into the ambivalent role of generalised trust. Tentatively it suggests that individuals with high interpersonal trust believe that others will act responsibly without state coercion, and thus view mandatory policies as less necessary. Given that both types of policies were framed as state-implemented, it is possible that support for them is influenced more directly by political trust than by generalised trust.

RQ4 concerned how political and generalised trust modify the association between climate concern and support for climate policy measures. Figures 2 and 3 present the relevant interaction effects. Each figure contains two panels, illustrating how the predicted probability of supporting either coercive (Figure 2) or voluntary (Figure 3) climate policies varies across levels of trust (political or generalised), and how this association differs depending on respondents' level of climate concern (low, moderate or high).

Table 1. Ordered probit regression on independent variables' connection with supporting coercive climate policy measures (in multiple probit regressio*n n* = 1704, pseudo R^2 = 0.1580).

	Simple ordered probit regression				Multiple ordered probit regression	
Variable	Coef. (SE)	*p* > *z*	Pseudo R^2	*N*	Coef. (SE)	*p* > *z*
Climate concern	0.656 (0.030)	0.000	0.105	2,059	0.520 (0.035)	0.000
Political trust	0.187 (0.016)	0.000	0.0356	2,007	0.129 (0.021)	0.000
Generalised trust	0.027 (0.015)	0.070	0.001	1,887	−0.045 (0.019)	0.016
Party preference (ref. National Coalition Party)			0.0635	1,991		
Social Democrats	0.234 (0.074)	0.016			0.284 (0.084)	0.001
Finns Party	−0.958 (0.123)	0.000			−0.389 (0.141)	0.006
Centre Party	−0.136 (0.086)	0.370			−0.093 (0.094)	0.324
Green League	1.040 (0.097)	0.000			0.759 (0.113)	0.000
Left Alliance	0.836 (0.123)	0.000			0.679 (0.136)	0.000
Education (ref. comprehensive school)			0.0214	1,998		
Secondary	−0.007 (0.075)	0.921			−0.040 (0.096)	0.678
Bachelor	0.249 (0.082)	0.002			−0.009 (0.110)	0.936
Higher	0.685 (0.081)	0.000			0.325 (0.113)	0.004
Assessment of financial situation (ref. poor)			0.0053	2,050		
Moderate	0.176 (0.099)	0.077			0.153 (0.112)	0.172
Quite good	0.350 (0.098)	0.000			0.259 (0.112)	0.021
Very good	0.482 (0.111)	0.000			0.383 (0.132)	0.004
Gender (ref. female)	−0.269 (0.052)	0.000	0.0051	2,021	−0.019 (0.059)	0.742
Age group (ref. 80+)			0.0062	2,072		
20–34	0.121 (0.096)	0.210			−0.021 (0.117)	0.859
35–49	0.170 (0.092)	0.064			−0.038 (0.112)	0.737
50–64	−0.207 (0.083)	0.012			−0.345 (0.103)	0.001
65–79	−0.087 (0.078)	0.262			−0.230 (0.097)	0.018
cut1					1.606 (0.221)	
cut2					2.296 (0.225)	
cut3					2.823 (0.228)	
cut4					3.858 (0.235)	

Note(s): Standard errors in parentheses

In Figure 2, panel (a) displays the interaction between political trust and climate concern in predicting support for coercive climate policies. The results indicate a clear moderation effect: political trust strengthens support for coercive measures across all levels of climate concern. Even individuals with low or no climate concern were more supportive of coercive measures when their political trust was high, underscoring the enabling role of trusted political institutions in fostering climate policy support, even among the less concerned. Panel (b), which shows the interaction between generalised trust and climate concern, tells a different story. Here, generalised trust does not appear to function as an enabling factor in the same way. Support for coercive measures remains relatively stable or even decreases slightly as generalised trust increases, particularly among those with moderate concern. Among those with low concern, generalised trust makes little difference. These findings suggest that political trust, rather than interpersonal trust, is a more relevant factor in enabling support for coercive climate policies.

