



NOTA DI LAVORO

25.2015

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Determinants Political Parties'
Environmental Concern: An
Empirical Analysis Based on
European Data (1970-2008)**

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Climate Change and Sustainable Development

Series Editor: Carlo Carraro

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Summary

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Keywords: Environmental Concern, Environmental Attitudes, Political Parties, Electoral Manifestos

JEL Classification: Q58, D78, Z13

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Greening up or not? The determinants political parties' environmental concern: an empirical analysis based on European data (1970-2008)

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Abstract : Why do parties offer environmental policies in their political programs? While a number of papers examine the determinants of citizens' pro-environmental behaviour, we know little about the extent to which political parties adjust their platform towards environmentalism. We investigate this process through data provided by the Manifesto Project Dataset (CMP) for 20 European countries over the period 1970-2008. Following the literature on public concern towards environment, we examine economic, environmental and political determinants. Our findings provide evidence that political parties' environmental concern is strongly correlated with their political ideology and with country-level economic conditions.

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I. Introduction

In his 1972 article, «Up And Down With Ecology: The Issue Attention Cycle», Anthony Downs assumes that once the growth phase is completed, ecology will suffer “the gradual loss of public attention characteristic of the later stage of attention cycle” (p.50). However, even after growth periods, environmental awareness has continually grown and has spread significantly internationally. This widespread committed involvement mainly finds its roots in scientists' recommendations through books, papers, and new media (Glaeser, 2013). Since the release of “Limits to Growth” (Meadow et al., 1972), international summits, institutions and action plans have stressed the importance of environmental topics and, at the same time, politicians have begun to include environment issues in their electoral platforms (Tognacci et al., 1972).

This paper aims to empirically investigate this process of electoral platforms greening-up by considering parties that took part in national elections in 20 democratic European countries over the time period 1970-2008.

There are number of reasons why content analysis of political programs, or manifestos, is particularly interesting. First, they are a vehicle to inform voters about party policy preferences (Budge and Laver, 1993) i.e. their ideological position. Because they are sets of proposals in order to answer society's issues and concerns, they are also information shortcuts (Franzmann and Kaiser, 2006). Second, they demonstrate the capability of political parties to sort citizen's demand, by selecting and aggregating them into coherent policy packages (Klingemann et al., 1994). Third, manifestos serve election propaganda since they are instruments to communicate with voters (Ray, 2007). Fourth, they are, or at least should be, commitments for parliamentarians once they are elected (Klingemann and al., 1994).

The purpose of this paper is achieved through an empirical analysis that relies on data drawn from the *Comparative Manifesto Database (CMD)* which allow the observation of parties' supply of environmentalism as measured by the percentage of sentences devoted to environment-related issues in their electoral programs. Indeed, the CMD data measure how politicians balance ecology against others social and economic issue, since - given the size-bounded characterization of political programs - an increase in space devoted to environment-related topics has to be compensated by a reduction of space devoted to other topics.

While the first contribution of this paper consists in the analysis of the evolution over time of environmentalism in parties' political platforms, its second contribution is an empirical investigation of factors that affect it. Why do political parties introduce environment-related topics in their programs?

The existing literature mainly focuses on the determinants of citizens' pro-environmental behaviour (see Torgler and Garcías-Valiñas, 2007; Aklin et al., 2013 for details), and provides evidence that socio-demographic and socio-economic factors environmental sensitivity directly impacts green vote (Schumacher, 2013). However, to the best of our knowledge, no study has investigated the determinants of parties' political platforms' shift towards environmentalism, i.e. the determinants of environmental policy supply in political programs.

Our results show that political parties' environmentalism is strongly correlated with economic variables; it reveals a positive correlation with countries' economic wealth (according to the prosperity and post-materialism hypothesis), and a negative correlation with inequality in wealth distribution which presumably intensifies social conflict and impedes the discussion of environment-related topics. Finally, it shows a negative correlation also with countries' trade openness. Instead, objective ecological degradation as well as variables that should reflect subjective feelings of this degradation do not seem to be clearly correlated with parties supply of environmentalism. Finally, we find that parties' ideological orientation is a significant driver of environmentalism with left-wing parties who are significantly more environmental-friendly than right wing.

