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The Role of Government in Protecting the Environment: Quality of Government and the Translation of Normative Views about Government Responsibility into Spending Preferences

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While it is becoming increasingly evident that environmental problems such as climate change and global warming constitute existential threats to human societies, these problems will very likely persist and even intensify unless governments enact effective and potentially costly environmental policies. However, government policies and spending ultimately rely on public support, thus underscoring the need to increase present knowledge about the processes underlying citizens' policy attitudes. In this study, we focus on the relationship between citizens' normative views about government responsibility and their support for government spending on the environment. While people who think that, as a general principle, it ought to be the government's responsibility to protect the environment should be more likely to support increasing government spending on the environment, we argue that this relationship is dependent on the quality of government. Using multilevel analysis and data from the most recent ISSP "Role of Government" module, we show that people who think that it is the government's responsibility to protect the environment are more likely to support increasing government spending on the environment in countries where government institutions are fair, effective, and non-corrupt. This suggests that the role of government in protecting the environment stretches far beyond designing effective environmental policies, since an overall ineffective and corrupt government appears to undermine public support for critical environmental policymaking.

Keywords Environmental protection; government responsibility; ISSP; quality of government (QoG); spending attitudes

While the global community has yet to successfully address large-scale environmental problems, such as climate change and global warming, considerable differences exist across societies with regard to environmental performance (Emerson et al. 2010; Hsu and Zomer 2016). In the literature, government is often ascribed a pivotal role in protecting the environment, for instance, through the implementation of environmental policies that protect the environment directly or solve environmental collective action problems (Mansbridge 2014). Meanwhile, the

prospects for governments to increase their efforts to protect the environment ultimately rely on public support, as wavering support might impose substantial constraints on governments' environmental policy ambitions. To facilitate the conditions under which effective and potentially costly environmental policies can successfully be enacted, it is therefore crucial to have a good understanding about the processes underlying citizens' support for environmental policy.

Public support for environmental policies should ultimately depend on the extent to which citizens think that, as a general principle, it ought to be the government's responsibility to protect the environment. As a result, people should be more likely to support government spending on the environment if they think that protecting the environment is government's responsibility in the first place. However, the translation of such normative views about government responsibility into concrete policy attitudes does not occur in a social and institutional vacuum. In fact, a growing number of studies show that environmental beliefs and values are far from always translated into corresponding behaviors and policy stances (Kollmuss and Agyeman 2002), and that considerable cross-national differences exist in this regard (Pisano and Lubell 2017; Tam and Chan 2018), suggesting that contextual factors at the country level play a crucial moderating role.

In this study, we use cross-national data to investigate the relationship between normative views on government responsibility to protect the environment and support for increasing government spending on the environment. We argue that the extent to which normative views about government responsibility for environmental protection translate into support for environmental policies depends on the quality of government institutions (see, e.g., Rothstein 2011). In particular, the translation of normative views into support for government spending on the environment should ultimately rely on whether government institutions that implement and enforce policies generally are effective, fair, and incorrupt. Hence, whereas citizens might hold as a general principle that governments should ideally be responsible for protecting the environment, they might still not support the notion that their own government should increase environmental spending, if government institutions are inefficient and corrupt. We therefore expect that the relationship between normative views and spending preferences is stronger in countries where the quality of government is high.

PREVIOUS RESEARCH

Previous research on environmental attitudes has identified a number of determinants at the individual level, such as more fundamental beliefs and values (Dietz, Stern, and Guagnano 1998; Stern and Dietz 1994). Many studies have shown that environmental issues such as climate change have become increasingly politicized in western countries (see, e.g., Carter 2014; McCright and Dunlap 2011). While public support for government spending on the environment historically has been detached from traditional political cleavages (Jacoby 1994), results from more recent studies, mainly from the United States, suggest that spending preferences have become increasingly polarized along partisan lines, as citizens who hold left-wing or liberal views are more likely to support environmental spending compared to those with right-wing or conservative views (e.g., McCright et al. 2014). Furthermore, research on attitudes towards environmental taxes, for instance, on fossil fuels, have similarly shown that public

support is politically polarized and intimately linked to political ideology (Fairbrother 2016; Harring, Jagers, and Matti 2017; Harring and Jagers 2013; Konisky et al. 2008).

In fact, the importance of political ideology is a reoccurring theme in the literature on environmental attitudes, as liberals and left-wing supporters are more likely to embrace many forms of environmentalism compared to conservatives and right-wing supporters (Dunlap 1975; Dunlap, Xiao, and McCright 2001). This is also in line with the wider literature on views about government responsibility, which shows that citizens to the left are comparably more likely to support government intervention through taxation and public spending across a wide range of domains, such as social welfare and the labor market (e.g., Feldman and Zaller 1992; Jaeger 2006).

However, most studies that investigate the influence of ideological orientations on environmental attitudes focus on individuals' political self-identification in terms of their subjective placement on a political left–right continuum (for an overview, see Harring et al. 2017). While political ideology in terms of different positions on the subjective left–right scale is often assumed to involve distinct normative views with regard to the scale and scope of government intervention (see, e.g., Inglehart and Klingemann 1976; see also Lipset and Rokkan 1967), very few studies on environmental policy attitudes focus on ideological orientations that explicitly refer to the role of government in protecting the environment. Meanwhile, several authors argue that individuals' subjective placement on the political left–right continuum constitutes a crude and to some extent elusive conceptualization of political ideology, since “left” and “right” are relatively vague categories lacking consistent and substantive meanings across time and place (Knutson 1998; see also Kumlin 2004). As a result, extrapolating normative views about the role of government based on subjective left–right placement can be problematic, thereby underscoring the advantage of directly measuring normative views about government responsibility.

