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RESEARCH ARTICLE

Public support for decarbonization policies in the UK: exploring regional variations and policy instruments

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ABSTRACT

Decarbonization policies require public support to be implemented and to remain in legislation. Examinations of public support for climate policies tend to focus on a small number of policy instruments and/or use hypothetical instead of real policy proposals. Here, we address these criticisms by examining public support across four distinct policy instruments – command-and-control, market-based, information-based, and voluntary – using sixteen policy proposals by UK political parties and government institutions. In addition to assessing UK national policy support, we also explore regional differences. Using a representative sample of the UK population (N = 1,911), we find that, at a national level, individuals preferred instruments shown to be less effective in reaching net-zero: information-based and voluntary policies. Our results indicate that the extent to which individuals believe in the free market, their environmental worldviews and political party support as well as their age are all correlated with policy support. We find stark regional differences where, compared to individuals living in Greater London, those living in the remainder of the country were 32% and 30% less likely to support command-and-control and market-based policies, respectively (among other regional differences). Regional variations in free-market beliefs and population density partly explain differences in policy support. We propose policymakers focus on place-based initiatives to increase support for decarbonization policies that are more effective in reaching net-zero and on improving the perception of market-based and command-and-control policies through positive framing and policy bundles.

Key policy insights:

- The majority of the UK public supports *all* climate policy instruments (command-and-control, market-based, information-based, and voluntary) regardless of their stringency.
- More stringent decarbonization policies (command-and-control and market-based instruments) received less public support compared to more lenient policies (information-based and voluntary).
- Population density as a structural factor helps to explain regional variation and points to the crucial role of improving public infrastructure, particularly in more rural areas.
- Free-market beliefs are associated with regional and individual variations in support and stress the need for overcoming ideological barriers.
- Income was found to influence support for less stringent (e.g. information-based) instruments, but was not associated with support for regulatory and market-based instruments.

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1. Introduction

Historically, the United Kingdom (UK) has been one of the most greenhouse gas (GHG)-emitting countries and still is among Europe's highest emitters (Ritchie et al., 2023). Politicians in the UK, as in many countries around the world, have proposed various decarbonization policies to limit GHG emissions in attempts to adhere to net-zero pledges (Höhne et al., 2021). Evaluating the effectiveness of different policy instruments to guide politicians on what policies to implement has thus become crucial (Sterner et al., 2019). Yet, even the most effective policies are challenging to implement in practice if they lack public support (Nature Sustainability, 2021). It is therefore imperative to examine public support for different types of decarbonization policy instruments. We do so here, with a focus on the UK.

Although labels can vary, we can broadly distinguish between four policy instruments (Wurzel et al., 2013). Command-and-control policies – sometimes also called regulatory instruments – directly prescribe a behaviour by restricting or prohibiting particular actions. These restrictions are enforced through penalties in case actors fail to adhere to them. Command-and-control instruments include, for example, emission standards for vehicles or buildings, the ban of cars with combustion engines or the complete phase-out of coal for electricity production.

While command-and-control policies directly restrict the options of an agent, market-based instruments promote (or impede) a behaviour through economic (dis)incentives (Stavins, 2003). Subsidies for fully electric vehicles are an example of a market policy that aims to encourage behaviour whereas increased taxes on cars with a combustion engine is an example of a disincentive. Another prominent example is carbon trading. Agents have to pay to pollute but are free to trade their emission permits with other agents through a market exchange (Meckling, 2011).

Information-based instruments rely neither on explicit rules that change behaviour directly nor on (dis)incentives to make some options more appealing than others. Instead, they aim to stimulate behaviour change by mandating the provision of information (Ferraro & Miranda, 2013). Examples of this instrument are 'traffic light' label systems on products, energy efficiency labels or disclosure requirements.

Lastly, voluntary instruments *suggest* non-binding behavioural guidelines but ultimately leave it to agents to behave more sustainably. They do not encourage behaviour change through stringent regulation, market (dis)-incentives or force agents to provide information. Instead, this type of policy is entirely voluntary to signal a standard or action that is likely to be desired. Voluntary carbon offsets, provided by many companies today, are among the most prominent examples of voluntary policy instruments. Other examples are ISO standards or company-level net-zero pledges.

Command-and-control policies, therefore, involve the highest degree of government intervention followed by, in a de-escalating order, market-based, information-based, and voluntary policy instruments (Bretter & Schulz, 2023).

The effectiveness of each policy instrument in reducing carbon emissions is debated (Nature Sustainability, 2021). Less contested is the insufficiency of voluntary instruments to effectively reduce emissions (Cames et al., 2016; Gillenwater et al., 2007; Martin & Saikawa, 2017; Potoski & Prakash, 2013; Rehan & Nehdi, 2005). Similarly, while information-based policies are necessary to have a better-informed public, they are seen as insufficient to 'encourage environmentally friendly consumerism' (Grolleau et al., 2016, p. 799). More effective in changing behaviour, according to Grolleau et al. (2016), are 'government rules and regulations' (p. 799).

The relative effectiveness of market-based over command-and-control policies and vice versa is more contested (Buller, 2022). Proponents of market-based instruments highlight superior cost-efficiency in reducing emissions as one of the main advantages over more stringent command-and-control instruments (Baranzini et al., 2017; Wills et al., 2022). However, ex-post analyses have shown that these policies have fallen short of their theoretical potential (Zabala, 2021) and did not 'produce deep emission reductions' (Tvinnereim & Mehling, 2018, p. 185) that are necessary to align with the 1.5°C target of the Paris Agreement (Cullenward & Victor, 2020; Haites, 2018; Green, 2021). Instead, 'the real work of emission control is done through regulatory instruments' (Cullenward & Victor, 2020, p. 10) as evidenced by Buller (2022) and Jaccard (2020). In short, both market-based and regulatory instruments have the potential to effectively reduce emissions. Yet, hitherto it is mostly regulatory policies that have achieved significant emission reductions.

Knowing which instruments are more or less effective in reducing carbon emissions is, however, not enough. From a political perspective, it is challenging to implement policies when public support is lacking, irrespective of their effectiveness (Burstein, 2003; Nature Sustainability, 2021). If the policy instruments that are most effective in reducing emissions – command-and-control and market-based – do not receive sufficient public support, it is crucial to point to pathways that enhance public support for those instruments.

Although there are numerous investigations into public support for different policy instruments (for reviews, see for example Drews, 2021; Drews & van den Bergh, 2016), they mostly focus on market-based (see for example Brannlund & Persson, 2012; Maestre-Andrés et al., 2019; Savin et al., 2020) at the expense of other instruments, particularly command-and-control policies (Kallbekken, 2023) or consider different policy types in bundles (Bergquist et al., 2020). One rare study that included all instruments finds Canadians prefer voluntary and command-and-control over market-based policies (Rhodes et al., 2017). A possible explanation is the perceived costs associated with taxes in comparison with regulation where costs are less visible (Bergquist et al., 2020; Drews, 2021; Young et al., 2022). On the other hand, people tend to have a preference for less coercive compared to more coercive policies (Tobler et al., 2012). This would imply more support for market-based compared to command-and-control policies.

Moreover, as pointed out by Kyselá et al. (2019) and Kallbekken (2023), when studies did differentiate between different policy instruments, including command-and-control (Bergquist et al., 2022; Rhodes et al., 2017), they often used hypothetical climate policies to gauge public support instead of examining public support of policies actually proposed by the respective government (Harring et al., 2019; Rhodes et al., 2017). As pointed out by Kallbekken (2023, p. 106), 'It is vital […] to study more realistic policy options in greater detail (as opposed to ideal or stylized policy instruments)'.

Besides assessing policy support at a UK national level, we also need to better understand regional differences. First, the UK has a parliamentary system where individuals vote for a candidate in their constituency that will represent them at the local or national level. Thus, although climate policy is predominantly decided at the national level, most policymakers, i.e. members of parliament, are elected at the constituency level (UK Parliament, 2023). Aiming for re-election, politicians tend to focus more on the interests of their constituents than general national polls (Raymond, 2017).

Second, the UK is one of Europe's most regionally divided countries in terms of economic outcomes (Rosés & Wolf, 2021) with some of the starkest differences between London and the rest of the UK (McCann, 2016). Individuals across regions will thus be affected differently by decarbonization policies due to their varying socioeconomic conditions.

