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# Public Support for Pro-Environmental Policy Measures: Examining the Impact of Personal Values and Ideology

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**Abstract:** This article explores the relationship between two major explanations of the formation of positive attitudes towards environmental policy measures. Ideological orientation and personal values have, in theory, significant overlaps in the sense that they collect general and cross-situational sentiments used to understand and evaluate a wide range of political issues. However, in the empirical literature, although they independently have been shown to have rather significant effects on pro-environmental policy attitudes, they are rarely tested together in order to explore whether they capture the same basic mechanisms. In this article, two data sets from Sweden are used to demonstrate both that ideological orientation and personal values independently affect pro-environmental policy support, as well as that these effects differ across different policy types.

**Keywords:** environmental attitudes; ideology; values; pro-environmental policy attitudes

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## 1. Introduction

At the very least, overcoming global environmental degradation requires two factors: (a) expedient policies and policy measures and (b) broad support for these policy measures among those affected by them. The statement may appear a bit audacious, but the underlying argument is rather straightforward. As a smallest common denominator, all of the most pressing contemporary environmental problems can be characterized as (large-scale) collective action problems, that is, situations in which the desirable outcome is dependent on concerted collective efforts, but in which everyone's individually rational behavior will result in a worse outcome for all [1,2]. Furthermore, since uncertainties about the behavior of other actors increase with the scale of the problem, a cooperative strategy risks becoming exceedingly costly for the individual if others choose to free-ride by enjoying the good without substantially contributing to its provision. Thus, unless we can trust other actors to cooperate, we have rather few incitements to do so ourselves.

From this follows that voluntary large-scale environmental collective action (to be distinguished from small-scale collective action, cf. [3,4]) is not to be expected. Instead, overcoming large-scale problems commonly requires third party intervention to generate cooperation that would not otherwise occur, that is, that the state or some other overarching public authority take measures to lower uncertainty and produce behavioral regularities through different forms of coordination activities [5,6]. Such intervention is typically conducted through the use of various policy measures: regulations, taxes, subsidies, and information provision. This certainly requires that technical policy aspects, such as cost-effectiveness and fit within the current political-administrative system, are considered in both

the decision-making and implementation stages. However, in order for government to successfully combat large-scale collective action problems, policy measures must also enjoy broad public support [7]. In part, unless there is widely held support for the measures among the electorate, it is reasonable to assume that politicians in representative democracies will be significantly more reluctant to suggest or implement them (cf. [8]). Furthermore, without public support, we are less likely to find that people will comply to existing measures, producing high and unnecessary costs associated with monitoring and sanctioning.

However, of main concern in this paper is not what degree of support various policy measures enjoy, but rather what factors determine the support. Understanding the antecedents to policy support is important not the least when it comes to choosing the most passable measures, but also when developing and designing new measures. In the literature, a broad collection of factors have been demonstrated to affect pro-environmental policy support, ranging from individuals' environmental concern, to people's level of interpersonal trust and trust in institutions and/or the political system, to demographic and socioeconomic determinants such as gender, age, socioeconomic background, and economic conditions (for an overview see [9]). Nonetheless, two explanations dominate the literature: (a) people's values and (b) their ideology. A vast number of scholars have shown that personally held values affect support both for public policy in general (e.g., [10–14]) and for pro-environmental policies specifically [15–19]. Simultaneously, research has repeatedly found that a left-right ideological dimension constitutes a crucial determinant of all sorts of environmental attitudes, including support for pro-environmental policies. For example, it has been demonstrated that people who consider themselves as being to the right (or conservative) prefer a smaller government, a free-market economy, tend to deprioritize environmental issues, and display weaker environmental support [20–31]. Other studies add to this picture, providing evidence for a growing attitudinal cleavage as right-wing and left-wing sympathizers are gradually moving further and further apart in matters related to the environment [22,32,33].