Figure 3 focuses on support for voluntary climate policies. Panel (a) shows that political trust is positively associated with support for voluntary measures, and that this association is

Table 2. Ordered probit regression on independent variables' connection with supporting voluntary climate policy measures (in multiple regression $n = 1{,}722$, Pseudo $R^2 = 0.1106$).

	Simple ordered probit regression				Multiple ordered probit regression	
Variable	Coef. (SE)	$p > z$	Pseudo R^2	N	Coef. (SE)	$p > z$
Climate concern	0.545 (0.033)	0.000	0.0912	2,095	0.442 (0.038)	0.000
Political trust	0.138 (0.016)	0.000	0.0249	2,037	0.058 (0.021)	0.005
Generalised trust	0.072 (0.016)	0.000	0.0068	1,906	0.050 (0.019)	0.008
Party preference (ref. National coalition party)			0.0365	2,026		
Social Democrats	0.180 (0.074)	0.016			0.129 (0.089)	0.146
Finns Party	−0.554 (0.121)	0.000			−0.080 (0.135)	0.552
Centre Party	−0.085 (0.095)	0.370			−0.011 (0.107)	0.920
Green League	0.842 (0.105)	0.000			0.553 (0.121)	0.000
Left Alliance	0.489 (0.111)	0.000			0.122 (0.131)	0.353
Education (ref. comprehensive school)			0.0084	2,057		
Secondary	0.124 (0.075)	0.097			0.162 (0.093)	0.081
Bachelor	0.236 (0.083)	0.005			0.144 (0.111)	0.195
Higher	0.448 (0.082)	0.000			0.257 (0.114)	0.024
Assessment of financial situation (ref. poor)			0.0006	2,086		
Moderate	0.103 (0.105)	0.328			0.004 (0.124)	0.974
Quite good	0.143 (0.103)	0.165			−0.067 (0.125)	0.591
Very good	0.111 (0.122)	0.364			−0.159 (0.151)	0.292
Gender (ref. female)	−0.318 (0.052)	0.000	0.0084	2,057	−0.127 (0.060)	0.035
Age group (ref. 80+)			0.0028	2,109		
20–34	0.0980 (0.100)	0.327			0.050 (0.127)	0.691
35–49	0.0884 (0.098)	0.367			0.045 (0.122)	0.712
50–64	−0.116 (0.089)	0.191			−0.154 (0.109)	0.157
65–79	−0.075 (0.084)	0.367			−0.099 (0.101)	0.330
cut1					−0.037 (0.229)	
cut2					0.570 (0.233)	
cut3					1.230 (0.236)	
cut4					2.503 (0.244)	

Note(s): Standard errors in parentheses

particularly evident among individuals with low or moderate climate concern. However, for those with high concern, support for voluntary policies remains consistently high, regardless of their level of political trust. Panel (b), by contrast, reveals a stronger moderation effect of generalised trust. Among individuals with moderate or low concern, support for voluntary measures increases noticeably with generalised trust. This suggests that generalised trust helps translate even modest levels of concern into support for voluntary climate policies. Among those with high climate concern, support for voluntary policies is again consistently high and not influenced by trust levels. Overall, the results suggest that high support for voluntary climate policies can be achieved through either high climate concern or high generalised trust – and ideally both. This finding somewhat contradicts earlier research. For instance, a cross-country study by Sunstein *et al.* (2018) found no association between generalised trust and support for voluntary policies aimed at improving health, the environment, and safety. Moreover, our results are not consistent with Smith and Mayer (2018), who observed a positive link between generalised trust and willingness to pay for climate protection. These inconsistencies point to the need for further research to clarify the role of generalised trust in shaping support for climate policy. One possible explanation for

the discrepancy is that our study is situated in a high-trust society, where the dynamics of interpersonal and institutional trust may differ from those in lower-trust contexts. In contexts where political institutions are weak or corrupt, generalised trust may indeed play a more essential role in enabling collective action (Davidovic, 2023).