Third, recent findings from the British Social Attitudes Survey highlight pronounced differences between London and other regions in terms of political values with Londoners showing stronger support for the (left-leaning) Labour Party's plan to increase climate policy funding (Butt et al., 2022).

Fourth, regions may have different susceptibilities to particular policy proposals due to their industrial set-up, infrastructure quality and geographical location. For instance, banning cars with a combustion engine might particularly hit regions with a strong automotive sector, those with industry that supplies car manufacturers, and less affluent areas where people cannot afford to buy a new electric car. Similarly, a higher tax on cars with a combustion engine would affect rural regions with a lack of public transport infrastructure where people are dependent on cars rather than, for instance, those living in Greater London. Consequently, support for decarbonization policies might vary across UK regions, which may be reflected in regional differences in support for distinct policy instruments.

It is important to state that, while there are different drivers for public support of policies such as fairness (Jagers et al., 2019), institutional trust (Harring & Jagers, 2013; Larsson et al., 2020; Rhodes et al., 2017), culture (Harring et al., 2019), worldviews (Drews & van den Bergh, 2016) or policy attributes (Coleman et al., 2023), our primary objective is not to contribute to these discussions. Instead, we assess public support across a range of policy instruments and UK regions. Where we find significant differences, we test the effect of a handful of well-established predictors – free-market beliefs, climate change knowledge, environmental (often called 'biospheric') worldviews, political orientation and income– in an effort to partly explain these differences.

Our study, therefore, has three contributions for policymakers and scholars alike. First, it examines UK public support for four distinct decarbonization policy instruments, thereby gauging their practical feasibility. Second, we extend previous scholarly efforts by assessing UK public support for a more comprehensive set of decarbonization policy instruments (command-and-control, market-based, information-based, and voluntary) using *actual* policy proposals put forward by UK political parties and government institutions, thereby providing policymakers with valuable information on the current state of public support for different instruments. Given that the specific policies proposed for each policy instrument are often similar across countries (e.g. the ban of selling fossil-fuelled cars or a carbon tax), the insights of our study may also be applicable for jurisdictions other than the UK. Third, our study demonstrates that regional differences in public support of command-and-control and market-based policy instruments exist in the UK, thereby opening up the research agenda to include place-based interventions and the need for regional and local decarbonization strategies to increase public support for such policies.

2. Methods

2.1. Ethics statement

We obtained approval for our study from the University Research Ethics Committee and adhered to the ethical standards.

2.2. Data sample

We collected a nationally representative sample of the UK population (N = 1,991) via Qualtrics and the panel provider Prolific. The sample was representative in terms of age, gender, and ethnicity, which was achieved via Prolific's filters of UK representativeness. The fieldwork was conducted in January 2023. In line with Prolific's guidelines, each participant was paid an equivalent of £8.20 per hour as compensation for their time conducting the survey.

2.3. Measures

The survey included a range of measures such as demographic information, various beliefs, and policy support (see Appendix A for the exact items and scales). We measured participants' support for four distinct decarbonization policy instruments: Command-and control, market-based, information-based, and voluntary. All participants evaluated the extent to which they support each of the resulting sixteen policies on a 6-point Likert scale from (1) 'Strongly disagree' to (6) 'Strongly agree' (i.e. within-participant design). Participants were not given the option to select alternative answers such as 'Don't know'. All policies and sources can be found in Appendix A and more information on differences in the policies' ambition can be found in the Supplemental Materials.

We measured the region where participants lived at the time the survey was conducted (January 2023). Participants had to select one of the 12 UK regions (ITL-1; see Figure 1 below).

To conduct additional analyses, we measured several beliefs and values that have been shown to be important predictors of environmental actions and attitudes (Bretter et al., 2022, 2023; Clayton et al., 2015; Steg & Vlek, 2009). We measured participants' free-market beliefs following the 6-item scale (e.g. 'The preservation of the free-market system is more important than localised environmental concerns' measured on a 6-point Likert scale from 1 = 'Strongly disagree' to 6 = 'Strongly agree') developed by Heath and Gifford (2006) which showed acceptable reliability (α = .76). We also measured the extent to which participants value the environment (i.e. environmental worldviews) using the scale by De Groot and Steg (2007). Participants were asked to rate how important these four items (e.g. 'Protecting the environment: Preserving nature') were to their self-concept using a 7-point Likert scale (1 = 'Not important to you' to 7 = 'Very important to you'). This scale showed excellent reliability (α = .93). We also measured participants' political orientation, that is, the party they are likely to vote for in the next election, giving them a choice of eleven parties (e.g. Labour, Conservatives, Greens etc.). The option 'other' was not available. Finally, we measured participants' self-reported climate change knowledge using a 3-item scale (e.g. 'The different causes of climate change') developed by Vainio

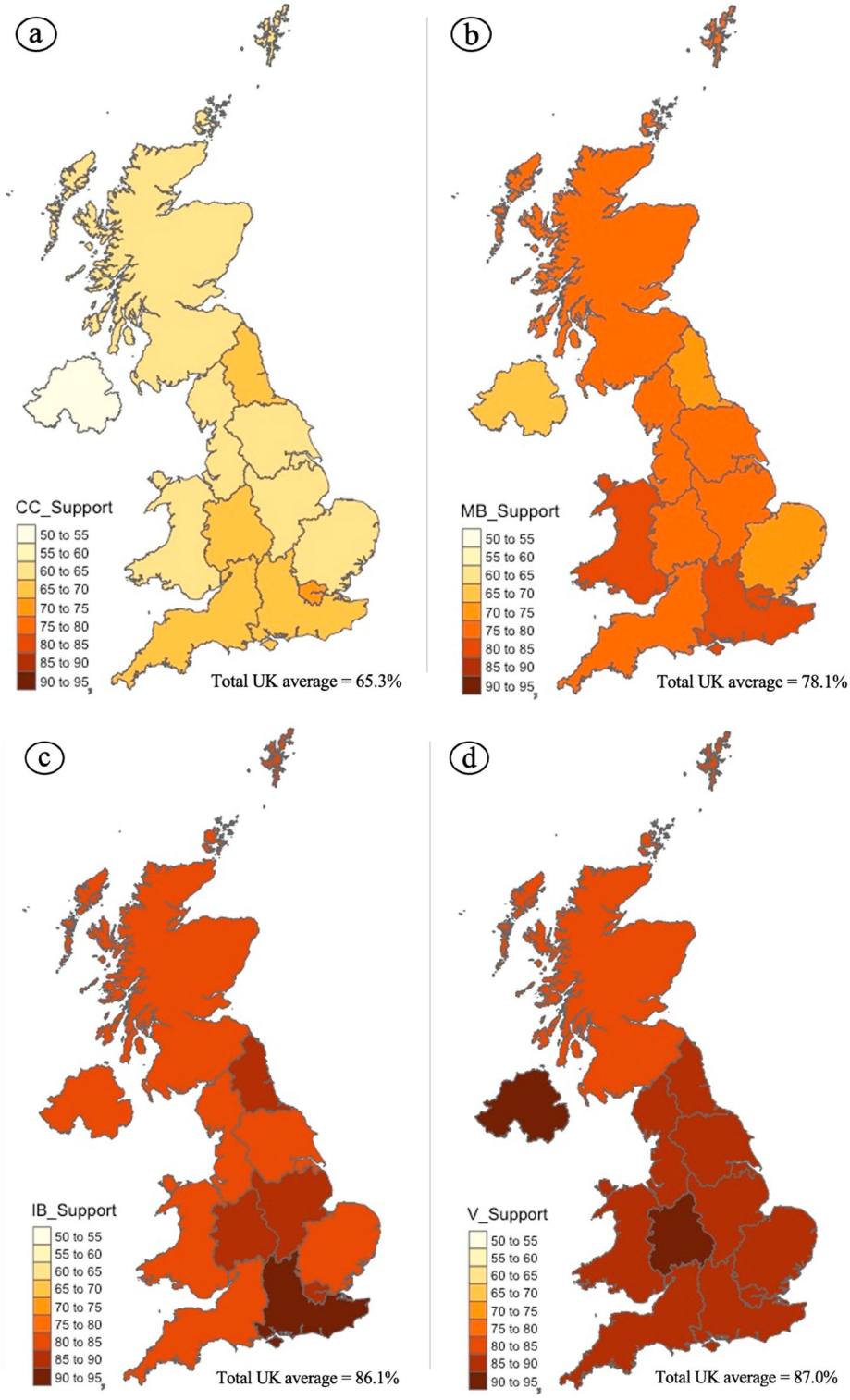

Figure 1. Percentage of people for the UK average and per UK region who support each of the four policy-instrument composite measures. CC = Command-and-control (panel a); MB = Market-based (panel b); IB = Information-based (panel c); V = Voluntary (panel d). Each individual was asked to rate each policy instrument (i.e. within-participant design, N = 1,911). The data can be found in Appendix B.

and Paloniemi (2013). Participants were asked to evaluate their knowledge of these items using a 4-point Likert scale (1 = 'Not at all informed' to 4 = 'Well-informed'). The scale showed acceptable reliability (α = .88).