The reminder of the paper is structured as follows: section two presents our theoretical framework and the literature, section three exposes our data and methodology. Section four illustrates and discusses our results; finally, section five concludes.

II. Theoretical Framework

The democratic political system is inseparable from the individuals' abilities to formulate their preferences which must be balanced by the government in order to respect citizens' choices (Dahl, 1971). Therefore, public opinion is a major determinant of policies in democratic countries (Erikson et al., 1993; Page and Shapiro, 1983). In democratic political systems, citizens can express their preferences toward environmental protection by interactions, (i.e. ballots, demonstrations) with the political system (Farzin and Bond, 2006). By voting for a party, citizens accept its political program and express their preferences on which kind of policies they want to see implemented for next electoral mandate. Therefore, parties are the link between voters' preferences and political decision-making (Lawson, 1980; Dalton et al., 2011; Spoon et Klüver, 2014).

Over the 70s, Green Parties emerged in European democracies. According to Spoon et al. (2014), green parties are issue-owners since "there is a spontaneous identification between issues relating to the environment and green politics and green parties in the mind of most people" (2014:366). This suggests that green parties have been created in order to answer to citizens' expectations about environmental conditions. Furthermore, it also suggests that a part

from green parties, politicians were not immediately identified as concerned by the environment.

However, Downs' (1957) model assumes that political parties are opportunistic and face perfect information. Under these conditions, they are able to focus on the median voter in order to win elections. A wide range of the existing literature has discussed political parties' perfect information, their fundamental objectives (i.e. vote-seeking, office-seeking and policy-seeking) and how to achieve them (see Frey, 1978; Strom, 1990; Budge, 1994). The main idea is that parties face mixed-objectives. In order to implement policies, they have to be in office and thus win as many votes as possible. Studies provide evidence that when building their electoral manifestos, parties modify their positions in response of public opinion (Adam et al., 2004) and of voters' opinion expressed in past election (Spoon and Klüver, 2014).

For example, because public awareness of environmental issues has increased over past decades, it may be argued that not presenting an environmental policy would have a significant cost for parties as it should reduce votes and increase the probability of electoral defeat. In other words, according to the idea that political market for environmental supply does exist, the increase in voters' sensitivity towards environmental issues should produce a shift of environmentalism in parties' political programs (Garman, 2014; Kirchgässner and Schneider, 2003).

Following a review of the literature concerning the main determinants of public support for environmental quality, this paper investigates whether political parties' environmentalism shows any statistically significant link with parties characteristics' and country-level variables. and.

The existing literature structures the debate about citizens' awareness of the environment around three main approaches: ecological, economic and political. The former assumes that environmental concern is a global phenomenon whose main determinant is the perception of the threat to nature. On the contrary, the economic approach assumes that the spread of environmental awareness depends upon economic conditions. Indeed, according to this perspective, environmental issues are 'sunshine issues' which means that they are debatable only when economic times are good (Dalton et al., 2013). Finally, the latter approach focuses

on political ideology as determinant of environmental awareness. These three approaches are presented in detail in the following sub-sections.

II.1 Economic approach

A wide range of studies assumes that public support for the environment is a function of economic conditions. Individuals adjust their behavior and take environmental quality into account under economic constraints. As a consequence, in the ballot, ecological objectives compete with pure voters' economic objectives (Kirchgässner and Schneider 2003, p.373). The economic approach includes three main hypotheses.

II.1.1 Income and wealth: the post-materialism and prosperity hypotheses

The post-materialism (Inglehart, 1977, 1990) and the prosperity hypothesis (Diekmann and Franzen, 1999; Franzen, 2003; Franzen and Meyer, 2010) do consider income, or more generally wealth, as the core determinant of environmental concern.