Furthermore, our analysis indicates that political trust substantially reduces the disparity in support for coercive climate policies between individuals with moderate and lower levels of climate concern. When it comes to support for voluntary policies, higher levels of both political and generalised trust bring groups with different climate concern levels closer to each other. Trust can thus be seen to bridge the gap in support for climate policy between different groups. Political trust can also help close the divide between citizens and experts: for instance, experts typically support measures like carbon tax more than non-experts, but political trust may help increase their popularity among citizens.

Generally speaking, trust, including trust in other people, plays a pivotal role in addressing collective action problems (Jagers *et al.*, 2020). Presumably, the effect of the associations between generalised trust and different types of climate policies is also related to the phrasing of the question; our question about (coercive) climate policies in the questionnaire referred to the concept of coerciveness, which is rarely mentioned when studying carbon tax attitudes, for example. Hence, our results contribute to the body of research in that they shed light on what people think about coercive and voluntary climate actions more generally, while most previous studies have focused on individual measures. This is an important addition to the research literature, as attitudes may vary substantially depending on the individual measure. Furthermore, our results add to the knowledge about what is required to better combat climate change, for example regarding mandatory policy measures. The importance of political trust is emphasised in this study. In other words, to ensure the successful implementation of climate policies, policymakers need to build and maintain trustworthy political institutions.

What about the direction of effects between political and generalised trust and support for a coercive and voluntary climate policies? Although we cannot address this with cross-sectional data, it may be presumed that climate concern tends to precede support for climate policy. Political trust functions as a modifying mechanism: concern translates into support when institutions are perceived as competent, fair and responsive (Davidovic, 2023). In the absence of trust, concern may result in other outcomes rather than policy support. Our assumption is that the mechanism is thus contingent – support is the outcome of concern filtered through trust.

While levels of trust can explain attitudes on climate measures to a certain extent, other factors may also explain why climate policies and their public support advance or stall. One such factor could be the perceived fairness of policies. For example, increasing the perceived fairness of and support for climate policies might be achieved by allocating tax revenues to implement further emissions cuts or redistributing them to vulnerable groups, such as those on low incomes (Carattini *et al.*, 2018). Moreover, improving the transparency of the management of carbon taxation and its revenues could enhance support for such policies (Povitkina *et al.*, 2021).

It is important to note that although voluntary policies are typically more popular than coercive policies among citizens, in the context of climate change mitigation voluntary policies are not expected to substitute more coercive policies, but supplement them (Thaler and Sunstein, 2021). How to increase support for effective climate policies remains an important question for researchers.

Can public administration enhance support for climate policies by promoting awareness of climate change and fostering political trust? Certainly, raising awareness about climate

change has a positive impact on policy support. However, given people's finite pools of attention (Sisco *et al.*, 2023), it is crucial to ensure ongoing discourse on the climate to sustain public interest. Enhancing political trust is a complex societal process that may, among other issues, involve tackling corruption and enhancing the quality of government more generally (Linde and Dahlberg, 2021), which in turn could indirectly benefit climate policy. Although this process can be slow, anti-corruption efforts also yield other positive outcomes. In addition, framing and reshaping policies plays a vital role in garnering support. For example, earmarking carbon tax revenue for specific purposes and effective communication methods – such as transparency – are essential for upholding political trust and gaining backing for carbon taxation (Carattini *et al.*, 2018).

While the generalisability of our findings beyond Finland and the Nordic region should be approached with caution due to the relatively high average levels of trust, our results nonetheless offer valuable insights for other contexts. Specifically, they highlight the pivotal role of political trust in enabling public support for climate policy. In countries where political trust is lower, the mechanisms we identified may function differently. Enhancing the trustworthiness of public institutions – whether by addressing corruption, ensuring transparent policymaking, promoting accountable governance or improving public service delivery – may be crucial not only for translating climate concern more effectively into climate policy support, but also for increasing the applicability of our findings to other contexts.