Previous research has shown that citizens' support for government spending on the environment displays considerable cross-national variation (Rasinski et al. 1994). Meanwhile, relatively few cross-national studies exist that focus on the relationship between more concrete ideological orientations, such as normative views about the role of government, and support for government spending on the environment. Several studies using left–right orientation and other broad measures of ideology show that their effects on environmental attitudes are often stronger in certain countries (Fairbrother 2016; McCright et al. 2016; see also Tesler 2018). This suggests that the impact of more concrete ideological orientations such as normative views about the role of government very likely also differ cross-nationally. However, very few studies exist that investigate the role of contextual factors at the country level in moderating the relationship between ideological orientations and more concrete environmental policy attitudes.

Meanwhile, previous research has identified direct linkages between subjective perceptions of government institutions and policy support, which raises the question of whether these linkages are, at least partly, the result of a moderating influence of institutions on the relationship between ideological orientations and policy support. In fact, many studies have shown that public support for environmental policies to a large extent depends on citizens' trust in politicians and the political system. For instance, studies have found that support for environmental taxes is generally stronger among citizens and in countries with high levels of political trust (Fairbrother 2016; Harring and Jagers 2013; Kollmann and Reichl 2015). These studies confirm the more general findings in the literature on policy attitudes, namely, that political trust is vital for policy support (see, e.g., Rudolph and Evans 2005), since

people have to trust that politicians will not act irresponsibly, for example, when handling taxpayers' contributions (see also Hetherington 2005).¹

The finding that political trust at the country level has an independent effect on policy attitudes, even when controlling for political trust at the individual level (e.g., Fairbrother 2016), suggests that the actual trustworthiness and demonstrated competence of politicians and the political system matter for policy support (e.g., Levi and Stoker 2000). However, due to the focus on politicians and the political system (political trust), previous cross-national research has largely neglected the role of the legal and bureaucratic institutions responsible for delivering and implementing policies. While political trust should be particularly decisive regarding public support for environmental tax policies (e.g., carbon taxes), since people have to trust that politicians collect and handle taxpayers' contributions responsibly, we argue that support for government spending on environmental policies should depend more on the characteristics of government institutions that implement and enforce policies. In a recent contribution, Arpad (2018) provides support for this notion by showing that trust in the government's capacity to successfully implement policies is crucial for people's willingness to support spending on environmental policies. Yet, since the author studied people's trust in these institutions it is not clear whether differences in spending support merely reflect subjective perceptions or whether support depend on actual institutional performance.

Quality of Government

In the “good governance” literature, an increasingly prominent perspective focuses on the “quality of government” (QoG). According to this perspective, high-quality government is characterized by impartial, fair, efficient, and incorrupt institutions that exercise government authority (Holmberg, Rothstein, and Nasiritousi 2009; Rothstein 2011). These institutions thus constitute the “output” side of the political system, ranging from the legal system and the police, to the bureaucratic system and its public officials. While there has been some debate in the democratic theory literature on the importance of distinguishing the institutions that exercise government authority (i.e., QoG) from other democratic institutions (e.g., legislative institutions), empirical evidence is mounting that demonstrates a surprisingly weak link between legislative and implementing institutions, thus suggesting that QoG constitutes a unique feature of the political system (Rothstein 2011).² Furthermore, studies have tied QoG to a wide range of desired social and economic outcomes, such as public health, economic prosperity, and environmental sustainability (see, Holmberg, Rothstein, and Nasiritousi 2009).

However, with regard to sustainability, the results are not clear-cut. For instance, while some studies find that national levels of corruption are associated with low scores on the by now well-established Environmental Sustainability Index (Morse 2006), other studies find the opposite relationship between corruption and the Ecological Footprint index (Ewers and Smith 2007). These results are hardly surprising, since these two indexes are based on very different conceptualizations of “sustainability” (Böhringer and Jochem 2007). As a result, the quality of government institutions very likely has different effects depending on the particular aspects of sustainability in focus (e.g., improved local environmental conditions vs. reduced global carbon footprint). Hence, the underlying mechanism tying the quality of government institutions to sustainability and other favorable environmental outcomes remains under-theorized and empirically unexplored.

We argue that one important way in which QoG could be linked to favorable environmental outcomes of societies, such as different indicators of sustainability, is through its relation to public support for environmental policy. Previous research has shown that certain aspects of “high-quality government,” such as lack of corruption, have been associated with people's willingness to make economic sacrifices to protect the environment (Harring 2013) as well as more positive public perceptions about the effectiveness of environmental policy instruments (Harring 2014; see also Harring 2016). While corruption constitutes a narrow conceptualization of QoG (Rothstein 2011), the results from these studies still suggest that QoG can have important implications for public support for government spending on the environment.

In fact, previous studies have tied government spending in other areas to the quality of government. For instance, Rothstein (2011) finds that welfare state spending levels are clearly related to QoG, suggesting that public support for government spending in general increases with higher government quality. More importantly here, in a study focusing on the influence of perceived quality of government on social spending preferences, Svallfors (2013) finds that public perceptions not only have a direct effect on support for government spending, but that these perceptions also moderates the effect of normative views (egalitarianism) on social spending preferences. This suggests that QoG is a potentially crucial moderator of the relationship between more fundamental normative (i.e., ideological) orientations and concrete spending preferences.

HYPOTHESES

Based on our review of the literature, we expect to find a generally positive relationship between normative views about government responsibility for protecting the environment, on the one hand, and public support for increasing government spending on the environment, on the other. However, we also expect that the strength of this relationship varies across countries that differ in terms of government quality. In countries where government institutions are comparably inefficient and corrupt, citizens should be less likely to support increasing government spending, even though they think that government should ideally be responsible for protecting the environment. We therefore derive the following hypotheses:

H1: There is a general positive effect of normative views about government responsibility for protecting the environment on support for increasing government spending on the environment (Individual-level effect).