Under the post-materialist hypothesis, people living in richer societies are more likely to exhibit a pro-environmental behavior because of a shift in their values (Inglehart, 1977, 1990, 1995, 1997). Indeed, by investigating the World Value Survey (WVS) data set, which explores "people's values and beliefs, their stability or change over time, and their impact on social and political development of the societies in different countries of the world (Haerpfer, 2014), Inglehart formulates his theory about "objective problems and subjective values" (1995). According to it, in contexts where economic well-being has been established material needs are satisfied and individuals pursue non-materialist goods such as free expression and life quality. On the contrary, in poorer countries, people want to solve objective and local environmental issues (Inglehart, 1995) without having any reference to values. In sum, in line with Rostow's model (Rostow, 1960), Inglehart postulates a new stage of nations' development, where societies consider environmental issues and life quality as crucial because of a shift in their values.

Under the prosperity hypothesis, rather than facing a value shift, people make a trade-off between goods and environmental quality. Environment is a "luxury good" whose demand increases with wealth (Baumol and Oates, 1979 ; Franzen and Meyer, 2010). On the one hand,

this hypothesis assumes a rational choice theory under which people face a positive income elasticity of environmental demand. On the other hand, this perspective considers wealthier people as “more willing and able to reduce their standard of living in order to devote more resource to global environmental protection” (Franzen, 2003, p.299). According to this hypothesis, individual’s marginal willingness to pay for environmental protection and overall willingness to pay for environmental protection have to be distinguished (Franzen and Meyer, 2010). As societies become wealthier, total willingness to pay for environment will grow. However, individual’s marginal willingness to pay for environmental quality first increases with income, but declines in a second phase with the environmental quality’s improvement.

II.1.2 Economic instability and environment awareness: environment as “pro-cyclical good”

The “prosperity hypothesis” is strengthened by Conroy and Emerson (2014) who provide evidences that environment is considered as a “pro-cyclical” good. By analyzing data from the General Social Survey (1974-2012), they find that during periods of recession, low GDP rate or unemployment, people are less inclined to support spending towards environment. In this perspective, it is not enough to simply focus on countries’ wealth. Instead, also economic fluctuations have to be considered as determinants of environmental awareness. Even when they are concerned for the environment, people disregard environmental policy when their economic condition is threatened. Such a behavior has substantial consequences during elections as illustrated by Horbach (1992) who provides evidences that Green Parties face worse electoral performances when unemployment is high. More generally, public opinion towards environmental issues is affected by economic stability as supported by Scruggs and Benegal (2012) who argue that the higher unemployment rate is, the less people believe that climate change is a serious issue.

II.1.3 Wealth distribution: the inequality hypothesis

As stated by Rogers (2014), “socioeconomic inequality is now understood to be integrally linked to environmental degradation, climate change, and blocking of pathways to sustainability”. (2014:933). Since Boyce (1994) suggestion, some studies investigate the relationship between environmental concern and wealth’s distribution by introducing variables such as the Gini index in their empirical investigations of the determinants of

citizens' environmental awareness (Torras and Boyce, 1998; Magnani, 2000). They stress that greater equality in income distribution reduces social conflict about the distribution of income and may favor dialogue on environmental issues. Magnani (2000) specifically assumes that "a reduction of pollution emissions in high income countries is more likely to be observed if economic growth accompanies improvement in other social indicators, particularly income inequality" (2000:442). In this perspective, in a period characterized by high inequalities parties would not offer environmental policies since they would primarily focus on socio-economic issues.

II. 1.4 The impact of international economic integration

The link between international trade and environmental policy seems ambiguous since the existing literature suggests that they may be exclusive or complementary. Bechtel et al. (2012) argue that environmental concern and preferences for trade policy are negatively correlated; trade affects the environment since it improves economic activities, exchanges and transports, therefore individuals concerned with environmental protection would be more in favor of national consumption at the expense of globalization. On the other hand, trade may not only favor good or services export, but also green values or green preferences and policies (Bechtel et al., 2012). It may also stimulate technological progress, and exchange of green technologies (Copeland and Taylor, 2003), or enhance the adoption of corporate environmental management systems (Prakash and Potoski, 2006).