2.4. Data preparation

We excluded participants who failed at least one attention check (see Supplemental Materials; n = 80). Our final sample thus comprised N = 1,911 individuals (Age: *M* = 45.88 years, *SD* = 15.67 years; gender: *female* = 983 individuals, *male* = 918 individuals, *none of the above* = 10 individuals; ethnicity: *white* = 1,674 individuals, *black* = 60 individuals, *asian* = 131 individuals, *other* = 46 individuals).

2.5. Data analysis

The code to conduct the below analyses can be found in the Supplemental materials. We first conducted a Confirmatory Factor Analysis (CFA) to test whether our policy instrument composite measures form reliable scales with sufficient discriminant validity (based on the threshold of Average Variance Extracted (AVE) ≥ .50, see Fornell and Larcker (1981)).

To perform our main analysis, we categorized our participants into supporters and non-supporters for each policy instrument. Those who scored > 3.5 on a composite measure were classified as supporters and those who scored ≤ 3.5 were classified as non-supporters for that policy instrument. To map support across UK regions, we calculated the number of supporters per region (and nationally) as a percentage of individuals in that region (in our sample).

Finally, we conducted binomial logistic regressions per policy instrument, using the policy instrument composite measures as the dependent variable and the regional variable as the independent variable. We then obtained and plotted the odds ratios and their 95% confidence intervals for each policy instrument and region (see Figure 2 below; for exact numbers, see Appendix C).

3. Results

3.1. Model fit

Table 2 shows the results of the confirmatory factor analysis (CFA). Our model demonstrated acceptable fit indices ($\chi^2 = 1480.86$; df = 98; $p < .001$; RMSEA = .086; SRMR = .051; CFI = .93; TLI = .91). Importantly, each of our four policy instrument composite measures showed sufficient reliability (α ≥ .77) and average variance extracted (AVE ≥ .50), thus meeting the threshold set by Fornell and Larcker (1981). In the Supplemental Materials, we demonstrate that our model outperforms alternative models.

3.2. National analyses

We analyzed UK policy support on a national level. Table 1 shows the actual means and standard deviations. Here, we found that command-and-control policies received the lowest support from the UK public, followed by market-based and, jointly, information-based and voluntary policies. Figure 1 maps policy support across policy instruments in the UK using our binary support measure. The data underlying Figure 1 can be found in Appendix B. Overall, using McNemar tests, we found that fewer individuals supported command-and-control policies (= 65%), compared to market-based (= 78%, $p < .001$), information-based (= 86%, $p < .001$), and voluntary policy instruments (= 87%, $p < .001$). Moreover, fewer individuals supported market-based policy instruments, compared to both information-based ($p < .001$) and voluntary policy instruments ($p < .001$). A difference between information-based and voluntary policies was not observed ($p = .247$).

3.3. Regional analysis

We then examined regional policy support in the UK (see Figure 1). We found regional differences in public support for command-and-control and market-based (see Figure 1 panel 'a' and panel 'b'), but not for information-based and voluntary policy instruments (see Figure 1 panel 'c' and panel 'd'). In Greater London,

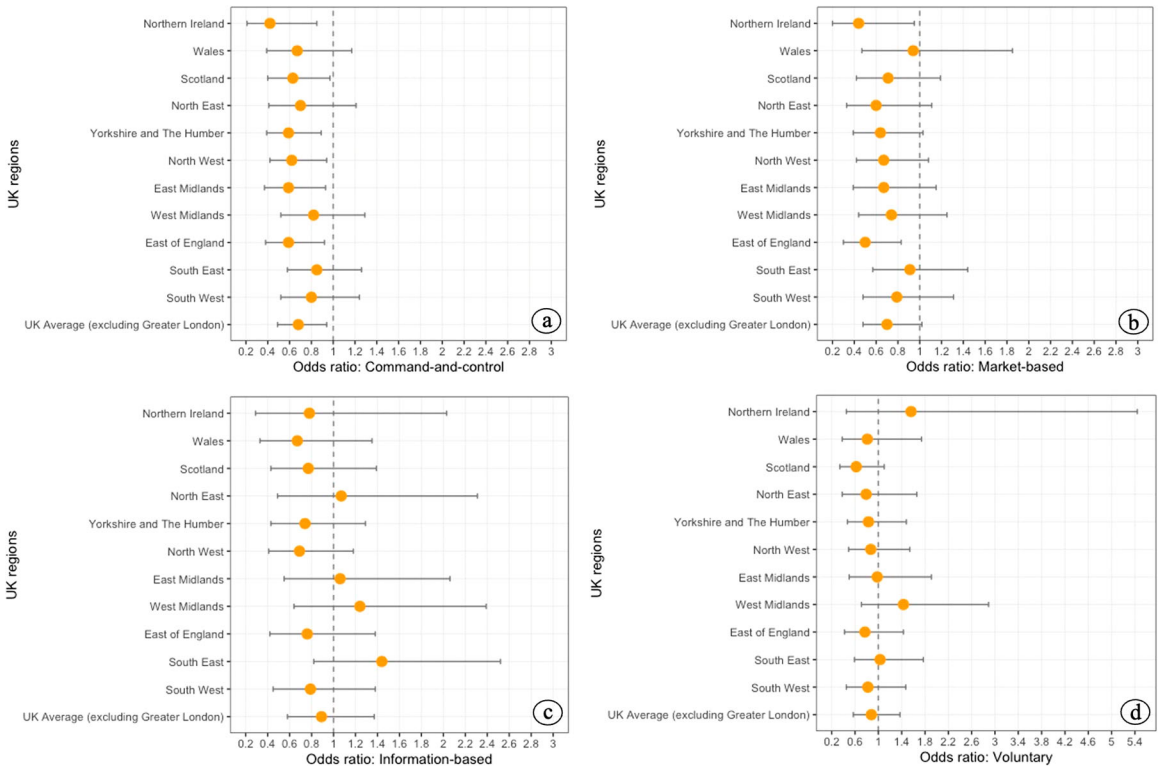

Figure 2. Odds ratios with 95% confidence intervals per policy instrument for different UK regions and the UK average in comparison to Greater London. The data can be found in Appendix C.

73% of individuals supported command-and-control policies whereas in the rest of the UK, only 64% did so. On a regional level, 61% of individuals supported command-and-control policies in East of England, East Midlands andYorkshire and The Humber, and 62% in Scotland. The corresponding odd ratios are presented in panel 'a' in Figure 2 (the data supporting Figure 2 can be found in Appendix C). Compared to individuals living in Greater London, people living in some of England's other regions (e.g. East of England, East Midlands, Yorkshire and The Humber, and the North West) were 38-41% less likely (1- odd ratio) to support command-and-control policies. Moreover, people living in Scotland and in Northern Ireland were, respectively, 37% and 58% less likely to support command-and-control policies, compared to people living in Greater London. Overall, compared to Greater London, individuals in the rest of the UK were 32% less likely to support command-and-control policies.

For market-based policy instruments, our results suggest a similar pattern (see panel 'b' in Figure 2 and panel 'b' in Figure 1). While 83% of individuals living in Greater London supported market-based policies, 71%, 77%, 76%, and 68% of individuals in the East of England, North West, Yorkshire and The Humber, and Northern Ireland supported such policies, respectively. In terms of likelihood, individuals living in the East of England, in the North West, and in Yorkshire and The Humber were, respectively, 50%, 33%, and 36% less likely to support market-based policy instruments, compared to individuals living in Greater London. Moreover, individuals living in Northern Ireland were 56% less likely to support such policies, compared to individuals living in Greater London. Overall, individuals in the rest of the UK, compared to those living in Greater London, were 30% less likely to support market-based policies.