5. Conclusions

This study examined how concern about climate change, political trust and generalised trust are associated with support for coercive and voluntary climate policy measures. We found that both climate concern and political trust are positively associated with support for both types of policies. Generalised trust, in contrast, was positively associated with support for voluntary measures but showed a weak negative association with coercive ones.

Political trust was found to be a factor that strengthens the link between climate concern and policy support. Even among those with lower concern, high political trust was associated with greater support for coercive measures. Generalised trust played a similar role in relation to voluntary measures, particularly among individuals with lower levels of concern. These findings suggest that trust helps translate climate concern into policy support – but the type of trust matters, depending on the policy type.

The limitations of this study include the cross-sectional data: time-series data would offer more reliable information about the dynamic relationships between climate change concern, trust, and support for climate policy measures. A recent longitudinal analysis (Ahonen *et al.*, 2025) indicated that political trust modifies rather than causally effects economy-over-environment prioritisation. In the future, longitudinal data could be used to investigate whether this is also the case when it comes to supporting coercive and voluntary climate policies. Moreover, greater response activity would give more trustworthy results when it comes to generalising to all adults living in Finland, although low response activity is typical nowadays. Here, we attempted to tackle the attrition by weighting responses by age and gender.

One limitation concerns the interpretation of the survey items on coercive and voluntary climate policies. Although the items were designed to capture support for both types of policies, their wording explicitly framed them as actions taken by the state. For coercive policies, which are in practice typically state-led, this framing is unlikely to have influenced responses. For voluntary policies, however, which may also be promoted by non-state actors,

the emphasis on government action could have shaped how respondents understood the question.

As this study is based on cross-sectional data from a high-trust context, caution is warranted when generalising the findings to different societal settings. Future research should further explore these relationships and how they evolve over time and across different contexts, ideally with longitudinal data. To foster public support for climate policies, policymakers should invest in building trustworthy institutions and ensure that policies are seen as fair, transparent, and inclusive.

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Supplementary material

The supplementary material for this article can be found online.

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Appendix

Table A1. Descriptive statistics of variables

Variable	Min.	Max.	Mean	SD	*n*	%
Coercive climate measures	1	5	2.94	1.39	2,072	
1) Completely disagree					447	21.57
2) Fairly disagree					403	19.45
3) Neither disagree or agree					366	17.66
4) Fairly agree					535	25.82
5) Completely agree					321	15.49
Voluntary climate measures	1	5	4.10	0.97	2,109	
1) Completely disagree					63	2.99
2) Fairly disagree					90	4.27
3) Neither disagree or agree					251	11.9
4) Fairly agree					871	41.3
5) Completely agree					834	39.54
Climate concern	1	5	3.41	1.01	2,137	
1) Not at all concerned					81	3.79
2) Not very concerned					237	11.09
3) Somewhat concerned					879	41.13
4) Very Concerned					596	27.89
5) Highly concerned					344	16.10
Political trust	1	10	6.00	1.96	2,056	
Generalised trust	1	10	5.69	1.96	1,925	
Party preference	1	8			2,055	
1) National Coalition Party					453	22.04
2) Social Democrats					448	21.80
3) Finns Party					153	7.45
4) Centre Party					221	10.75
5) Green League					181	8.81
6) Left Alliance					151	7.35
7) Other					251	12.21
8) None					197	9.59
Education	1	4			2,060	
1) Primary					328	15.92
2) Secondary					811	39.37
3) Bachelor					457	22.18
4) Higher					464	22.52
Age groups	1	5			2,164	
1) 20–34					335	15.48
2) 35–49					377	17.42
3) 50–64					535	24.72
4) 65–79					724	33.46
5) 80+					193	8.92
Gender	0	1			2,086	
0) Female					1,075	51.53
1) Male					1,011	48.47
Assessment of financial situation	1	4			2,115	
1) Poor					194	9.17
2) Moderate					746	35.27
3) Quite good					885	41.84
4) Very good					290	13.71

Source(s): Created by authors