However, despite the palpable influence that these two factors respectively enjoy in the literature, the two seldom meet in studies tapping into the antecedents of pro-environmental policy support. Instead, we find a bulkhead between scholars proceeding from value-centered theory and those instead taking their starting point in political-ideological orientations. Theoretically, this is somewhat puzzling since it is reasonable to assume that a person's values and his or her ideology should have much in common—perhaps even capturing the same basic phenomenon (cf. [34,35]). If this possibility is not ruled out through empirical research, there is a risk that two parallel universes are established, the primary reason being a lack of theoretical and cross-disciplinary dialogue. Based upon these lines of reasoning, this study aims to investigate if, and to what degree, values-based models and ideologies independently serve to explain pro-environmental policy support, and thus to assess whether these two currently used explanatory frameworks are capturing the same basic mechanisms. Furthermore, since previous empirical applications have also demonstrated that the explanatory strength varies considerably across specific policy features, both in terms of policy design and type of behavior being targeted, this study further examines if the findings are consistent when comparing different types of policy measures.

The rest of the paper is organized in the following way. First, we introduce relevant research on values and ideologies individually and we propose our main hypothesis. This is followed by a discussion of the features of various types of policy measures commonly suggested in the environmental-political debate and the possible significance of policy design activating different mechanisms of support. From this, one additional hypothesis is formulated. Thereafter, we describe the design, methodology, and data used in the study. Lastly, we present and discuss our main empirical results, before we end the paper with some concluding remarks outlining the significance of our study.

## 1.1. Theory and Hypotheses

### 1.1.1. Ideology

As with many key terms used within the social sciences, the concept of ideology is indeed as multifaceted as it is widely applied. Similarly, the current literature is overwhelmed with concepts holding strong conceptual similarities to ideology, such as belief systems and paradigms. Generally, the basic concept of an ideology is here understood as a set of ideas by which a social group tries to make sense of the world. An ideology thus consists of logically coherent explanations, predictions, as well as evaluations of social conditions, and gives its bearers a personal understanding of their relation to the rest of the world. Similarly, the ideology concept referred to by Rohan [35] (p. 270) is described as the “rhetorical association or associations between things, people, actions, or activities and the best possible living” as endorsed or promoted by a group of people, and Jost et al. [36] suggest that ideologies represent prepackaged units of interpretation that spread because of basic human motives to understand the world, avoid existential threat, and to maintain valued interpersonal relationships.

Measuring ideology empirically can be executed along several dividing lines [12,36–38]. Individuals' subjective positioning on a left-right scale (or defining themselves as “liberal” or “conservative” [39]), where each position on the scale represents conscious beliefs and opinions about characteristics of the political and economic system, is the most used technique in the previously cited literature. Traveling to the left on the scale, ideology is manifested as an enhanced support for the active, non-neutral state, an increasingly regulated market, and universal welfare politics. Conversely, preferences for a passive, neutral state, an unregulated market, and limited social policy are located on the right-hand side. There are ample examples of scholars using this left-right dimension to capture ideology and to explain public preferences on a wide range of issues (e.g., [40–44]).

The left-right dimension is also the most common way to measure and capture ideology in research on pro-environmentalism. For instance, a consistent finding over time is that right-leaning individuals are more hesitant to embrace environmentalism and environmental concern compared to those identifying themselves as belonging to the left-hand side of the scale [22,23,29,30,33,45]. The assumed reasons behind this ideological divide are the strong associations between ideology and the formation of preferences regarding market regulation and the economic growth paradigm, where right-leaning individuals are skeptical towards the environmentalist vision of a steady-state economy. Also from a perspective more readily connected to fundamental visions of state-society relations, ideology can be expected to affect environmental support in general and support for pro-environmental policy measures in particular. For example, it is reasonable to assume that individuals positioning themselves to the left will be less negative to the introduction of environmental policies not only because such measures are compatible with their conviction that the market economy needs to be regulated, but also because they believe that government should take a more active role in establishing a good society.