II.2 Ecological approach

The environmental activism of poor nations over the 90s (Knight and Messer, 2012) led some scholars to question the role of wealth as the main determinant of environmental concern. By investigating the Health of the Planet (HOP) Survey (Dunlap, Gallup, and Gallup 1993; Dunlap and Mertig, 1995), and the World Value Survey (WVS) (Dunlap and Mertig, 1997; Dunlap and York, 2008; Knight and Messer 2012), these scholars support Dunlap and Liere's New Environmental Paradigm (NEP) (Dunlap and Liere, 1978). According to this paradigm, rather than wealth, the main determinant of individual's environmental concern would be a common and objective perception of environmental degradation (Knight and Messer, 2012). To be more concise, individuals are influenced by environmental conditions of their place of living (Groot, 1967; Brechin and Kempton, 1994).

In their recent work, Dunlap and York (2008) investigate the WVS Survey and find 11 of their 14 measures of environmental awareness significantly correlated with national wealth. They conclude that, compared with citizens' of richer countries, citizens of poor countries have the same ability to express themselves on environmental issues and to perceive the links between environmental risks and sustainability. Knight and Messer (2012) strengthen the NEP through an empirical analysis carried out on WVS data (1990-2008); they provide evidence about the split between concern for local environmental problems and global environmental problems, and that people are willing to pay more taxes when environmental degradation is high. Their results also contradict the post-materialism and the wealth hypotheses by finding a negative and significant relationship between GDP per capita and citizens' willingness to pay for environmental protection.

Following this approach, political parties offer environmental policy in response to a global consensus on objective environmental conditions. People are aware of the importance of protecting the environment because of the global threat that humans face.

II.3 Political approach

The latter approach investigates how ideological preferences are correlated with environmental sensitivity. Since the 70s, scholars suggest that public support for the environment varies across the policy spectrum (Liere and Dunlap, 1980) and transcends political cleavages (Ogden, 1971).

Tognacci et al. (1972) interview 161 persons from Colorado by way of two series of questions. The first ones focus on General environmental goal, the second ones on specific environmental attitude. According to Canstantini and Hanf (1972), their study provides evidence that Democrats and Liberals votes are more pro-environmental than Conservatives or Republicans, which is also supported by Dunlap and Gale (1974) who find that Democrats are more pro-environment voting than Republicans.

More recently, McCright et al. (2014) have investigated the General Social Survey (GSS) dataset 1972-2012. In line with the party sorting theory, they find a significant partisan polarization on support for government spending on environmental protection within the US public since 1992. Finally, Garmann (2014) has focused on relationship between ideology and

climate policy and suggests that center and left-wing governments are more associated with emission abatements than right-wing. Dunlap (1975:432) identifies three explanations of this phenomenon: (1) environmental reforms are generally opposed by business and industry because of the costs involved, (2) environmental reforms entail an extension of government activities and regulation, and (3) environmental reforms often require innovative action.

III. Data and methodology

III.1 Political parties' environmental concern

Our analysis primarily relies on party-level data drawn from the Comparative Manifesto Database (CMD) (Volkens and al., 2013). The CMD is a well-established data source built by a group of researcher at the Wissenschaftszentrum Berlin für Sozialforschung (WZB) and it has been extensively employed by empirical studies over recent years (Cole, 2005; Netjes and Binnema, 2007). The database contains data that result from an in depth quantitative content analysis of the political programs released by the major parties that took part in national elections held in a number of countries from 1950 until 2010.

