

# Pro-Environmental Behavior and Environmental Protection Attitudes: A Cross-National Analysis, ISSP 2010

## Introduction

The focus of this research was to examine which factors influenced various international citizens’ attitudes towards protecting the environment. In particular, I assessed whether pro-environmental behavior (PEB) and perceived danger from modern technological consequences (PDE) affected people’s willingness to make financial sacrifices for the environment (WPE). If these are significant predictors of respondents’ willingness, then future research can assess intra-national influences upon PEB and PDE. Legislators may take these findings into account when trying to enact environmental policies that rely on public spending.

## Research Question

Are pro-environmental behavior, perceived danger of modern technological consequences, and trust in government significant predictors of willingness to protect the environment through financial sacrifices?

## Data

- ISSP: Environment III - ISSP 2010
- Germany, Norway, Great Britain, United States
- Valid N Listwise: 2763
- WPE scale: 3 ordinal questions
- PEB: 10 questions, split into 6 question PEB Daily scale and 4 question PEB Activism scale
- PDE scale: 7 ordinal questions

## Methods

- WPE, PEB, PDE constructed as summated indices of reverse coded variables; had high Cronbach’s alphas.
- Scales for independent variables used for regression constructed from standardized versions of individual variables
- Factor analysis of PEB variables resulted in two factor loadings, thus splitting PEB into PEB Daily and PEB Activism
- For PEB scales used in the OLS regression analysis, they were further specified, weighted with factor loading coefficients
- One Way ANOVA was used to find differences in variable means between countries

Table 1. Descriptive Statistics for Variables in the Analysis of Willingness to Protect the Environment: ISSP 2010 - Environment.			
Variable	Description	Mean	S.D.
<i>Focal Dependent Variable</i>			
Willingness to Protect the Environment	How willing R is to accept ___ for the sake of the environment (Higher Taxes / Higher Prices / Lower Living Standards) (0=Not at all willing, 1=Very willing for all three) n=4724	.44	.25
<i>Focal Independent Variables</i>			
Pro-Environmental Behavior (PEB)	Quantity of pro-environmental behaviors R participates in (0 = None, 4 = All Listed) n=4942	.45	.83
Activism PEB Scale			
Day to Day PEB Scale	(0 = None, 6 = All Listed) n=4347	2.73	1.26
Perceived Danger to Environment	R perceives a concept as dangerous to the environment. (0 = Not at all dangerous, 4 = Very dangerous) n=4113	2.55	.66
<i>Control Variables</i>			
Trust Government	How strongly R's trusts people in government positions (1 = Not at all, 5 = Very much so)	2.68	1.07
Male	Whether R is a man (1 = yes)	.46	.50
Age	R's age in years at time of survey	49.03	17.19
Married	Whether R is married (1 = yes)	.50	.50
Education	Years of schooling completed by R	12.78	3.51
Catholic	Whether R is Catholic (1 = yes)	.17	.38
Politically Right	R's political orientation (1 = Right-Leaning)	.28	.45
Working	Whether R is active in the labor force (1 = yes)	.57	.50
Non-Manual	Whether R is in a non-manual occupation (1 = yes)	.46	.50
Urban	Whether R lives in an urban environment (1 = yes)	.29	.45
Valid N (listwise) = 2763			

## Background

Using ISSP: Environment I from 1993, Hayes (2001) explored how gender differences in scientific knowledge interact to provide an effect upon environmental attitudes in seven different Western democratic nations. The present study, modeling off of Hayes’ analysis using the latest Environmental module from the ISSP (2010), assesses four of the same countries and applies for dependent testing the same items incorporated by Hayes into her designated orientation of attitudes towards protection of the environment. Markle (2013) proposed and constructed the Pro-Environmental Behavior Scale (PEBS) out of 19 items, some of which are akin to the ones available in the ISSP and used in constructing this study’s PEB scale. Fairbrother (2016) found that the gap between populations’ general concern for the environment and their rejection of suggested policy solutions may be attributable to general lack of political trust. Aoyagi-Usui et. Al (2003) compared pro-environmental attitudes and behaviors across different countries and discovered that for Western nations, environmental values are considered contrary to traditional values.