3.4. Post-hoc analysis

We have demonstrated that public support for decarbonization policies varies by policy instrument and, for command-and-control and market-based policies, by UK region. However, it is important to reflect that

Table 1. Means and standard deviations of UK policy support per policy instrument.

Policy instrument	Mean	SD
Command-and-Control	3.99[a]	1.15
Market-based	4.29[b]	1.00
Information-based	4.56[c]	0.97
Voluntary	4.53[c]	0.93

Note. Different letters in superscript indicate significant differences in mean policy support after Bonferroni adjustment (all differences are at the $p < .001$ level).

Table 2. Results of the CFA.

Latent Factor	Indicator	SE	β	δ	α	AVE
Policy support: Command-and-control	The government should require car manufacturers to only produce vehicles that emit zero emissions during use.		.79	.37***	.87	.63
	The government should require companies to reject any business transactions that conflict with climate principles set by the government.	.03	.80***	.36***		
	The government should set new binding product standards for vehicles and appliances in line with best sustainability practices.	.02	.83***	.32***		
	The government should ban all forms of fossil fuel extraction.	.03	.77***	.41***		
Policy support: Market-based	The government should introduce a carbon tax on all fossil fuel imports based on their greenhouse gas emissions.		.83	.31***	.77	.50
	The government should provide financial support for research and development into carbon capture & storage and other carbon removal technologies.	.02	.62***	.63***		
	The government should develop a carbon market: Companies have to buy carbon emission permits, which they can trade in a carbon market with other companies.	.02	.61***	.62***		
	The government should stop all subsidies currently paid to fossil fuel-related activities.	.02	.70***	.51***		
Policy support: Information-based	The government should introduce a public information campaign to raise awareness for the carbon dioxide costs and impacts of companies' activities.		.80	.36***	.86	.61
	The government should expand existing labelling for consumer products to include assessment of embodied emissions.	.03	.79***	.37***		
	The government should require companies to use labels that inform consumers of durability, repairability, and recyclability of products.	.02	.68***	.54***		
	The government should introduce a green taxonomy that defines which economic activities tackle climate change and environmental degradation to help better guide investors and consumers.	.03	.83***	.31***		
Policy support: Voluntary	The government should provide non-binding advice to companies as to how to reduce their emissions.		.68	.54***	.84	.56
	The government should launch a voluntary carbon-offset standard (e.g. voluntary rules for the planting of trees to offset emissions).	.04	.70***	.51***		
	The government should introduce non-binding 'greener' product standards for vehicles and appliances.	.04	.78***	.40***		
	The government should support businesses to make greener choices through the formation of a voluntary buyers' alliance (e.g. voluntary 'green' purchases along the supply chain).	.04	.83***	.31***		

Note. $\chi^2 = 1480.86$; df = 98; $p < .001$; RMSEA = .086; SRMR = .051; CFI = .93; TLI = .91; N = 1,911; ***$p < .001$. N = 1,911.

although regional differences exist, these are unlikely to be caused by regions per se but rather by the regions' underlying characteristics. In other words, factors may exist at both individual and regional levels that explain the regional variations we found in policy support.

3.4.1. Individual-level policy support

At the individual level, our survey captured various constructs that may affect the extent to which individuals support the different policy instruments. Beyond basic demographics such as income, these include free-market beliefs, environmental worldviews, climate change knowledge, and political orientation. Free-market beliefs refer to the extent to which individuals support a free-market even though it may have destructive

consequences for the environment. Environmental worldviews, termed by De Groot and Steg (2007), reflect the subjective importance of the environment (or biosphere) to oneself (i.e. how important is the environment to an individual).

We have conducted linear regressions for each composite policy instrument using basic demographics (e.g. age, gender, income, and education) as well as free-market beliefs, environmental worldviews, climate change knowledge, and political orientation as the independent variables and policy support as the dependent variable. To facilitate the interpretation of our results, we grouped the Irish parties into a single category and collapsed the Labour and Co-operative parties (both left-leaning) into another. The results are presented in Table 3 and show that free-market beliefs consistently have a strong negative effect on policy support across policy instruments. Environmental worldviews, in contrast, are strongly and positively associated with policy support across instruments. In other words, the more individuals believe in a free-market society and the smaller the importance they place on the environment, the weaker their policy support regardless of the policy instrument.

It is also interesting to note that individuals who support the Labour and Co-operative parties, compared to those who support the Conservative party (more right-leaning), express higher levels of support for all policy instruments. Moreover, supporters of the Green party and the Scottish National party, compared to adherents of the Conservatives, also express higher levels of policy support, but only for command-and-control and market-based policy instruments. Age is negatively associated with levels of policy support, suggesting that younger individuals show stronger support across policy instruments. Moreover, our results show that self-reported knowledge about climate change and its effects is not related to the extent to which individuals support any policy instrument. Finally, we found no effects of income on support for command-and-control, market-based, and voluntary policies. However, our analysis showed a small positive association for information-based instruments, suggesting that those with higher incomes tend to express stronger support for those policies.

Table 3. Results of the linear regression models per policy instrument using policy support as the dependent variable.

	Dependent variable: Policy support			
Independent variable	Command-and-control	Market-based	Information-based	Voluntary
Climate change knowledge	−.03 (.04)	−.02 (.03)	−.01 (.03)	−.02 (.03)
Free-market beliefs	−.39*** (.03)	−.42*** (.02)	−.40*** (.02)	−.27*** (.03)
Environmental worldviews	.35*** (.01)	.31*** (.01)	.35*** (.01)	.32*** (.01)
Income	.01 (.01)	.02 (.01)	.05** (.01)	.03 (.01)
Age	−.13*** (.01)	−.17*** (.01)	−.14*** (.01)	−.18*** (.01)
Political Orientation				
Conservative party (ref)				
Irish parties	−.01 (.11)	−.01 (.10)	−.01 (.10)	−.01 (.11)
Labour and Co-operative party	.14*** (.01)	.12*** (.05)	.09*** (.05)	.06* (.05)
Green party	.10*** (.07)	.06** (.07)	.04 (.07)	−.01 (.07)
Liberal Democrats	.03 (.07)	.04* (.06)	.02 (.06)	.04 (.07)
Plaid Cymru	.02 (.29)	.01 (.25)	−.01 (.25)	−.02 (.27)
Scottish national party	.05**(.11)	.04* (.09)	.02 (.09)	.01 (.10)
Education				
A-Levels (ref)				
Doctoral degree	.01 (.13)	.02 (.11)	.01 (.11)	−.01 (.12)
Postgraduate degree	−.01 (.07)	.04 (.06)	.01 (.06)	.01 (.07)
Undergraduate degree	.01 (.06)	.04 (.05)	.01 (.05)	.01 (.05)
GCSE	.03 (.08)	.02 (.07)	−.01 (.07)	.04 (.07)
Vocational Education	−.01 (.08)	−.01 (.07)	.01 (.07)	.03 (.07)
Gender				
Male (ref)				
Female	.10*** (.04)	.02 (.04)	.05** (.04)	.06** (.04)
Other	.01 (.27)	−.01 (.24)	−.01 (.24)	.01 (.26)
F	88.13	84.87	77.85	37.57
Adjusted R^2	.45	.44	.42	.26

Note. Numbers represent standardized regression coefficients (β). Numbers in parentheses represent standard errors (SE). Ref = reference group for factors. ***$p < .001$, **$p < .01$, *$p < .05$, N = 1,911

3.4.2. Further regional analyses

In the previous section, we have shown that, at the individual level, free-market beliefs are key to estimating policy support across policy instruments. It is thus worth further exploring the extent to which regional variations in free-market beliefs may explain the regional variations in policy support we found for command-and-control and market-based policy instruments. We, therefore, calculated aggregate free-market beliefs, mapped these per UK region, and analyzed regional differences. The map is illustrated in Figure 3.