H2: The effect of normative views on support for spending is stronger in countries with high-quality government (Cross-level interaction effect).

THE STUDY

To investigate the hypothesized moderating influence of QoG (at the country level) on the individual-level relationship between citizens' normative views on government responsibility for protecting the environment and their support for government spending on the

environment, we used multilevel analysis (MLA). This type of regression technique is suitable when analyzing data collected from individuals as well as their contexts, i.e., hierarchical data. In MLA it is not only possible to study the effects of both individual- and country-level variables on an individual-level outcome simultaneously, but, more importantly, also possible to study the cross-level interaction between individual- and country-level predictors (Snijders 2011). Hence, MLA enabled us to study not only the effect of normative views about government responsibility on spending preferences, but also the moderating influence of QoG on this effect cross-nationally.

For the individual-level variables, we used data from the module “Role of Government V” in the International Social Survey Program (ISSP). The survey data were collected predominantly in the year 2016 and constitute representative samples for the adult population in almost 30 countries (ISSP Research Group 2018). The countries included in our analyses were (abbreviations in parenthesis): Chile (CL), Croatia (HR), Czech Republic (CZ), Denmark (DK), Finland (FI), France (FR), Germany (DE), Hungary (HU), Iceland (IS), Israel (IL), Japan (JP), Latvia (LV), Lithuania (LT), New Zealand (NZ), Norway (NO), Philippines (PH), Slovakia (SK), Slovenia (SI), South Korea (KR), Spain (ES), Sweden (SE), Switzerland (CH), Taiwan (TW), Thailand (TH), United Kingdom (UK), and United States (US).³ In Table 1 we present country sample sizes (*n*) and country means for the individual-level variables, as well as scores for the country-level indicators.

To study the relationship between normative views about the responsibility of government to protect the environment and support for government spending on the environment, we used two items from the ISSP. As an indicator of support for government spending on the environment, we used an item asking respondents whether they “Would like to see more or less government spending” on the environment. The item responses were coded so that higher values indicate stronger support for increasing spending (1 = “Spend much less,” 2 = “Spend less,” 3 = “Spend the same as now,” 4 = “Spend more,” and 5 = “Spend much more”).⁴

As an indicator of normative views about government's responsibility for environmental protection, we used an item asking respondents the following question: “On the whole, do you think it should or should not be the government's responsibility to impose strict laws to make industry do less damage to the environment?” The available item responses were coded so that higher values indicate more positive views on government responsibility (1 = “Definitely should not be,” 2 = “Probably should not be,” 3 = “Probably should be,” and 4 = “Definitely should be”).

At the individual level, we also included a set of background control variables. The original dichotomous variable “sex” was coded so that the higher value represents “woman” (0 = “man,” 1 = “woman”). The variable age was used as a continuous variable indicating respondent's age, in years. Finally, the variable educational attainment was coded so that it ranges from 1 to 7, where 1 represents “No formal education” and 7 represents the highest level of formal education (i.e., university degree).⁵

To study the moderating influence of the quality of government, we used the International Country Risk Guide (ICRG) scores from the QoG database (Teorell et al. 2018). The ICRG index is a composite measure based on three components of government quality. The first component concerns corruption in the political system, focusing on how it inserts instability

TABLE 1
Abbreviations, Country Sample Sizes (*n*), and Variable Means for 26 Countries

<i>Country</i>	<i>Abbrev.</i>	<i>Number of respondents (n)</i>	<i>Should be govt.'s resp. to protect env.</i>	<i>Support for govt. env. spending</i>	<i>QoG</i>	<i>EPI</i>	<i>GDP per capita</i>	<i>Public spending</i>
Chile	CL	1416	3.74	3.71	0.75	22.8	69.9	21.6
Croatia	HR	1026	3.56	3.79	0.62	22.7	62.2	38.6
Czech Republic	CZ	1400	3.27	3.32	0.67	33.5	81.5	33.4
Denmark	DK	1138	3.42	3.51	0.97	48.7	76.9	40.6
Finland	FI	1186	3.30	3.31	0.97	42.1	75.7	40.6
France	FR	1501	3.53	3.35	0.75	40.6	71.1	48.4
Germany	DE	1689	3.41	3.73	0.89	47.8	80.5	27.9
Hungary	HU	1000	3.42	3.75	0.64	26.2	70.3	43.5
Iceland	IS	1322	3.58	3.64	0.94	47.5	76.5	30.5
Israel	IL	1248	3.37	3.68	0.81	35.9	65.8	37.0
Japan	JP	1611	3.24	3.56	0.86	40.7	72.4	17.1
Korea (South)	KR	1051	3.36	3.72	0.69	35.2	63.8	24.9
Latvia	LV	1002	3.28	3.19	0.63	24.5	64.1	43.9
Lithuania	LT	1006	3.29	3.24	0.57	28.8	61.3	9.4
New Zealand	NZ	1350	3.43	3.57	0.94	37.9	76.4	31.9
Norway	NO	1260	3.37	3.34	0.97	61.7	78.0	38.1
Philippines	PH	1200	3.40	3.84	0.53	7.3	44.0	14.1
Slovakia	SK	1150	3.47	3.67	0.61	29.5	74.5	41.0
Slovenia	SI	1024	3.59	3.68	0.69	31.5	76.4	42.1
Spain	ES	1834	3.59	3.60	0.75	34.8	79.8	20.6
Sweden	SE	1140	3.30	3.52	0.97	47.9	78.1	31.9
Switzerland	CH	1066	3.20	3.58	0.89	63.7	87.7	17.2
Taiwan	TW	1966	3.66	3.80	0.69	47.9	62.2	23.0
Thailand	TH	1475	3.42	3.78	0.42	16.2	52.8	18.6
United Kingdom	UK	1563	3.26	3.41	0.86	41.6	77.4	38.2
United States	US	1390	3.39	3.41	0.81	56.4	67.5	22.7