While there are generally strong effects of ideology on basically all environmental issues, it is crucial to point out that recent research indicates that the ideological divide in pro-environmental attitudes differs depending both on country context and the environmental issue in question [46–49]. This variation may be an indication that the effect of ideology on environmental attitudes is conditioned by how strongly people perceive the link between ideological position and environmental support to be. These novel results, questioning the link between ideological position and environmental support, are indeed interesting as they put into question a significant amount of research pointing towards ideology as one of the most important explanatory factors behind pro-environmentalism [23].

### 1.1.2. Personal Values

A range of scholars has also examined the value basis of pro-environmental sentiments, here equating policy support with other forms of low-cost pro-environmental behaviors [18,50–54]. As with ideology, the concept of values suffers from a fair share of definitional inconsistency. Most scholars

occupied with values research nevertheless seem to agree with Allport's [55] (p. 543) description of values as a cross-situational "dominating force in life," underpinning the formation of attitudes and opinions in relation to both familiar and new conditions or social objects [40,54,56,57]. Here, we acknowledge the application of the values concept in social psychology and define values simply as abstract, enduring, and trans-situational goals.

Using the Schwartz value survey as a starting point, studies focusing on the value basis of pro-environmental attitudes show that the more strongly individuals subscribe to a pro-social or biospheric value domain, that is, values that motivate the restriction of personal interests in favor of acting for a common good either extended to all people or to all living things [17,18,51,58], the stronger are their pro-environmental attitudes and the more likely they are to engage in various pro-environmental behaviors. Conversely, the relation between values that favor personal outcomes (e.g., wealth, success, or social power) and pro-environmental attitudes are either negative or insignificant. Similar conclusions are drawn when applying the labels cooperators (pro-socials) and *non-cooperators* (pro-selves) within social dilemma research, where the former has been identified as having more pronounced environmental attitudes and expressing a stronger willingness to engage in pro-environmental activities [50,59].

In both theory and through empirically driven research, two sets of very basic factors are thus proposed as fundamentally important determinants of pro-environmental policy support. How, then, are values and ideology related to each other in their impact on peoples' attitudes towards pro-environmental policy measures? Are they clearly distinct from each other, capturing completely different mechanisms, or are they basically capturing the same characteristics among people (see discussion in [60–62])? At present, as many scholars apply similar definitions of values and ideologies as well as describe their significance for (pro-environmental) political preferences in similar ways, we have reasons to expect both that values and ideologies are indeed capturing the same concept, albeit going under different names. In this case, the similarities are apparent and we should expect a grand explanatory overlap between the two factors. Based upon these lines of reasoning, our main hypothesis suggests that:

**Hypothesis 1 (H<sub>1</sub>).** *A person's ideology does not have an effect on pro-environmental policy support that is independent from the effect of personal values.*

### 1.2. Support for Different Pro-Environmental Policies

As stated previously, there are ample reasons to assume that the limits of public support also constitute the very tangible limits of the policymaking process (e.g., [63–65]). Also, when it comes to environmental policy, public attitudes seem to govern policy choice [66]. From a global perspective, a large number of policy measures have been proposed in the attempts to find routes towards individual-level behavioral change, most basically varying in the amount of coercion that they imply (cf. [67,68]). However, when comparing different countries' use of climate policy measures, clear variations can be detected. Although system of government, path dependency, and economic entanglements can explain a certain amount of cross-country variation in policy choice (cf. [69,70]), previous research also points specifically towards the highly politicized nature of environmental policy measures and their sensitivity to public support as explanatory factors for cross-country differences [71]. However, most research on pro-environmental policy support is either focused on one specific policy measure or does not make distinctions between different types (cf. [72,73]), thus restricting the possibility to detect variations in the drivers behind support of different types of policies. This motivates us to investigate not only if and how ideology and values affect policy support, but also to explore whether these effects vary between different policy designs.