Due to limited data availability for CMD and non-CMD variables that were essential for our empirical investigation, the analysis was restricted to those parties that acted in countries and elections reported in tab. 1. Parties from 20 European countries were taken into account: Sweden, Denmark, Finland, Belgium, Netherlands, Luxembourg, France, Italy, Spain, Greece, Portugal, Austria, Great Britain, Ireland, Czech Republic, Hungary, Poland, Slovakia, Slovenia, Germany. For the first fourteen countries in this list, which are all located in Western Europe, all the major parties that participated in elections held in the period 1970-2008 are included in our sample.

For the five ex-communist countries in this list, instead, data are available only for the major parties that took part in elections held in the post-communist period; finally, German data are available only from the post-reunification era. Our final dataset includes 1,251 observations.

Sweden	<u>1970</u>	1973	1976	1979	1982	1985	1988	1991	1994	1998	2002	<u>2006</u>		
Denmark	1971	1973	1975	1977	1979	1981	1984	1987	1988	1990	1994	1998	2001	<u>2005</u> <u>2007</u>
Finland	<u>1970</u>	1972	1975	1979	1983	1987	1991	1995	1999	<u>2003</u>	<u>2007</u>			
Belgium	<u>1971</u>	1974	<u>1977</u>	1978	1981	1985	1987	1991	1995	1999	<u>2003</u>	<u>2007</u>		
Netherlands	<u>1971</u>	<u>1972</u>	1977	1981	1982	1986	1989	1994	1998	2002	<u>2003</u>	<u>2006</u>		
Luxembourg	1974	<u>1979</u>	1984	<u>1989</u>	1994	1999	<u>2004</u>							
France	<u>1973</u>	1978	1981	1986	1988	1993	1997	2002	<u>2007</u>					
Italy	1972	1976	1979	1983	1987	1992	1994	1996	2001	<u>2006</u>	<u>2008</u>			
Spain	1977	1979	1982	1986	1989	1993	1996	2000	<u>2004</u>	<u>2008</u>				
Greece	1974	1977	1981	1985	1989	1993	1996	2000	<u>2004</u>					
Portugal	<u>1975</u>	<u>1976</u>	<u>1979</u>	1980	1983	1985	1987	1991	1995	1999	2002	<u>2005</u>		
Austria	<u>1970</u>	1971	<u>1975</u>	<u>1979</u>	1983	1986	1990	1994	1995	1999	2002	<u>2006</u>	<u>2008</u>	
Great Britain	<u>1970</u>	1974	1979	1983	1987	1992	1997	2001	<u>2005</u>					
Ireland	1977	1981	1982	1987	1989	1992	1997	2002	<u>2007</u>					
Czech Republic	1992	1996	1998											
Germany	1994	<u>1998</u>	<u>2002</u>	<u>2005</u>										
Hungary	1990	1994	1998											
Poland	1991	1993	1997	2001										
Slovakia	<u>1992</u>	<u>1994</u>	<u>1998</u>											
Slovenia	1992	1996	2000											

Tab. 1: Countries and elections considered in the analysis. For each country, underlined years are those whose parties were not considered in regression models run on restricted sample because of missing values for some country-level variables.

For each party the CMD records the percentage of sentences devoted to specific political issues in its electoral manifesto. One variable, which is labeled ENVIRONMENTALISM in the following analysis, specifically records the share of manifestos' content devoted to topics that are explicitly related to environmental protection. According to the CMD official description, these topics include: preservation of countryside, forests, etc. general preservation of natural resources against selfish interests, proper use of national parks, soil banks, etc. environment improvement (Volkens et al., 2013b). We consider this variable as a proxy of parties' environmental concern and, more specifically, as a proxy of the salience of environmentalism in parties' political programs. In other words, we consider this variable as measuring how much parties do appeal to environmentalism in order to catch votes in national elections.

About 15% of the parties in our sample did not devote any space to environment-related topics in their programs; for these parties ENVIRONMENTALISM assumes the value of zero, while for the others it ranges from 0.17 to 62.03. Fig. 1 displays countries' average values for this variable over the electoral years included in our study; looking at it, ENVIRONMENTALISM shows a considerable cross-country and within-country heterogeneity.