Notes: Abbreviations, country sample sizes, means for main individual-level variables (views on govt. responsibility and support for spending), main contextual variable (quality of government (QoG)), and country controls (EPI, GDP, and public spending); QoG (ICRG) scores range 0–1, where values closer to 1 are indicative of high-quality government; EPI scores range 0–100, where 100 is indicative of high performance. The measure of GDP per capita is adjusted for purchasing power parities (PPP) and reported in thousand US dollars. Public spending is measured as share (%) of GDP.

into the political process and undermines government efficiency. The second component concerns law and order, in terms of the strength and impartiality of the judicial system as well as the extent to which laws are implemented and abided by. The third component concerns the quality of bureaucracy, in terms of its strength and autonomy in delivering government services. The QoG (ICRG) index is scaled 0–1, where higher scores (close to 1) are indicative of a higher government quality, that is, the lack of corruption combined with an impartial legal system and an autonomous bureaucracy.

To ensure that the relationship between normative views and spending preferences is moderated by QoG, and not by other contextual factors, we also included a set of country-level controls. Since the demand for further government spending on the environment at least to some extent should depend on the actual efforts of government to protect the environment,

we included the Environmental Performance Index (EPI). The EPI is a composite measure based on 24 indicators capturing the environmental performance of government policies with regard to environmental health and ecosystem vitality (Wendling et al. 2018). EPI scores range from 0 to 100, where high scores indicate high government performance.

However, since the opportunities for governments to protect the environment are also contingent on the current state of the economy, we also included GDP per capita. We retrieved GDP data for the year 2015 from the World Bank. To ensure cross-national comparability, we selected GDP per capita adjusted for purchasing power parities (PPP), in thousand US dollars. Additionally, since overall government spending can vary across countries, we also control for public spending as percentage of total GDP. Moreover, previous research suggests that overall public spending and QoG are correlated (Rothstein and Teorell 2008), thus strengthening the case for taking overall public spending into consideration when assessing the effects of QoG. Given also that environmental spending preferences to some extent depend on general spending preferences, and that actual spending level in a country very likely influences these preferences, it appears crucial to take overall spending into account. We therefore retrieved data on public spending as percentage of GDP for the year 2015 from the World Bank.⁶

RESULTS

Initially, we examined the relationship between normative views and spending preferences cross-nationally. In Figure 1, we report the within-country correlations (at the individual level) with regard to this relationship (gray bars).

The results in Figure 1 provide preliminary support for our first hypothesis (H1), namely, that there is a general positive individual-level effect of normative views on spending support. Moreover, the bar chart also displays clear cross-national differences in the strength of the relationship between normative views and spending preferences. While the correlation is around or above .4 in many countries (e.g., Sweden, Norway, and the UK), the correlation is merely around or below .1 in several other countries (e.g., the Philippines, Thailand, and Lithuania). Hence, while most people in the countries studied agree that the government should be responsible for protecting the environment (see Table 1), the extent to which these normative views are translated into support for increasing government spending on the environment varies considerably across countries.

To examine whether these cross-national differences in the strength of the relationship between normative views and spending preferences are related to the quality of government, we plotted the within-country correlations (y -axis) against national QoG scores (x -axis). Figure 2 shows that there is a strong relationship between the within-country correlations (between normative views and spending preferences) and the quality of government ($R^2 = .73$). In countries with high QoG scores, the correlation is substantially stronger than in countries with low scores. These results thus indicate that people who think that it is the responsibility of the government to protect the environment are more likely to support increasing government environmental spending in countries where the quality of government institutions is high. This suggests the existence of a cross-level interaction, where the quality of

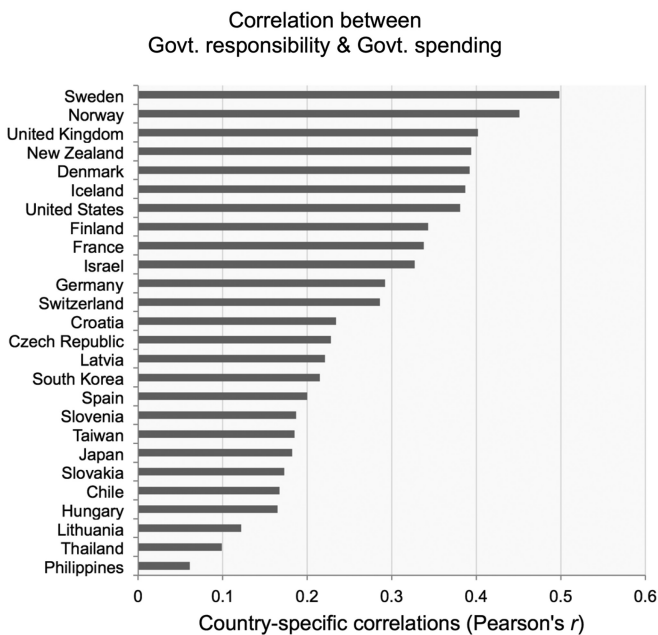


FIGURE 1 Correlation between normative views on government responsibility for environmental protection and support for increased government spending on the environment, by country.