The significance of policy design for public support is well established through empirical studies [17,72,74], suggesting that preferences for a policy measure are intimately tied to the individual's evaluation of its attributes in terms of effectiveness [75–77], fairness [59,78–80], freedom [81], as well

as expected personal costs and benefits [82,83]. Given that these attributes vary with policy design, and that both values and ideology reasonably affect how these attributes are interpreted and rated in terms of importance, we assume that the effect of ideology and values on policy support will vary across different policy measures. For example, some policy measures require more active involvement of the state in governing behavior (e.g., subsidies, taxes, and regulations), while others involve less involvement and instead guide the citizens (e.g., information provision). It is then up to the single individual to decide whether or not to take action. In the same way, environmental taxes are said to effectively internalize externalities (also global ones), which can be assumed to generate particularly strong support among people with strong universalistic and biospheric values. At the same time, taxes are strongly associated with redistributive effects, which also affect public preferences. Therefore, we suggest as our second hypothesis:

**Hypothesis 2 (H<sub>2</sub>).** *The effects of ideology and values on pro-environmental policy support are different for different types of policy measures.*

## 2. Materials and Methods

A probable reason why analyses of pro-environmental policy support commonly do not include both measures of values and ideology is the lack of data, as few datasets include reliable measurements of personal values, ideological left-right placement, and attitudes towards a range of different pro-environmental policy measures. For this study, we relied on two Swedish surveys. Primarily, we make use of a dataset based on a self-administered mail questionnaire sent to a random sample of 3000 Swedes in 2009 (Dataset 1). The response rate was quite modest (36%), however, a comparison with the annual SOM (Society Opinion Media) survey, also distributed to a random sample of the Swedish population and performed by University of Gothenburg (response rate around 60%) shows that our respondents match those of the SOM survey on key socioeconomic and political characteristics, giving us confidence that our dataset is fairly accurate and representative of the Swedish public. For a robustness test we also used a survey dataset ( $N = 1928$ ) from 2014 with information from Swedish university students in political science, law, and economics (Dataset 2). Among them, 43% are men and 57% are women. Responding to political position along the left-right dimension, 36% state that they are “clearly” or “to some extent” to the left, while 47% state that they are “clearly” or “to some extent” to the right.

### 2.1. Dependent Variable

To gauge the effects of values and ideology on environmental policy support in general, we constructed an index based on 11 different policy suggestions [84] in Dataset 1, to which the respondents were asked to indicate their attitudes on a five-point scale ranging from 1 (a very bad suggestion) to 5 (a very good suggestion), with 3 labeled as “a neither good nor bad suggestion.” The index has a good level of internal consistency (Cronbach’s  $\alpha = 0.82$ ). In order to estimate whether the effects vary substantially between different policy measures, we also categorized the 11 policy suggestions into four different types: (a) acceptance of taxes ( $\alpha = 0.75$ ), (b) acceptance of regulation and bans ( $\alpha = 0.69$ ), (c) acceptance of information ( $\alpha = 0.71$ ), and (d) acceptance of tax rewards/subsidies. The two items making up the latter type are, however, poorly correlated with an alpha below 0.5. Therefore, we interpreted this index more cautiously. In Dataset 2, the respondents were asked to rate four different policy instruments [85] using the same five-point scale as in Dataset 1. We think that using both more specific policy suggestions and perceptions about several policy measures, capturing environmental support in general, can evaluate the robustness of our results.

### 2.2. Independent Variables

Both datasets apply the same measurements for the main independent variables. Ideology is operationalized as people’s subjective placement on the left-right dimension. Three different categories

are created: left (0–4), center (5), and right (6–10). In Dataset 1, 33% are categorized as left and 37% are categorized as right.

Personal values are captured by a shortened version of the Schwartz [86] value survey, where the respondents were asked to indicate the extent to which 26 value items function as guiding principles in life. From the responses, three different value categories—egoistic (e.g., “power,” “material wealth,” “authority”), altruistic (e.g., “equality,” “a world in peace,” “social justice”), and biospheric (e.g., “respect for nature,” “be one with nature,” “protect the environment”)—are deciphered and used as factors in our regressions.

### 2.3. Controls

As a range of studies in predominately environmental psychology (e.g., [54,74] follows Schwartz’ [87] Norm-Activation Model to suggest that the effect of values are channeled through environmental beliefs and personal norms, we included controls for these in all models. General environmental beliefs are captured through a shortened version of the New Environmental Paradigm scale [88] and we used standard items for tapping into awareness of consequences [89], ascription of responsibility [90], and personal norms [91].