A visual examination of Figure 3 shows that the pattern of regional variation of free-market beliefs seems to assimilate regional variations of policy support for command-and-control and, to a lesser extent, market-based policy instruments. We can see that those regions that show weaker levels of policy support compared to Greater London (e.g. East Midlands, North West, Yorkshire and The Humber, East of England, and Northern Ireland) also show stronger free-market beliefs. Indeed, a one-way Analysis of Variance (ANOVA) demonstrated

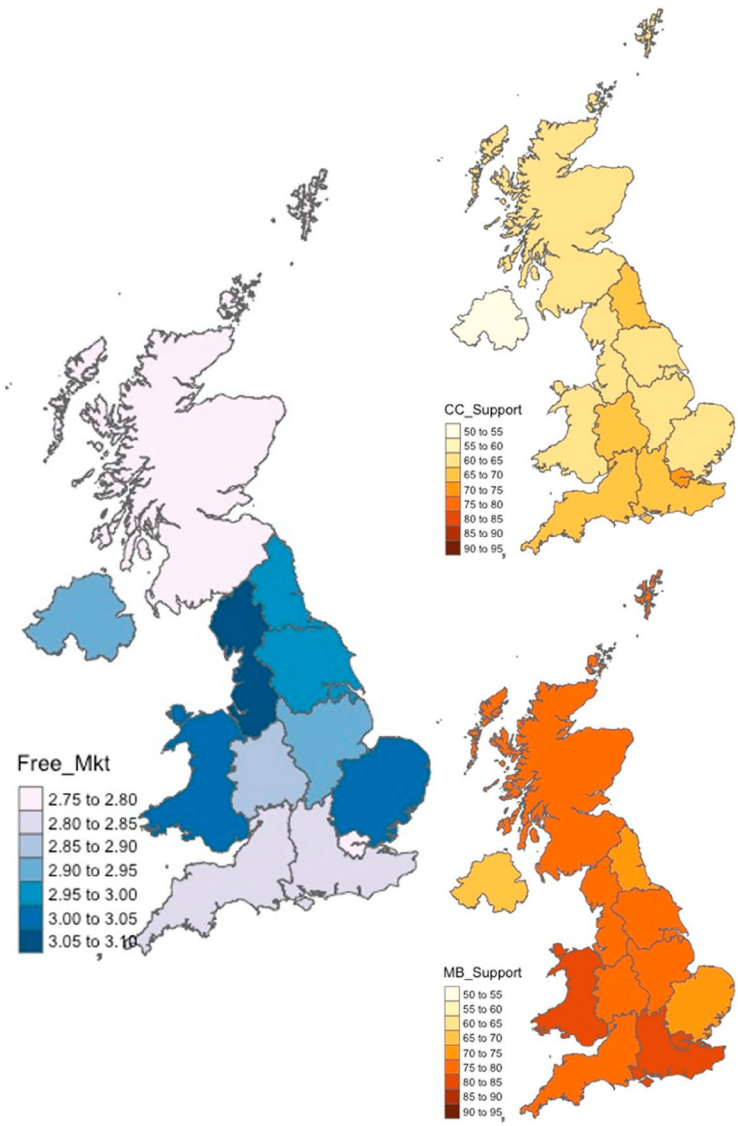

Figure 3. Aggregate free-market beliefs per UK region (left) and regional support for command-and-conotrol (top right) and market-based (bottom right) policy instruments. The data underlying this Figure can be found in the Supplemental Materials.

a main effect of regions on free-market beliefs ($F(11, 1899) = 3.05$, $p < .001$, $\eta^2 = .02$) where individuals living in the East Midlands, the North West, Yorkshire and The Humber, and the East of England, tend to believe more strongly in the free-market system than individuals living in Greater London (see Table 3 in the Supplemental Materials for more details). Importantly, another ANOVA showed that individuals in Greater London believe less in the free-market, compared to the rest of the UK ($F(1, 1909) = 8.22$, $p = .004$, $\eta^2 = .01$), thus mirroring our findings for the regional variations for command-and-control and market-based policy support. These results remain even after adding environmental worldviews, age, and political orientation as additional covariates into the model (see Supplemental Materials) and demonstrate that regional variations in free-market beliefs partly explain regional variations in policy support.

Given that support for policies is inherently politicized, we also examined whether the regional electoral success of a political party overlaps with the regional differences we found for command-and-control and market-based policies. Note that the regional electoral success of a party is different from the individual-level political orientation examined above. We used data from the UK parliament to map which political party is the most dominant in each of the twelve UK regions. The data underlying the analyses, the results, and the maps are presented in the Supplemental Materials (see Table 5 and Figure 2). We found no overlap between the electoral success of either Labour or Conservatives on aggregate policy support for command-and-control and market-based policies so the electoral success of either party is unlikely to explain our regional variations in policy support.

Finally, we examined the existence of an overlap between regional per capita GHG emissions measured in tons of carbon dioxide equivalent (tCO_2e) and regional differences in policy support for command-and-control and market-based policies. We used data supplied by the UK Parliament (see Table 6 in the Supplemental Materials) and mapped the aggregate GHG emissions per UK region (see Figure 4). Several findings emerged from a visual examination. The UK region that shows more support for decarbonization policies compared to many other regions – Greater London – has the smallest per capita GHG emissions (3.4 tCO_2e). As a result, most regions that significantly differ from London in command-and-control (and partly market-based) policy support also show higher per capita GHG emissions, such as Yorkshire and The Humber (7.1 tCO_2e), North West (5.9 tCO_2e), East Midlands (6.9 tCO_2e), East of England (6.0 tCO_2e), and Scotland (7.4 tCO_2e). Crucially, compared to the aforementioned regions, those UK regions that do not significantly differ from Greater London in policy support (particularly for command-and-control policies), also show smaller per capita GHG emissions, such as South West (5.6 tCO_2e), South East (4.7 tCO_2e), and West Midlands (5.7 tCO_2e). Therefore, our findings show a tendency where those regions that show significantly less support particularly for command-and-control policies, compared to Greater London, also show higher per capita GHG emissions.

However, these findings might conceal the fact that areas with higher per capita GHG emissions tend to be more rural areas where individuals rely more on higher-emitting transport modes such as cars in their daily lives compared to more urban areas where the public transport infrastructure is more accessible. To explore this, we mapped population density per UK (see Supplemental Materials for data) and compared this with the per capita GHG emissions. Indeed, as can be seen in Figure 5, those areas that show the highest per capita GHG emissions such as Scotland (7.4 tCO_2e), Wales (9.4 tCO_2e), and Northern Ireland (10.6 tCO_2e) show the lowest population density (70, 150, and 140 people per km^2, respectively) and, conversely, those areas with the lowest per capita GHG emissions (Greater London (3.4 tCO_2e) and South East (4.7 tCO_2e)) have the highest population density (5,596 and 487 people per km^2, respectively). Therefore, it is likely that population density as a proxy for the reliance on high-emitting transport modes and the (un)availability of public transport infrastructure can partly explain policy support for command-and-control policies.

4. Discussion

4.1. Theoretical and practical implications

In this study, we examined UK public support for four distinct policy instruments using actual policy proposals of UK political parties and government institutions. In our sample, the majority of the UK public supports *all*