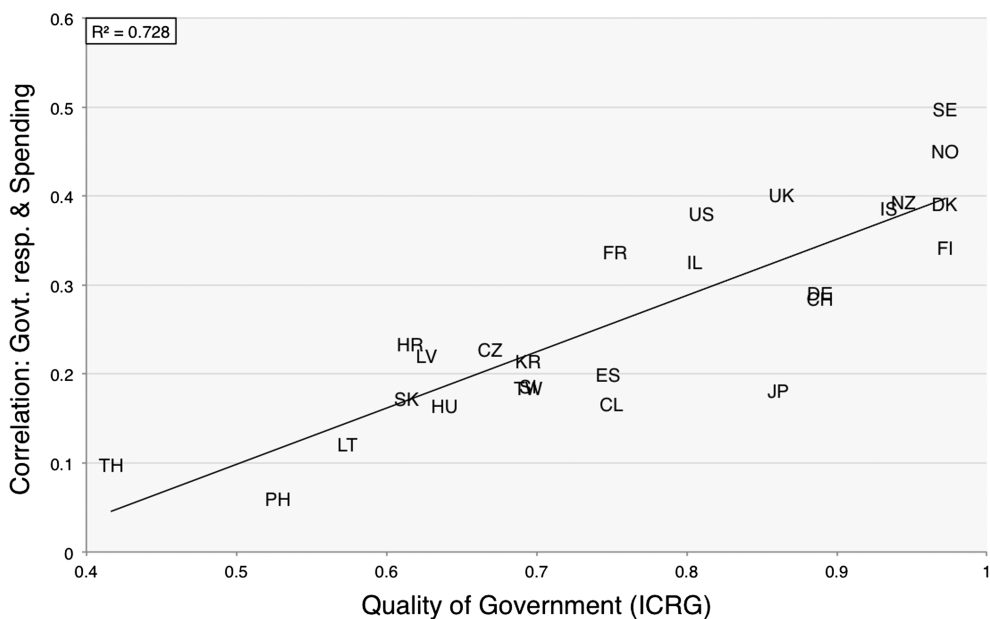


FIGURE 2 Scatterplot for the relationship between the strength of the responsibility-spending correlation and the quality of government (QoG).

TABLE 2
Multilevel Models of Support for Government Spending on the Environment

	M1		M2		M3		M4		M5		M6	
	b	(S.E.)	b	(S.E.)	b	(S.E.)	b	(S.E.)	b	(S.E.)	b	(S.E.)
<i>Individual level (fixed effects)</i>												
Intercept	2.407***	(0.112)	4.738***	(0.318)	4.437***	(0.415)	4.530***	(0.317)	4.823***	(0.471)	5.020***	(0.287)
Woman	-0.004	(0.009)	-0.004	(0.009)	-0.004	(0.009)	-0.004	(0.009)	-0.004	(0.009)	-0.004	(0.009)
Age	-0.003***	(0.000)	-0.003***	(0.000)	-0.003***	(0.000)	-0.003***	(0.000)	-0.003***	(0.000)	-0.003***	(0.000)
Educational attainment level 1-7	0.050***	(0.003)	0.050***	(0.003)	0.050***	(0.003)	0.050***	(0.003)	0.050***	(0.003)	0.050***	(0.003)
Govt. resp. views 1-4	0.335***	(0.027)	-0.260***	(0.074)	-0.257**	(0.075)	-0.214**	(0.073)	-0.250*	(0.109)	-0.324***	(0.067)
<i>Country level</i>												
Quality of government (ICRG) 0-1			-3.039***	(0.407)	-1.977**	(0.580)	-2.090**	(0.624)	-2.938***	(0.582)	-2.754***	(0.357)
GDP (per capita)					-0.017**	(0.006)	-0.014	(0.007)				
Environmental Performance Index (EPI)					0.009	(0.008)			-0.002	(0.009)		
Public spending (% of GDP)					-0.017**	(0.005)					-0.016**	(0.005)
<i>Cross-level interactions</i>												
Govt. resp. views * Quality of government			0.775***	(0.094)	0.772***	(0.096)	0.567***	(0.144)	0.787***	(0.135)	0.708***	(0.083)
Govt. resp. views * GDP							0.003	(0.002)				
Govt. resp. views * EPI									-0.000	(0.002)	0.004**	(0.001)
<i>Random effects</i>												
SD Residual	0.815***	(0.003)	0.815***	(0.003)	0.815***	(0.003)	0.815***	(0.003)	0.815***	(0.003)	0.815***	(0.003)
SD Intercept	0.547***	(0.080)	0.292***	(0.048)	0.224***	(0.039)	0.270***	(0.045)	0.292***	(0.048)	0.242***	(0.042)
SD Govt. resp. views	0.133***	(0.020)	0.064***	(0.011)	0.066***	(0.012)	0.059***	(0.011)	0.064***	(0.011)	0.052***	(0.010)

(Continued)

TABLE 2
(Continued).

Log likelihood	-38076.8	-38047.7	-38041.9	-38045.0	-38047.6	-38040.8
N	31258	31258	31258	31258	31258	31258
Number of countries	26	26	26	26	26	26

Notes: M1 ... M6 = Model 1 ... Model 6; $***p < 0.001$; $**p < 0.01$; $*p < 0.05$. The dependent variable, support for government spending on the environment, ranges 1–5, where 5 indicates support for government to spend much more. The main independent variable at the individual level, i.e., views on government responsibility for protecting the environment (Govt. resp. views), ranges 1–4, where 4 indicates that “government definitely should be responsible.” The gender variable (Woman) was coded so that 0 = “man,” 1 = “woman.” The variable age was used as a continuous variable indicating respondent’s age, in years. Educational attainment level was coded so that it ranges from 1 to 7, where 1 represents no formal education, while 7 represents the highest formal education level (i.e., university degree). QoG (ICRG) scores ranges 0–1, where values closer to 1 are indicative of high-quality government; EPI scores range 0–100, where 100 is indicative of high performance. The measure of GDP per capita is adjusted for purchasing power parities (PPP) and reported in thousand US dollars. Public spending is measured as share (%) of GDP. Main cross-level interaction effect (Govt. resp. views * Quality of government) highlighted with light gray background. Due to the small- n problem in multilevel analysis, where a small number of countries combined with an overly ambitious model specification can yield biased estimates (see, e.g., Bryan and Jenkins 2016), we control for additional country-level moderators (cross-level interaction effects) each in separate models.

government institutions moderates the effect of individuals' normative views on their spending preferences.