Recently, scholars aiming to explain pro-environmental policy support have emphasized the role of generalized and institutional trust [46,72,92,93]. Generalized trust is measured by the question, “Generally, to what extent do you feel that people can be trusted?” (scale ranging from 0 to 10). Institutional trust is measured by the respondents’ trust in “government,” “parliament,” “politicians,” and “Swedish authorities,” where the respondents are asked to rate their level of trust in each of these institutions on a five-point scale from “a great deal of trust” to “very little trust” (Cronbach’s alpha = 0.83).

As some of the policy suggestions are rather specific and clearly signal consequences for the individual, there are also reasons to include variables that capture self-interest. For example, carnivores (or vegetarians) are more likely to dislike (or favor) a meat tax, and the same thing applies to taxes on gas for frequent car users. Therefore, we included controls for food habits (how often the respondents eat meat) and whether one travels by car to work/school and residence [94]. Furthermore, we included income, as this determines people’s acceptance of environmental taxes since these have been argued to disproportionately affect the poor [95]. As has been argued before [93], people’s perceptions of whether environmental policies are necessary and what they think of the coercion involved also depends on whether they perceive that others behave in an environmentally friendly manner or not. An index based on six questions tapping into whether the respondents perceive that other citizens act environmentally friendly or not was used as a control [96]. Lastly, we also controlled for gender, as this often is argued to matter for environmentalism in general [53,88].

## 3. Results

Table 1 presents the first exploration of the data, showing the correlation between the three different value dimensions and ideology in Dataset 1.

**Table 1.** Correlation between Ideology and Values in Dataset 1 ( $N = 989$ ).

	Left-Right Ideological Scale *
Egoistic values	0.15
Altruistic values	−0.27
Biospheric values	−0.15

\* The scale runs from left to right. Hence, low levels indicate that people place themselves to the left, and high values denote that people place themselves to the right on the left-right dimension.

The results indicate that there is some overlap between the two independent variables. Respondents who lean to the right are more likely to load high on the egoistic value scale (0.15) and low on the altruistic value scale (−0.27). Those respondents who load high on the biospheric value dimension are also more

likely to lean to the left (−0.15). These results are not surprising based on what we already know from the extensive research on the ideology-values connection [86,97]. However, the important test for this article is whether, and to what extent, these two individual-level facets have independent effects on pro-environmental policy support. Hence, in order to test our first hypothesis, we performed a number of regression models. The results from these analyses are presented in Table 2.

**Table 2.** The Effect of Ideology and Values on Pro-Environmental Policy Support (Unstandardized coefficients, standard error in parentheses). Ordinary Least Squares Regression. Dataset 1.

	Model 1	Model 2	Model 3	Model 4
Ideology (left-right)	−0.05 *** (0.01)		−0.02 ** (0.01)	−0.03 *** (0.01)
Values				
Egoistic		−0.09 *** (0.01)	−0.08 *** (0.02)	−0.03 ✕ (0.01)
Altruistic		0.05 ** (0.02)	0.03 ✕ (0.02)	0.01 (0.02)
Biospheric		0.16 *** (0.02)	0.16 *** (0.02)	0.07 *** (0.02)
Controls				Included
Constant	3.88 *** (0.05)	2.88 *** (0.08)	3.04 *** (0.09)	1.76 *** (0.19)
N	907	907	907	907
Adjusted R <sup>2</sup>	0.038	0.209	0.217	0.426

Note: \*\*\*  $p < 0.001$ ; \*\*  $p < 0.01$ ; \*  $p < 0.05$ ; ✕  $p < 0.10$ .