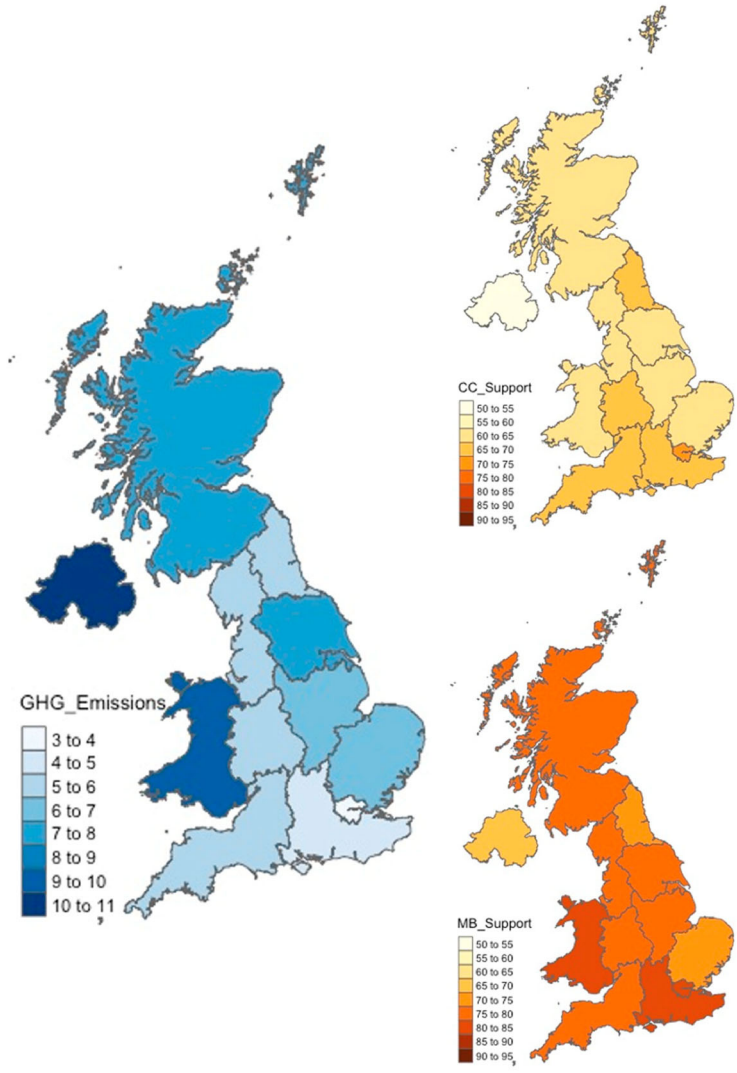

Figure 4. Aggregate per capita GHG emissions per UK region in tCO_2e (left) and regional support for command-and-control (top right) and market-based (bottom right) policy instruments. The data underlying this Figure can be found in the Supplemental Materials.

policy instruments (e.g. almost two-thirds supported command-and-control policies while almost three-quarters supported market-based instruments). Yet, in relative terms, we found the weakest support for command-and-control policies, followed by market-based policies, and, finally, information-based and voluntary policies. In other words, while a majority is in favour of more stringent climate policies, we observed even stronger support for more lenient policy instruments. Accordingly, this study highlights a double-edged sword for UK climate politics. On the one hand, our findings are a sign of hope because they demonstrate that the UK public supports those policy instruments that can effectively reduce carbon emissions in an effort to reach net-zero. This stands in contrast to the recent discourse of the Conservative Party that the public is against stringent climate regulation (Parker & Fisher, 2023). On the other hand, these results are worrying, because the UK public shows even higher support for voluntary and information-based policies; instruments whose potential to reduce carbon emissions is heavily debated at best and disproven at worst (Grolleau et al., 2016; Martin & Saikawa, 2017; Peñasco et al., 2021 Potoski & Prakash, 2013;). This puts the feasibility of reaching net-zero at risk.

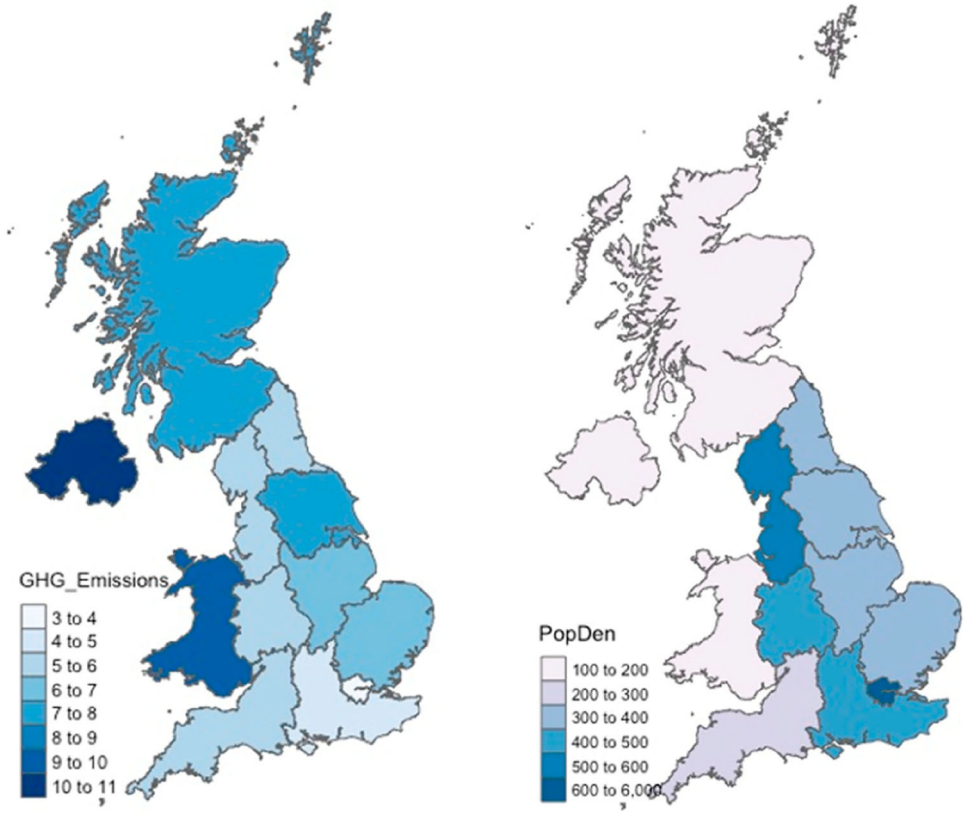

Figure 5. Aggregate per capita GHG emissions in tCO2e (left) and population density in people per km^2 (right) per UK region. The data underlying this Figure can be found in the Supplemental Materials.

Interestingly, our findings stand in contrast to those of Rhodes et al. (2017) who found the Canadian public to prefer voluntary and command-and-control policies over market-based instruments. The fact that the authors used hypothetical policy instruments (as opposed to real policies), understood subsidies and government investments as voluntary (as opposed to market-based) policies and used considerably less stringent regulatory policies compared to those used in our study, may partially explain these divergent findings. This highlights both the need to be clear on how policy instruments are defined and the degree to which policies within an instrument can differ in their degree of CO_2 reduction ambition. This study also sheds more light on the theoretical discussions around relative support for market-based over command-and-control-based policies and vice versa. Our results suggest that, in the absence of using positive frames (Young et al., 2022) or combining climate policies with social policies (Bergquist et al., 2020), individuals show stronger support for less stringent climate policies. This supports the argument that individuals tend to prefer those policy instruments that are associated with smaller degrees of government intervention (Bretter & Schulz, 2023; Tobler et al., 2012).

Results of our regional analysis demonstrate that it might be too simplistic to treat support for different policy instruments homogeneously across the UK. Individuals in the East of England, the North West, Yorkshire and The Humber, and Northern Ireland are less likely to support command-and-control and market-based policy instruments. This stronger support for command-and-control decarbonization policies in Greater London implies that such policies have a greater chance of being publicly supported, and thus of being implemented, compared to the aforementioned areas in the UK.

These findings reiterate London's exceptional role in the UK and scholars may suggest that the city's significantly higher average income, younger population (McCann, 2016) and more social and left-leaning values held

by its citizens (Butt et al., 2022) may be an explanation for our results. Indeed, our individual-level findings partly support this notion given that younger people and those with stronger environmental worldviews showed higher levels of support across policy instruments. Aligned with previous studies (Heath & Gifford, 2006; Hornsey et al., 2016), we also found a negative association of free-market beliefs and policy support and that regional variations in those free-market beliefs can partly explain regional variations in policy support for command-and-control and market-based policies: Individuals living in those regions that had lower levels of support compared to Greater London, also had stronger free-market beliefs. Our findings are thus aligned with a recent YouGov poll (Smith, 2023) that found significantly higher support for increased spending on climate measures in London compared to other regions in the UK.

Interestingly, regions with less support, particularly for command-and-control policies, compared to Greater London, tend to be those regions with lower population density, suggesting that individuals living in areas with less access to public transport infrastructure and those that more heavily rely on high-emitting transport modes (e.g. cars) show less support. In more general terms, the results on population density highlight the role of urban-rural aspects and related issues surrounding public infrastructure (European Commission and European Investment Bank, 2019).