III.2 Covariates

In order to empirically investigate the evolution of political parties' environmental concern and its correlation with parties' characteristics, countries' economic features and ecological conditions, ENVIRONMENTALISM was used as the dependent variable in regression analyses where, following the theoretical framework depicted in previous sections and according to data availability, a wide set of party-level and country-level covariates was included. All these covariates are presented in the following subsections; variables' full description and their sources are reported in tab. 2 while tab. 3 shows some summary statistics.

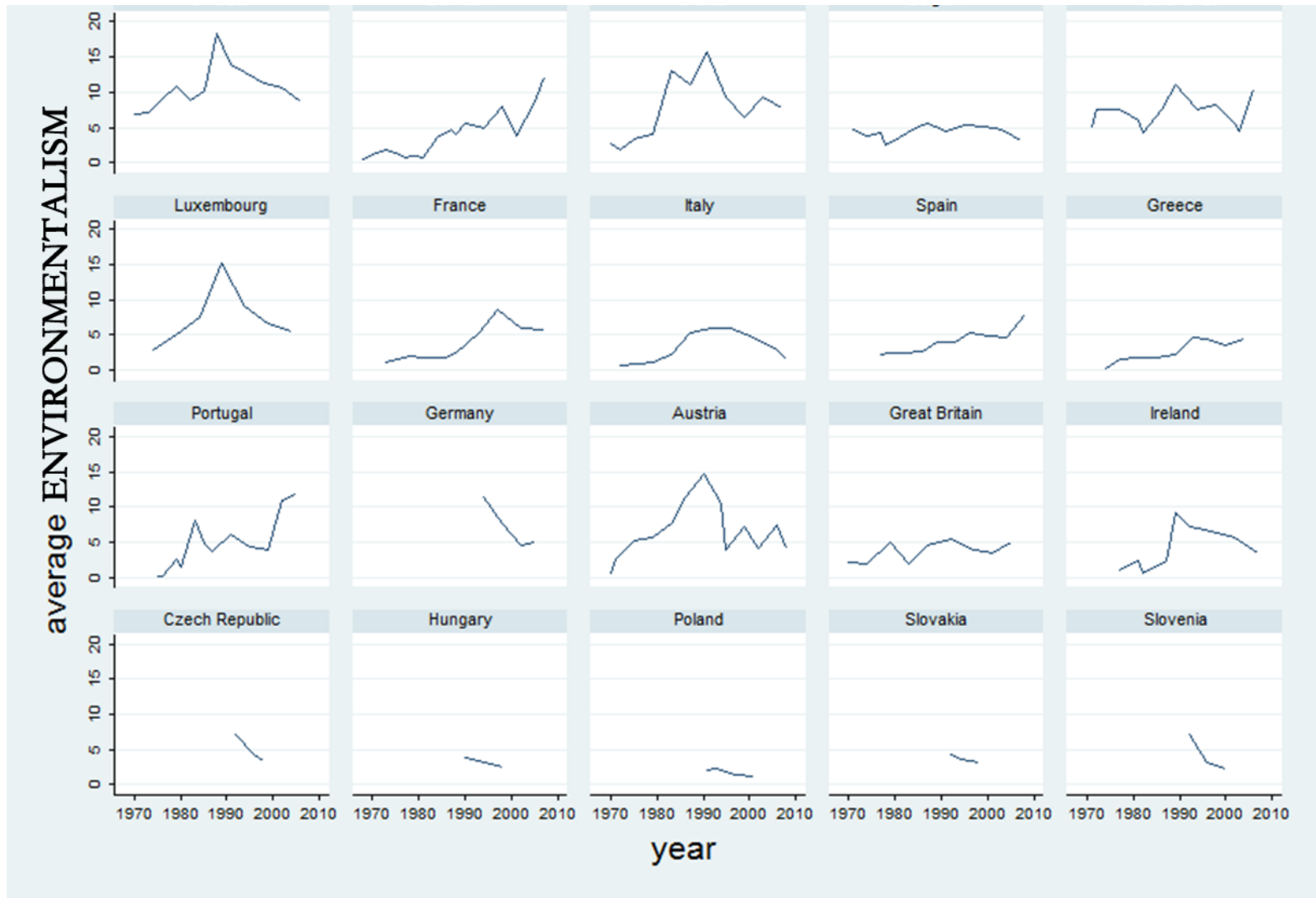


Fig. 1: average ENVIRONMENTALISM by country over the time period considered

Variable	Description	Source
ENVIRONMENTALISM	% of sentences devoted to environmental issues in parties' electoral manifestos	CPM database
ECOLOGICAL PARTY	Dummy =1 for Ecological parties	Own elaboration based on CPM data and parties' classifications provided by Hellwig (2012) and Adams et al. (2006)
RILE	Right-left position of party	CPM database
Ln_GDPpc	Log of real GDP per capita	Penn World Table (through the QOG SOCIAL POLICY DATASET)
GROWTH	Growth rate of real GDP per capita	Penn World Table (through the QOG SOCIAL POLICY DATASET)
TRADE	Total trade (exports plus imports) as a percentage of GDP in constant prices	Penn World Table (through the QOG SOCIAL POLICY DATASET)