Models 1 and 2 show bivariate regressions for ideology and values in support for the index of policy measures, demonstrating that they, each taken separately, have rather strong effects going in the expected direction. In Model 1, although the explained variance for ideology is low (0.038), we note that the coefficient is negative (−0.05) and significant ( $p < 0.001$ ), indicating that the further to the right respondents place themselves on the political spectrum, the less likely they are to show support for pro-environmental policy measures. When focusing on values, Model 2 also finds the expected effects. The stronger the respondents subscribe to egoistic values, the less likely they are to express support for pro-environmental policy measures (−0.09), while the opposite is true for both the altruistic (0.05) and biospheric (0.16) value dimensions. All these effects are also significant. To explore whether the effects of ideology and values are independent of each other, as suggested by Hypothesis 1, Model 3 placed the two sets of independent variables in the same regression. Note that in the combined model the effects of both ideology and personal values retain their significance ( $p < 0.001$ ), with the exception of the altruistic value dimension, which is only significant at the 90% level. The effects of the egoistic (−0.08) and the biospheric (0.16) value dimensions are more or less the same as in Model 2, however, there is a decrease in the effect of the altruistic value dimension (0.03) and of ideology (0.02).

Finally, in Model 4 we included a number of important control variables: gender, generalized and institutional trust, perceptions of other's environmentally friendly behavior, dietary habits, income, general environmental beliefs, and personal norms. The latter two are particularly important controls because the effect of values is argued to be channeled through environmental beliefs and feelings of moral obligation to take action (cf. [58]). This also corresponds well with our findings. When the controls are introduced in the model, the effect of all value dimensions decreases (egoistic = −0.03; altruistic = 0.01; biospheric = 0.07). However, most importantly, the effect of ideological position remains unchanged also when controlling for a range of other variables. Although there is clearly an overlap between values and ideology, and the contribution of ideology to the total explained

variance is modest, the remaining significant effect is an indication that a person's ideology affects pro-environmental policy support independently of his or her personal values. We can therefore dismiss Hypothesis 1.

In order to test Hypothesis 2, that the effect of ideology and personal values on pro-environmental policy support varies across different policy designs, we ran a set of regression models where a distinctive type of policy measure constitutes the dependent variable in each model. The results are reported in Table 3, which demonstrates how the effect of ideology is significant for the level of support for taxes, while insignificant for the remaining policy types. As the negative coefficient indicates ( $-0.05$ ), people with ideological preferences further to the right are less supportive of the use of environmental taxes, which is an expected result. Also for the three value dimensions, the results vary across the different policy types. Whereas the egoistic and altruistic value dimensions display rather weak and, for regulation and subsidies, insignificant effects, the effects of the biospheric value dimension is clearly more pronounced and highly significant in support for both regulative and informative measures. In fact, biospheric values display the only significant effect for regulative measures, and across-the-board positive signs for all of the four policy types. Based on Dataset 1, we can thus far confirm our second hypothesis: The effect of ideology (and values) varies across different pro-environmental policy measures

**Table 3.** The Acceptance of Different Kinds of Policy Instruments (Unstandardized coefficients, standard error in parentheses). OLS Regression. Dataset 1.

	Taxes	Regulation	Subsidies	Information
Ideology (left-right)	$-0.05^{***}$ (0.01)	$-0.02$ (0.01)	$-0.01$ (0.01)	$-0.00$ (0.01)
Values				
Egoistic	$-0.04$ $\times$ (0.02)	$-0.00$ (0.02)	$-0.01$ (0.02)	$-0.04^*$ (0.02)
Altruistic	$-0.01$ (0.03)	$0.01$ (0.03)	$0.04$ (0.03)	$0.04$ $\times$ (0.02)
Biospheric	$0.05$ $\times$ (0.03)	$0.09^{***}$ (0.03)	$0.03$ (0.03)	$0.10^{***}$ (0.02)
Controls	Included	Included	Included	Included
Constant	$0.95^{**}$ (0.33)	$2.23^{***}$ (0.26)	$3.15^{***}$ (0.24)	$1.54^{***}$ (0.20)
N	797	879	842	834
Adjusted R <sup>2</sup>	0.318	0.207	0.097	0.363

Note: \*\*\*  $p < 0.001$ ; \*\*  $p < 0.01$ ; \*  $p < 0.05$ ;  $\times$   $p < 0.10$ .