In the next step, we formally tested the statistical significance of this cross-level interaction and estimated the effect size in a series of multilevel regression models where we also controlled for a range of relevant individual- and country-level factors. The results of these regression models are presented in Table 2. In Model 1, only the main independent variable (normative views about government responsibility for protecting the environment) and the individual-level background variables (gender, age, and education) were included. The results show that the positive fixed effect of normative views about government responsibility is statistically significant and substantial ($b = 0.335$; $p < .001$). This means that the difference between responding "Definitely should" and "Definitely should not" be the government's responsibility results in approximately a one-unit change on the dependent variable measuring spending preferences. This clearly confirms our first hypothesis (H1) that there is a general positive individual-level effect of normative views about government responsibility to protect the environment on support for government spending.

Moreover, the random slope for normative views shows that there are statistically significant ($p < .001$) differences in the relationship between these views and spending preferences across countries ($SD = 0.133$). This confirms our expectation that the strength of the effect of normative views on spending preferences differs cross-nationally. Given the variability in the effect of normative views on spending preferences, it makes sense to proceed by examining the potentially moderating influence of QoG and other contextual factors in order to explain cross-national differences in this individual-level relationship.

In Model 2, we include our main cross-level interaction term between normative views and the country-level variable measuring QoG (ICRG). The results show that the cross-level interaction effect is statistically significant and positive ($b = 0.775$; $p < .001$). Considering that QoG theoretically ranges between 0 and 1, where observations for individual countries range between 0.42 and 0.97, the effect can be considered substantial in size. Furthermore, we find that the variance component (random slope) of normative views about government responsibility is reduced by almost half (48.1%) from 0.133 to 0.064, suggesting that QoG is a crucial country-level moderator of the individual-level effect of normative views on spending preferences. Hence, in high-QoG countries, people who think that the government should ultimately be responsible for protecting the environment are more likely to support increasing government spending on the environment.

In Model 3, we estimate the cross-level interaction term, while controlling for the contextual factors GDP, EPI, and public spending. In Models 4 to 6, we estimate our main cross-level interaction term, while simultaneously including competing cross-level interaction terms between normative views and each of the contextual factors, separately. The results from these models show that QoG consistently has a statistically significant ($p < .001$) moderating effect in all of the models ($b = 0.57$ – 0.79). Regarding the cross-level interactions involving the other contextual factors, only public spending (Model 6) has a significant, albeit weak moderating effect ($b = 0.004$; $p < .01$). This means that, in countries with higher levels of public spending, normative views are more likely to translate into support for increasing government spending. More importantly, while the main cross-level interaction term (based on QoG) fluctuates somewhat across Models 4–6, the inclusion of additional cross-level

interaction terms based on GDP, EPI, and public spending does not substantially alter the statistical significance or the interpretation of QoG as a crucial moderator of the relationship between normative views and spending preferences. Hence, the results of the multilevel models confirm our hypothesis (H2) that the effect of normative views about government responsibility for environmental protection on spending preferences is stronger in countries with high-quality government institutions.

Finally, in [Figure 3](#), we graphically illustrate the main cross-level interaction effect from the multilevel analysis in a marginal effects plot. The plot shows the individual-level effect of people's normative views on their spending preferences at different levels of QoG, thereby simplifying the interpretation of the cross-level interaction effect. The y-axis indicates the change in spending preferences for a one-unit increase in the item measuring normative views, while the x-axis represents the level of QoG across countries. The plotted line with 95% confidence intervals (gray area) shows how the effect changes depending on the level of QoG.

The plot shows that the effect of normative views in low-QoG countries (around .5 and below) is about 0.1, while this effect is above 0.4 in high-QoG countries (around .9 and above). This means that, in high-QoG countries such as Sweden and Norway, a one-unit increase in the item measuring normative views on government responsibility for protecting the environment is associated with almost a half-unit increase in the item measuring preferences for government spending on the environment. In low-QoG countries, such as the Philippines and Thailand, a corresponding increase in normative views only yields a negligible effect of about 0.1. Moreover, the rather narrow confidence intervals suggest that there are significant differences in the effect of normative views on spending preferences, even

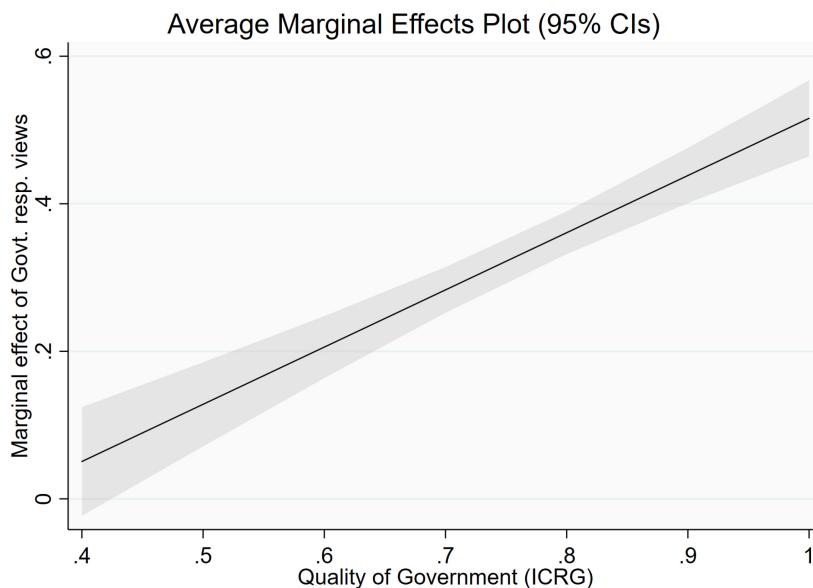


FIGURE 3 Marginal effect of views about government responsibility on support for government spending on the environment for different levels of quality of government (QoG).