UNEMP	Unemployment rate in percent	The QOG SOCIAL POLICY DATASET
INDUSTRY_SHARE	Share of the economy that stems from industrial production measured as % of GDP	World Development indicators (through the QOG SOCIAL POLICY DATASET)
INFLATION	Percentage change in consumer prices (all items) compared to the previous year	The QOG SOCIAL POLICY DATASET
GINI	Gini index of net income inequality	Solt, Frederick. 2009. "Standardizing the World Income Inequality Database." Social Science Quarterly 90(2):231-242.
Log_CO2	Log of CO2 metric tons emissions per capita	World Bank
Log_SO2	Per capita Sulfur Emissions by Country	Global SO2 emission by country data are from http://www.sterndavidi.com/datasite.html while population data are from World Bank
DENSITY	Population density (population/squared km)	Own elaboration based on population data provided by the QOG SOCIAL POLICY DATASET and surface data provided by World Bank
URBAN	% of people living in urban areas as defined by national statistical offices	World Bank
OLDSHARE	% of population having more than 65 years	THE QOG SOCIAL POLICY DATASET
TERTIARY	Total enrollment in tertiary education (ISCED 5 and 6) regardless of age, expressed as a percentage of the total population of the five-year age group following on from secondary school leaving	World Bank
EU status	Dummies for "non Eu member", "Eu member", "Eu applicant"	CPM database

Tab. 2: data description and sources.