Robustness testing our results with the use of Dataset 2, we found even more pronounced effects. Table 4 shows the results from the Ordinary Least Squares (OLS) regression models [98]. The effect of ideology is stronger for push instruments (taxation =  $-0.18$  and regulation =  $-0.11$ ) than for pull instruments (subsidies =  $-0.07$ ). Furthermore, for the acceptance of information as a policy measure, the effect of ideology is weak and insignificant. Consistent with the results from Dataset 1, the further to the right the respondents place themselves on the left-right ideological dimension, the more likely they are to be averse to push instruments, and to taxes in particular, while they are not as likely to be averse to pull instruments. Moreover, although the models in Table 4 include beliefs and personal norms (coefficients not shown) through which most of the effects of values are canalized, the varying effects of personal values on different policy types are also confirmed in Dataset 2. Biospheric values drive preferences for all policy types, but the effects are stronger for push instruments. Egoistic values,

on the other hand, are overall negatively connected to governmental coercion. Thus, also when using Dataset 2, we dismiss Hypothesis 1 and confirm Hypothesis 2.

**Table 4.** The Acceptance of Different Kinds of Policy Instruments (Unstandardized coefficients, standard error in parentheses). OLS Regression. Dataset 2.

	Taxes	Regulation	Subsidies	Information
Ideology (left right)	−0.15 *** [0.02]	−0.09 *** [0.02]	−0.04 * [0.02]	0.04 * [0.01]
Values				
Egoistic	−0.01 [0.02]	−0.01 [0.02]	0.04 * [0.02]	−0.03 * [−0.01]
Altruistic	0.01 [0.02]	0.06 ** [0.02]	0.04 ∩ [0.02]	0.07 *** [0.02]
Biospheric	0.09 *** [0.02]	0.09 *** [0.02]	0.01 [0.02]	0.06 *** [0.01]
Controls	included	included	included	included
Constant	1.00 *** [0.22]	1.66 *** [0.21]	1.57 *** [0.22]	2.13 *** [0.17]
N	1709	1709	1706	1711
Adjusted R <sup>2</sup>	0.274	0.196	0.142	0.212

Note: \*\*\*  $p < 0.001$ ; \*\*  $p < 0.01$ ; \*  $p < 0.05$ , ∩  $p < 0.10$ . Included control variables: gender, generalized trust, institutional trust, ascription of personal environmental norm, discipline (economics, law, political science).

#### 4. Discussion

Starting off from the undisputable importance of public policy support for successfully governing towards collective action behavior in the environmental field, this article set out to explore the relationship between two major explanations for the formation of positive attitudes towards environmental policy measures. These two explanations have, at least in theory, significant overlaps in the sense that they collect general and cross-situational sentiments used to understand and evaluate a wide range of political issues. However, in the empirical literature, although they independently have been shown to have rather significant effects on pro-environmental policy attitudes, they are rarely tested together. To date, we have not known whether and to what extent the noticeable effect of personal values and ideology capture the same basic mechanisms. This knowledge is, however, imperative in order to better understand the drivers behind policy support, and thus pave the way for the implementation of effective and legitimate governmental coercion in the environmental field.

Using items from the Schwartz value survey and standard self-reported measures of left-right ideology, our results suggest that our two variables are not completely overlapping. Rather, we find that ideology has independent effects on policy support, which remain significant both when incorporating personal values in the model and controlling for a range of other factors. These results are also verified when examining support for single policy measures, rather than an index. Furthermore, consistent with theory, our results suggest that the effects of values and ideology differ between types of policy measures. Within the biospheric value domain, support is stronger for push measures that are generally understood as being more effective in governing individual behavior due to the amount of coercion they imply. Placement on the left-right ideological dimension also matters in preferences for different measures. Right-leaning individuals are more predisposed to support pull measures, where the individual's freedom of choice is retained and the direct involvement of the state is limited.