between countries with relatively small differences in the level of QoG. In conclusion, the plot clearly demonstrates that normative views have a substantial effect in high-QoG countries, thus supporting the notion that these views are considerably more likely to translate into support for increased government spending on the environment in countries where government institutions are impartial, effective, and incorrupt.

DISCUSSION

In this study, we have shown that people who think that it is the responsibility of government to protect the environment are also generally more likely to support increasing government spending on the environment. While this is in itself a fairly trivial proposition, our results suggest that it comes with an important caveat, namely, that the extent to which normative views about government responsibility are translated into preferences for increased spending crucially depends on the quality of government institutions. In other words, people who think that it is the responsibility of government to protect the environment are more likely to support increasing government spending on the environment in countries where the quality of government is high, that is, where government institutions are impartial, effective, and incorrupt. Conversely, in countries where QoG is low, people who think that it should be the responsibility of government to protect the environment are not substantially more supportive of environmental spending than those who do not think that government should ultimately be responsible for protecting the environment. Our results therefore suggest that low levels of QoG constitute potentially crucial obstacles for implementing costly environmental policies.

Our study constitutes an important contribution to the literature on environmental policy preferences, which has mainly focused on subjective measures such as political trust to explain public support. Political trust and QoG can both be viewed as indicators of a well-functioning government, yet they capture different characteristics of government. First, while people expect that politicians and political parties are partial, they do not have these expectations of the institutions that implement public policies. Rather, people expect the institutions that uphold the laws and deliver public services to do so in an impartial manner (Rothstein 2011). Second, while people can distrust politicians and the parliamentary political system, government institutions that implement laws and policies can still be impartial, effective, and trustworthy. Hence, levels of political trust do not necessarily reflect the overall quality of government institutions. It is therefore important to distinguish between legislative institutions such as political parties or the parliament and implementing institutions such as the legal system or the public administration, and to recognize that both can have important implications for people's environmental policy support. While previous research has shown that trust in politicians and the political (parliamentary) system matters for policy support, we contribute to the literature by showing that the quality of implementing government institutions is crucial for the formation of people's environmental policy attitudes. As a result, we argue that QoG captures unique features of the national context that future research on environmental attitudes and behavior should devote increasing attention to.

Our results also confirm the findings from previous studies identifying a gap between environmental concern (or other related attitudes) and pro-environmental behaviors (see

Kollmuss and Agyeman 2002), and the cross-national studies showing that the attitude-action gap is moderated by contextual factors (Johansson Sevä and Kulin 2018; Pisano and Lubell 2017; Tam and Chan 2018). However, whereas most of these studies focus on pro-environmental behavior as the primary outcome, we show that there also appears to be a gap between ideology and policy support, whereby normative views about government are not necessarily translated into corresponding support for environmental policy. In line with previous studies, we show that this ideology-support gap is highly contingent on contextual factors tied to the national context.

Our study also contributes to the cross-national research on the influence of political ideology on policy support (e.g., Fairbrother 2016; McCright et al. 2016). While much of previous research has used the contentious left–right scale or other broad measures of ideological orientations, we have focused on a more limited but crucial aspect of political ideology, namely, normative views about the role of government. Another benefit with our approach is that we have focused on normative views about the role of government specifically in relation to the environment. We thereby avoid the vagueness of the subjective left–right scale, which can be particularly problematic in cross-national research.

Furthermore, in contrast to previous studies on support for environmental policy, which to a great extent have focused on the influence of subjective orientations in relation to politicians and the political system, such as political trust (e.g., Fairbrother 2016; Haring and Jagers 2013; Kollmann and Reichl 2015), we find that the actual quality of government institutions that exercise public authority and implement policies matters for the translation of citizens' normative views into policy support. In contrast to the few studies that focus on more narrow aspects of QoG, such as corruption (e.g., Haring 2014), we find a clear impact of the overall quality of government. Finally, while previous studies that focus on QoG primarily investigate its direct effect on citizens' policy support, we provide evidence for an interaction effect where QoG constitutes a crucial moderator in the relationship between normative views about government responsibility and support for government spending in relation to the environment.

We identify a number of potential limitations, which require attention. First, some might raise concerns about endogeneity issues and therefore invoke skepticism about studying the effects of certain attitudes on other attitudes. While this might indeed constitute a valid criticism that often applies in survey research, we believe that there is a strong case for assuming that normative views about government responsibility represent more fundamental ideological orientations that are causally prior to spending preferences. It simply makes little sense for individuals to support increasing government spending on the environment if they do not think that it should be the government's responsibility to protect the environment in the first place. Moreover, according to Hainmueller and Hopkins (2014:243), “one answer to concerns about endogeneity is to identify sets of attitudes that are quite stable, and perhaps less likely to be endogenous.” Considering the apparent stability of normative views about the government's responsibility to protect the environment, given that the large majority of people in most countries hold these views (see Table 1), we believe that endogeneity problems are of less concern here.