Moreover, we found that individual political orientation is another important factor that affects policy support. Compared to individuals supporting the Conservative party, people preferring the Green, Labour (and Co-operative), or Scottish National Party provided a higher level of support for command-and-control and market-based policies. These findings are aligned with other studies (Bergquist et al., 2020; Kenward & Brick, 2021) and underline the importance of political orientation for the public discourse of climate policies and the danger of polarizing such discourse along political party lines (Bretter & Schulz, 2023). Yet, we did not observe an effect of income on policy support for all instruments, but only information-based ones. This is somewhat aligned with existing literature that has received mixed findings for the effects of income on policy support. For example, Rhodes et al. (2017), like us, only found an effect of income on more lenient policy instruments while many investigations have found no effect of income (Bergquist et al., 2020; Kachi et al., 2015), particularly after controlling for psychological variables such as attitudes (Goldberg et al., 2021). Finally, our study shows that self-reported knowledge about climate change, its consequences and potential solutions, is not related to policy support, regardless of the policy instrument. These findings stand in contrast to studies that have shown a (small) effect of climate change knowledge on adaptive behaviours (van Valkengoed & Steg, 2019) and thus warrant further research.

Our study relates to international climate discussions. The fact that a significantly lower share of participants favoured regulatory and market-based instruments partially echoes developments in France and Germany. In France, the 'yellow vests' protests highlighted the economic inequality and structural mobility issues that made a higher tax on fuel a particular problem for lower-income and rural citizens (Rubin, 2018). On the one hand, this is in line with our findings that people in less densely populated regions in the UK showed lower support for market-based policies compared to those in more densely populated regions. On the other hand, and in contrast to the protests in France, in our study, a majority of at least two-thirds still supported this type of policy instrument. One potential reason for these seemingly different findings may be that the protests in France were only partially a result of the fuel tax increase and had to a large extent to do with other policy developments in France (Bynum et al., 2021).

In Germany, the planned ban of, and the costs associated with, changing boilers in private buildings brought to the forefront considerations of both individual freedoms and economic burden (Staude, 2023). This notion of individual freedom was also often evoked in climate policy debates in Germany's 2021 Federal Election campaign (Worm, 2022) and is 'a dominant social paradigm' (Dunlap & McCright, 2015, p. 302) in climate policy discussions in the USA. Our results support the important role of beliefs in individual freedom in two ways. First, policy instruments with more government involvement that were more prescriptive received significantly less support. Second, those showing stronger beliefs in free-markets were less supportive of regulatory and market-based policy instruments.

Taken together, this suggests that more needs to be done to convince voters outside more politically liberal large cities that government involvement to mitigate the climate crisis may not be detrimental to their welfare.

Politicians need to address both structural aspects as evident by the urban-rural divide, and need to overcome ideological barriers related to free-market beliefs.

Our study has important implications for practitioners and policymakers. Our findings highlight the need to improve support for decarbonization proposals through place-based initiatives and solutions to achieve higher support for command-and-control and market-based policies throughout the country. We have shown that particular regions in the UK seem to lag behind in the support for those policy instruments that seem to be most effective in tackling climate change. Researchers should therefore examine interventions that may be able to promote such support. Crucially, given the regional variance in policy support in the UK, our findings point towards tailored approaches for each of the UK regions to increase public support as opposed to national campaigns, in particular in less densely populated areas. Future research should therefore focus on examining interventions to increase local support for command-and-control and market-based policies. Similarly, improving support for regulatory and market-based instruments should take on board positive frames (Young et al., 2022) and the use of policy packages that combine climate with social and economic policies to compensate and alleviate the burden from citizens (Bergquist et al., 2020).

4.2. Limitations and future directions

Against the strength of the representative sample and the actual policy proposals, we have to weigh several limitations. We needed our sample to be representative of the UK population in terms of age, gender, and ethnicity to allow for general conclusions about the policy support in the UK and the individual-level factors explaining such support. Given that Prolific only allows for such representativeness on a national level, this meant that our sample was not representative of the twelve UK regions under examination. Similarly, although our overall sample size was acceptable, we want to highlight that our regional sample sizes may be considered small and thus our findings should be understood as preliminary. Therefore, we encourage scholars to conduct more research with larger and regionally representative samples (and across various countries) to deepen our understanding of regional differences in policy support. Although we revealed important insights for regional variations in public support for decarbonization policies, using twelve UK regions (ITL-1) as the geographical unit brings certain limitations. For example, we could not account for heterogeneity within regions and instead treated each region as homogeneous. Treating these regions homogenously may have therefore biased the data and our results need to be taken with care. Although a large sample size is required, researchers should use more granular geographical units (ITL-2 or ITL-3) with regional sampling weights to better unravel regional variations in public support for policy instruments.

In our study, we have used sixteen actual decarbonization policy proposals by UK political parties and government institutions to examine the extent to which the public supports the underlying four policy instruments. This provides our study with high external validity and allows practitioners and policymakers to draw important conclusions from our study. However, as with all studies with high external validity, ours comes with less internal validity, because we did not use hypothetical (and matching) policies. Despite the benefits that come with this approach, decarbonization policies that all referred to the same industry or sector would have had higher internal reliability. However, this was challenging to do, given that different parties propose varying policies focusing on distinct industries. This means that some of the differences we found between policy instruments might have been attributable to differences in sectors or industries (or to differences in the ambition to decarbonize the economy) that existed between policy instruments. Similarly, some of the differences in preferences may result from the varying levels of ambition in reducing emissions rather than the fact that they are different policy types. We averaged support across the four items for each policy type to partially remedy this possibility. Yet, varying levels of ambition may still be a confounding factor that readers must take into account when interpreting our findings, as is also shown by comparing our results to those of Rhodes et al. (2017). Future research can thus replicate our study using policies with higher internal validity and examine whether our findings remain.

Although we have examined decarbonization policy support across distinct policy instruments, it is important to highlight that having such clear distinctions may not be ideal for obtaining public support. In a recent review, Drews (2021) demonstrated that policy bundles can, under the right circumstances, receive higher

levels of support, compared to merely focusing on one policy instrument. While some scholars have found that integrating climate policies and social policies can enhance policy support (Bergquist et al., 2020) others have shown that support depends heavily on the extent to which the policies are perceived to be stringent (Fesenfeld et al., 2020). Therefore, future research needs to examine to what extent different policy bundles that include variations of our four policy instruments receive public support and how such support differs per region of the country under examination.

Finally, given the aforementioned repeated use of individual freedom as a frame in climate policy debates, more research is needed to understand the relationship between individual preferences for freedom and types of policy instruments that vary in the degree of government involvement.

5. Conclusions

In this paper, we have demonstrated that UK public support varies not only by policy instruments but also by UK regions where individuals living in Greater London show higher support for command-and-control and market-based policies, compared to many other UK regions. We believe that understanding regional nuances is crucial for targeted and effective policymaking. Here, we have only started to unravel the origin of such regional variations. We have found that regional differences in free-market beliefs are likely to be one driver of our findings (alongside variations in population density) whereas regional variations in a political party's electoral success are unlikely to explain these results. However, more research is needed to build on our findings and to extend research on regional variations of policy support. Enquiries such as ours can then inform practitioners to create place-based interventions to enhance the public support for those policies (e.g. command-and-control) that we desperately need in our fight to tackle climate change. We hope that our research is one step in this direction.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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Appendices

Appendix A. Table of measures and sources.