## 5. Conclusions

In this paper we have been concerned with the degree to which people's values and ideology affect support for pro-environmental policy measures. More substantially, we have asked if these two dominating factors basically capture the same characteristics, that is, if they actually measure the same thing. Although hypothesizing the contrary, we find that they both have significant effects on policy support and furthermore that these effects are independent. Thereby, we can conclude that they are, both simultaneously and in isolation, crucial variables determining pro-environmental policy support. Yet, in line with our hypothesis, we find that values and ideology differ in how and what they affect. Ideology has a significant effect on all policy measures aside from information. At the same time, there is a great variation in how different value dimensions affect support for the various policy measures that we have included in the study. It is also important to emphasize that neither values nor ideology explain the major part of the variance in support for pro-environmental policy measures in our models. Thus, adding further instruments and/or including additional personal and contextual variables can potentially help us better understand the variation that we have found in people's policy support.

In addition, when contemplating our results, it is of importance to note that the values-based models that we have used have not been developed to explain pro-environmental policy support specifically, but rather to explain pro-environmental behavior in general. Thus, elsewhere, it has been shown that by complementing values-based models with, for example, trust and policy-specific beliefs, pro-environmental policy support is more successfully explained [81,93]. As we have found that ideology also has independent effects on policy support, future studies should investigate what actually constitutes this effect: Simply, what are the causal mechanisms behind the effect of ideology on pro-environmental support? Our proposition is that this effect is moderated by policy-specific beliefs.

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85. The exact formulation of the question is "There are various ways to get ordinary people in Sweden to protect the environment. What do you think about the following suggestions?": "Impose consumption taxes on polluting consumption", "Impose more regulations and prohibitions to prevent people from harming the environment", "Subsidize environmentally friendly consumption", and "Provide more information and education to people about the benefits of protecting the environment."

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89. Survey items: “This section deals with the current state of the global environment and what the consequences may be. To what extent do you agree with the following statements?” “The damages already made to the natural environment may be irreparable”; “Eventually, most environmental problems will solve themselves”; “The global climate is about to change drastically”; “Statements such as that the present levels of environmental pollutants are changing the global climate are exaggerated”; “Thousands of different species will become extinct over the next few decades”. The scale ranges from 1 (do not agree at all) to 7 (agree completely). The items are reversed accordingly.
90. Survey items: “To what extent do you agree with the following statements about what causes environmental problems?” “My own lifestyle has contributed to the current environmental problems.” “This section lists a variety of statements. To what extent do you agree with each of them?” “I am co-responsible for protecting the world’s environment”; “I have no personal responsibility to protect the environment.” The scale ranges from 1 (do not agree at all) to 7 (agree completely). The items are reversed accordingly.
91. Survey items: “Below you will find a few statements about how a person can feel about the environment and about other people. To what extent do you agree with each statement?” “I believe I should consider the environment”; “I don’t care about the environmental problems”; “I feel bad if I don’t live environmentally friendly”; “I feel I have a moral duty to do something about the environmental problems”. The scale ranges from 1 (do not agree at all) to (agree completely). The items are reversed accordingly.
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94. Survey item: “People who live in the countryside generally have limited access to public transportation and are more dependent on cars, and people who state that they often go by car are more affected by an increased CO<sub>2</sub> tax”.
95. Income is coded into three different categories: Low-income earners (15,000 SEK/month or less), middle-income earners (15,001–25,000 SEK/month), and high-income earners (25,001 SEK/month or more).
96. Survey items “This section has nothing to do with you. Instead, it deals with what you believe other people do and how you believe they feel. To what extent do you agree with the following statements?” “Many people try to do something in daily life about the environmental problems”; “For the sake of the environment, many people frequently choose not to use a car”; “Most people don’t care about trying to live environmentally friendly”; “People generally try to limit their car use”; “Most people don’t care about trying to decrease their car use for the sake of the environment”; “Many people behave environmentally friendly to a large degree”. The index has a Cronbach’s alpha of 0.67. The scale ranges from 1–7.
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98. We have also performed ordered logit models, and the results from these point in the same direction as the OLS regressions.