## Regression

### Hypotheses

PREDICTIONS: Statistically Significant Effects upon Willingness to Protect the Environment, in all analyzed countries:

- **POSITIVE:**
  - Pro-Environmental Behavior (both Activism and Daily)
  - Perceived Danger to the Environment
  - Trusting People in Government
- Education
- Non-Manual Labor
- Living in an Urban Area
- Working
- Age
- **NEGATIVE:**
  - Leaning Politically Right
  - Married
  - Catholic
  - Male

### Findings

RESULTS: Statistically Significant Effects upon Willingness to Protect the Environment, in all analyzed countries:

- **POSITIVE:**
  - Pro-Environmental Behavior (both Activism and Daily)
  - Perceived Danger to the Environment
  - Trusting People in Government
- Education
- Non-Manual Labor
  - Only for Germany
- Age
  - Only for Norway, Great Britain
- Male
  - Only for Germany
- **NEGATIVE:**
  - Leaning Politically Right
    - Only for Norway, United States
- **Statistically INSIGNIFICANT**, in all analyzed countries:
  - Married
  - Catholic
  - Living in an Urban Area
  - Working

	Germany			Norway			Great Britain / UK			United States		
Variables	Unstd B Coeffs	Std Betas	Sig	Unstd B Coeffs	Std Betas	Sig	Unstd B Coeffs	Std Betas	Sig	Unstd B Coeffs	Std Betas	Sig
(Constant)	0.217		0.000	0.214		0.000	-0.058		0.444	0.294		0.000
PEB Activism	0.021	0.210	0.000	0.015	0.128	0.000	0.018	0.129	0.002	0.017	0.132	0.000
PEB Day to Day	0.017	0.175	0.000	0.026	0.244	0.000	0.028	0.293	0.000	0.021	0.220	0.000
PDE Scale	0.006	0.117	0.002	0.013	0.240	0.000	0.007	0.115	0.007	0.013	0.243	0.000
Trust Govt.	0.043	0.192	0.000	0.037	0.147	0.000	0.050	0.186	0.000	0.036	0.144	0.000
Male	0.045	0.098	0.006	-0.003	-0.006	0.842	0.039	0.073	0.062	0.015	0.028	0.356
Age	-0.001	-0.047	0.258	0.002	0.120	0.001	0.002	0.138	0.002	4.803E-05	0.003	0.926
Married	0.009	0.019	0.614	0.013	0.026	0.406	0.004	0.007	0.865	-0.018	-0.034	0.256
Education	0.009	0.145	0.001	0.005	0.074	0.033	0.014	0.156	0.001	0.008	0.086	0.013
Catholic	0.017	0.035	0.325	-0.047	-0.012	0.680	-0.046	-0.046	0.215	-0.011	-0.018	0.538
Politically Right	-0.010	-0.018	0.605	-0.095	-0.185	0.000	-0.031	-0.057	0.130	-0.059	-0.097	0.002
Non-Manual	0.084	0.141	0.001	0.026	0.052	0.131	0.040	0.075	0.088	0.003	0.007	0.844
Working	0.001	0.002	0.958	0.026	0.047	0.146	0.032	0.057	0.185	0.025	0.044	0.155
Urban	-0.042	-0.068	0.053	0.012	0.021	0.490	-0.064	-0.063	0.092	0.016	0.030	0.313
Valid N Listwise	n = 648			n = 732			n = 516			n = 867		
Adj R-square	0.241			0.375			0.305			0.261		
(Highlighted items signify significance of $p \leq 0.05$ ; Light grey variables are statistically insignificant across all countries)												

## Means Comparisons:

- **WPE (0 to 1):** Great Britain’s mean of .385 is statistically significantly lower than those of the other three countries, which range from .453 to .461.
- **PEB Daily (0 to 6):** Norway and the United States are not significantly different, both approximately 2.40 on a scale from 0 to 6. Great Britain follows with nearly 2.78, and Germany has the highest at 3.42.
- **PEB Activism (0 to 1):** means of all four countries are not significantly different, ranging from .427 to .468
- **PDE (0 to 4):** Norway and Great Britain are not significantly different, respectively 2.33 and 2.37. However, they are statistically significantly different from the means of the United States (nearly 2.58) and Germany (nearly 2.86).
- **Trust Govt (1 to 5):** Means for all countries were significantly different from one another. From least to greatest, they are as follows: Germany (2.37), United States (2.54), Great Britain (2.69) , and Norway (3.12).

## Conclusion

Higher levels of Pro-Environmental Behavior, Perceived Danger to the Environment, Trust in Government, and Education are significant predictive factors of increased Willingness to Protect the Environment for individuals in Western democratic nations. If it is in the interest of legislators and scientists to engage greater public financial participation in environmental issues, they may consider investing in increasing peoples’ access to and participation in pro-environmental activities. Simply scaring them into thinking effects from modern technologies are detrimental is also effective.

Since the WPE questions mostly relate to economic characteristics, and the ISSP lacked financial data, further research is necessary to assess the influence of respondents’ income or wealth upon WPE. Perhaps this will substantially increase the proportion of explained variance in the data.