Policy: Command and control	1: 'Strongly disagree' … 6: 'Strongly agree'	The government should require car manufacturers to only produce vehicles that emit zero emissions during use.	Green party [1]
		The government should require companies to reject any business transactions that conflict with climate principles set by the government.	Labour Party [2]
		The government should set new binding product standards for vehicles and appliances in line with best sustainability practice.	Green party [1]
		The government should ban all forms of fossil fuel extraction.	Green party [1]
Policy: Market-based	1: 'Strongly disagree' … 6: 'Strongly agree'	The government should introduce a carbon tax on all fossil fuel imports based on their greenhouse gas emissions.	Green party [1]
		The government should provide financial support for research and development into carbon capture & storage and other carbon removal technologies.	Liberal Democrats [3]
		The government should develop a carbon market: Companies have to buy carbon emission permits, which they can trade in a carbon market with other companies.	UK government [4]
		The government should stop all subsidies currently paid to fossil fuel-related activities.	Green party [1]
Policy: Information-based	1: 'Strongly disagree' … 6: 'Strongly agree'	The government should introduce a public information campaign to raise awareness for the carbon dioxide costs and impacts of companies' activities.	Green party [1]
		The government should expand existing labelling for consumer products to include assessment of embodied emissions.	Green party [1]
		The government should require companies to use labels that inform consumers of durability, repairability, and recyclability of products.	UK government [5]
		The government should introduce a green taxonomy that defines which economic activities tackle climate change and environmental degradation to help better guide investors and consumers.	UK government [6]
Policy: Voluntary	1: 'Strongly disagree' … 6: 'Strongly agree'	The government should provide non-binding advice to companies as to how to reduce their emissions.	Liberal Democrats [7]
		The government should launch a voluntary carbon-offset standard (e.g. voluntary rules for the planting of trees to offset emissions).	CCC [8]
		The government should support business to make greener choices through the formation of a voluntary buyers alliance (e.g. voluntary 'green' purchases along the supply chain).	UK government [9]
		The government should introduce non-binding 'greener' product standards for vehicles and appliances.	UK government [9]
Free-market beliefs	1: 'Strongly disagree' … 6: 'Strongly agree'	An economic system based on free markets unrestrained by government interference automatically works best to meet human needs.	Heath and Gifford (see main text)
		I support the free-market system, but not at the expense of environmental quality. (R)	Heath and Gifford (see main text)
		The free-market system may be efficient for resource allocation, but it is limited in its capacity to promote social justice. (R)	Heath and Gifford (see main text)
		The preservation of the free market system is more important than localized environmental concerns.	Heath and Gifford (see main text)
		Free and unregulated markets pose important threats to sustainable development. (R)	Heath and Gifford (see main text)
		The free-market system is likely to promote unsustainable consumption. (R)	Heath and Gifford (see main text)
Climate change knowledge	1: 'Not at all informed' … 4: 'Well informed'	The different causes of climate change.	Vainio and Paloniemi (see main text)
		The different consequences of climate change.	

			Vainio and Paloniemi (see main text)
		The different ways in which we can fight climate change.	Vainio and Paloniemi (see main text)
Biospheric values	1: 'Not important to you' … 7: 'Very important to you'	Preventing pollution: Protecting natural resources.	De Groot and Steg (see main text)
		Respecting the earth: Harmony with other species.	De Groot and Steg (see main text)
		Unity with nature: Fitting into nature.	De Groot and Steg (see main text)
		Protecting the environment: Preserving nature.	De Groot and Steg (see main text)
Income	1: '0 GBP' … 100: '100k GBP' (slider)		
Education	1: 'Doctoral degree' … 6: 'Vocational education'		
Political affiliation	1: 'Alliance party' … 11: 'Social democratic and labour party'		
Region	1: 'Greater London' … 12: 'Northern ireland'		
Gender	1: 'Male' … 3: 'None of the above'		
Age	1: '18 years' … 74: '90 + years'		

Note. Items with (R) are reverse-coded.
Sources of policies:
1. Green Party of England and Wales. *If Not Now, When? Green Party Manifesto 2019*. https://campaigns.greenparty.org.uk/manifesto/ (2019).
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3. Liberal Democrats. Climate Action Now. *2019 Liberal Democrat Manifesto* https://www.libdems.org.uk/plan (2019).
4. UK government. *Net Zero Review*. *HM Treasury*. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/945827/Net_Zero_Review_interim_report.pdf (2020).
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6. UK government. *The Ten Point Plan for a Green Industrial Revolution*. *Department for Business, Energy and Industrial Strategy* https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution (2020).
7. Liberal Democrats. *Green Industry, Green Jobs and Green Products*. *2019 Liberal Democrat Manifesto* https://www.libdems.org.uk/plan (2019).
8. UK Climate Change Committee. *Voluntary Carbon Markets and Offsetting*. (2022).
9. UK government. *Industrial Decarbonization Strategy*. *HM Government* (2021).

Appendix B. Spatial analysis output.

		Policy instrument											
		Command-and-control			Market-based			Information-based			Voluntary		
UK region	Sample	Non-support	Support	% Support	Non-support	Support	% Support	Non-support	Support	% Support	Non-support	Support	% Support
Greater London	212	58	154	72.6	36	176	83.0	27	185	87.3	25	187	88.2
South West	185	59	126	68.1	38	147	79.5	29	156	84.3	26	159	85.9
South East	304	93	211	69.4	56	248	81.6	28	276	90.8	35	269	88.5
East of England	149	58	91	61.1	43	106	71.1	24	125	83.9	22	127	85.2
West Midlands	152	48	104	68.4	33	119	78.3	16	136	89.5	13	139	91.5
East Midlands	133	52	81	60.9	31	102	76.7	16	117	87.9	16	117	87.9
North West	218	82	136	62.4	51	167	76.6	38	180	82.6	29	189	86.7
Yorkshire and The Humber	202	79	123	60.9	49	153	75.7	33	163	83.7	28	174	86.1
North East	83	29	54	65.1	21	62	74.7	10	73	87.9	12	71	85.5
Scotland	157	59	98	62.4	35	122	77.7	25	132	84.1	28	129	82.2
Wales	78	28	50	64.1	14	61	82.1	14	64	82.1	11	67	85.9
Northern Ireland	38	18	20	52.6	12	26	68.4	6	32	84.2	3	35	92.1
UK Average (excl. London)	1699	605	1094	64.4	383	1316	77.5	239	1460	85.9	223	1476	86.7
Total (including London)	**1911**	**663**	**1248**	**65.3**	**419**	**1492**	**78.1**	**266**	**1645**	**86.1**	**248**	**1663**	**87.0**

Note. N = 1911.

Appendix C. Logistic regression output.

UK region	Policy instrument							
	Command-and-control		Market-based		Information-based		Voluntary	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Greater London (= *ref)*								
South West	0.80	[0.52, 1.24]	0.79	[0.48, 1.31]	0.79	[0.45, 1.38]	0.82	[0.45, 1.47]
South East	0.85	[0.58, 1.26]	0.91	[0.57, 1.44]	1.44	[0.82, 2.52]	1.03	[0.59, 1.77]
East of England	0.59**	[0.38, 0.92]	0.50**	[0.30, 0.83]	0.76	[0.42, 1.38]	0.77	[0.42, 1.43]
West Midlands	0.82	[0.52, 1.29]	0.74	[0.44, 1.25]	1.24	[0.64, 2.39]	1.43	[0.71, 2.89]
East Midlands	0.59**	[0.37, 0.93]	0.67	[0.39, 1.15]	1.06	[0.55, 2.06]	0.98	[0.50, 1.91]
North West	0.62**	[0.42, 0.94]	0.67*	[0.42, 1.08]	0.69	[0.41, 1.18]	0.87	[0.49, 1.54]
Yorkshire and The Humber	0.59**	[0.39, 0.89]	0.64*	[0.39, 1.03]	0.74	[0.43, 1.29]	0.83	[0.47, 1.48]
North East	0.70	[0.41, 1.21]	0.60	[0.33, 1.11]	1.07	[0.49, 2.31]	0.79	[0.38, 1.66]
Scotland	0.63**	[0.40, 0.97]	0.71	[0.42, 1.19]	0.77	[0.43, 1.39]	0.62	[0.34, 1.10]
Wales	0.67	[0.39, 1.17]	0.94	[0.47, 1.85]	0.67	[0.33, 1.35]	0.81	[0.38, 1.74]
Northern Ireland	0.42**	[0.21, 0.85]	0.44**	[0.20, 0.95]	0.78	[0.29, 2.03]	1.56	[0.45, 5.44]
UK Average (excl. London)	0.68**	[0.49, 0.94]	0.70*	[0.48, 1.02]	0.89	[0.58, 1.37]	0.88	[0.56, 1.37]
Constant	2.66***	[1.96, 3.59]	4.89***	[3.42, 6.99]	6.85***	[4.58, 10.26]	7.48***	[4.93, 11.35]
Akaike Inf. Crit.	2465.40		2010.70		1545.90		1478.80	

Note. N = 1,911; *ref* = reference group; ***$p < .01$, **$p < .05$, *$p < .10$.