Second, another potential criticism is that there might be additional factors omitted in our analysis that could prove important in explaining cross-national differences in the strength of

the relationship between normative views and spending preferences. Considering that previous studies have demonstrated that there is a relationship between political trust and policy attitudes, it would have been fruitful to include a standard measure of political trust in the analyses. However, the items included in the ISSP that measured people's perceptions in this regard were too narrow to capture political trust similar to previous research. Future studies on environmental policy attitudes should therefore (when possible) aim to include characteristics of, and perceptions about, both legislative and implementing institutions, for instance by contrasting the effects of QoG against those of political trust.

Furthermore, previous research on environmental attitudes and behavior has identified generalized trust as an important determinant at both the individual and the country level (Sønderskov 2008; 2011; Tam and Chan 2018). Unfortunately, data on generalized trust were not available in the ISSP module used in this study. However, since a growing literature views widespread generalized trust as an outcome of high-quality government institutions (Charron and Rothstein 2018; Rothstein 2011; Rothstein and Stolle 2008), we do not expect that the inclusion of generalized trust would alter the interpretation of our main results, other than that it partly mediates the influence of QoG on the relationship between normative views and spending preferences.

Third, while the item capturing normative views on government responsibility for protecting the environment focuses exclusively on the environmental damage of “industry,” one could argue that it does not necessarily capture normative views about government responsibility for environmental protection in relation to other actors that behave in environmentally harmful ways. The item also concerns a specific mode of environmental protection, namely, by “imposing strict laws,” while disregarding other potential means of environmental protection. Due to the lack of variables in the ISSP dataset, a wider operationalization of “government responsibility for environmental protection” was not possible. However, we believe that there are good reasons to expect this variable to be a reasonably good proxy for normative views about government responsibility for environmental protection in general. Since industry is responsible for a substantial share of all greenhouse gas emissions and other types of pollution, it is a central actor in terms of its environmental consequences. Therefore, people's general views on government responsibility for environmental protection should very likely manifest especially in relation to industry. Furthermore, since initiating and implementing laws constitutes the main instrument available to governments to regulate the actions of different actors in society, we argue that the item not only captures respondents' more specific views on government legislation, but also very likely constitutes a suitable indicator of views on government responsibility for environmental protection more generally.

As we have demonstrated how and why people can fail to support increasing government spending on the environment, even when they think that it should be the government's responsibility to protect the environment, our study constitutes a contribution to the understanding of the role of government in solving environmental collective-action problems (Mansbridge 2014; Ostrom 1998). However, our findings suggest that the role of government in protecting the environment stretches far beyond the design and enactment of effective environmental policies; for countries to successfully implement environmental policies with broad public support, government institutions in general (e.g., public service providers, the bureaucratic and the legal systems as well the police) have to be impartial, efficient, and

incorrupt. If government institutions do not exhibit these traits, even citizens who, as a general principle, think that it should be the government's responsibility to protect the environment might still oppose increasing public spending on the environment.

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NOTES

1. These studies are in line with other research showing that different forms of trust matter for environmental policy support. For instance, several studies have found that generalized or interpersonal trust is associated with the general willingness to make economic sacrifices to protect the environment (Fairbrother 2016) as well as support for concrete policies such as carbon taxes (Harring and Jagers 2013). Furthermore, still other studies have shown that generalized trust is also linked to citizens' efforts to influence politicians and political decision-making in a more environmentally friendly direction through civic engagement and participation (Johansson Sevä and Kulin 2018; Tam and Chan 2018).

2. In a study of the social and political foundations of sustainability, Whitford and Wong (2009) fail to find a clear relationship between democratization and broad measures of sustainability, concluding that the role of political systems for the sustainability of societies is often overstated. However, the lack of a relationship between the degree of democratization and sustainability does not necessarily imply that the political system is irrelevant for the environmental outcomes of societies. Given that the degree of democratization in a society does not necessarily reflect the quality of government institutions, since there are no guarantees that democratic institutions will adhere to the principles of impartiality and fairness, a case can be made that other aspects of the political system (e.g., QoG) can have important consequences for sustainability and other environmental performance indicators, irrespective of the degree of democratization. In fact, previous studies on the relationship between democratization and government quality often find that this relationship is surprisingly weak (Montinola and Jackman 2002; Sung 2004), thus suggesting that the quality of government institutions constitutes a unique feature of the political system with potentially crucial implications for environmental outcomes.

3. In the analysis, we identified a small number of countries that were assessed as problematic. In the original ISSP dataset, the countries Georgia and Venezuela were included. However, due to missing QoG data, we excluded Georgia from our analyses. Moreover, due to nonsensical outlier issues with respect to certain items, we also excluded Venezuela.

4. While the item capturing spending preferences (dependent variable) is an ordinal-scale variable, we used it as an interval-scale variable in the linear multilevel regression analyses. In survey research, this is common practice, given that the variable is normally distributed, which we confirmed based on pooled as well as within-country frequency distributions of the dependent variable (not reported here).

5. In a series of analyses (not reported here) we also tested additional individual-level controls (e.g., political trust, perceived corruption among politicians and public officials, political ideology/party voting); yet, the inclusion of these variables did not affect our main results. As the number of non-responses was high in the political ideology/party voting variable, and the wording of other items was far from ideal, we did not include them in the reported analysis.

6. Data from the World Bank were retrieved from <https://data.worldbank.org>. Due to missing data in the World Bank datasets, GDP per capita (PPP adjusted) for Taiwan was retrieved from the International Monetary Fund (<https://www.imf.org/external/pubs/ft/weo/2015/01/weodata/index.aspx>), while public spending for Taiwan (2014) was retrieved from the Heritage Foundation's Index of Economic Freedom (<https://www.heritage.org/index/explore?view=by-variables>).

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