Variable	Obs	Mean	Std. Dev.	Min	Max	Variable	Obs	Mean	Std. Dev.	Min	Max
ENVIRONMENTALISM	1251	5.14	6.31	0	62.03	Sweden	1251	0.06	0.23	0	1
ECOLOGICAL_PARTY	1251	0.06	0.24	0	1	Denmark	1251	0.12	0.32	0	1
RILE	1251	-3.1	21.26	-74.3	78.85	Finland	1251	0.07	0.26	0	1
EU_member	1251	0.27	0.44	0	1	Belgium	1251	0.1	0.3	0	1
EU_notmember	1251	0.71	0.46	0	1	Netherlands	1251	0.07	0.25	0	1
EU_applicant	1251	0.03	0.17	0	1	Luxemburg	1251	0.03	0.16	0	1
Ln_GDPpc	1251	9.96	0.39	8.92	11.13	France	1251	0.04	0.2	0	1
GROWTH	1251	2.02	2.98	-12.1	9.81	Italy	1251	0.09	0.29	0	1
TRADE	1251	65.74	41.33	16.68	286.63	Spain	1251	0.08	0.28	0	1
UNEMP	1251	7.84	4.51	0.06	22.78	Greece	1251	0.03	0.17	0	1
INFLATION	1251	9.48	19.45	-0.27	209.93	Portugal	1251	0.07	0.25	0	1
Log_CO2	1251	2.14	0.4	0.85	3.7	Germany	1251	0.02	0.13	0	1
INDUSTRY_SHARE	1251	31.61	5.68	17.71	50.82	Austria	1251	0.04	0.2	0	1
OLDSHARE	1251	14.1	2.26	9.16	20.03	Great Britain	1251	0.04	0.18	0	1
DENSITY	1251	145.63	102.78	13.62	393.5	Ireland	1251	0.04	0.2	0	1
URBAN	1251	73.38	12.94	40.78	97.5	Czech Republic	1251	0.02	0.14	0	1
TERTIARY	1189	36.97	18.76	1.42	93.95	Hugary	1251	0.02	0.14	0	1
GINI	1167	27.59	4.19	20.08	35.95	Poland	1251	0.03	0.18	0	1
Log_SO2	1078	-10.82	0.82	-13.01	-8.63	Slovakia	1251	0.02	0.14	0	1
1968-1980	1251	0.23	0.42	0	1	Slovenia	1251	0.02	0.13	0	1
1980-1990	1251	0.23	0.42	0	1						
1990-2000	1251	0.32	0.47	0	1						
2000-2001	1251	0.22	0.42	0	1						

Tab. 3: summary statistics.

III.2.1 Economic variables

According to the prosperity hypothesis and to the post-materialism hypothesis, countries' wealth exerts a positive impact on parties environmentalism. Indeed, following the reasoning reported in section II.1.1, parties' environmental awareness is supposed to be positively correlated with economic well-being. This hypothesis is tested by the inclusion among covariates of countries' real GDP per capita (transformed in natural log and labeled Ln_GDPpc).

In line with the hypothesis that environment is a pro-cyclical good, which was presented and discussed in section II.1.2, it makes sense to suppose that the better a countries' macroeconomic performance is the greater the salience of environment related issues in parties' manifestos should be. In this perspective, low unemployment, contained inflation and sustained economic growth should positively contribute to parties' environmental awareness. In order to test this hypothesis, the following covariates were added to our analysis: growth rate of real GDP per capita (GROWTH), inflation (INFLATION), unemployment (UNEMP).

Furthermore, in order to test whether any connection between trade and environmentalism effectively exists, as supposed by the literature presented in section II.1.4, our specifications include one covariate that measures the degree of openness of countries' economies and is calculated as the sum of national exports and imports as a percentage of GDP (TRADE).

Finally, in order to test the hypothesis that wealth distribution is significantly correlated with parties' environmental awareness, as theorized by the contributions presented in section II.1.3, countries' Gini index of net income inequality (GINI) was also introduced among the economic covariates following Boyce (1994) suggestion. A number of missing values were observed for this latter variable, therefore its use implies a sensible reduction of the sample.

III.2.2 Ecological variables

According to the NEP hypotheses, countries' objective environmental degradation and individuals' subjective feeling of this degradation are supposed to positively affect citizens' demand and parties' supply of environmentalism.

Unfortunately, the availability of data concern with environmental degradations is rather restricted and this partially limited our test of these hypotheses.

All the same, in order to test them, two variables were introduced among covariates with the purpose to measure countries' level of atmospheric pollution; the first variable is countries' per capita amount of carbon dioxide emissions (the logarithmic transformation of this variable was labeled Log_CO2). The second variable is countries' per capita sulfur dioxide emissions (also in this case, a logarithmic transformation of values was applied and the variable was labeled Log_SO2); as in the case of the GINI variable, a number of missing values was observed for Log_SO2, therefore its use implies a sensible loss of observations.

In order to investigate the impact on parties' environmentalism arising from citizens' subjective perception of environmental threat, following Van Liere and Dunlop (1980), we also included among our covariates one variable that measures the national share of people living in urban areas (URBAN). Indeed, in a context of high urbanization people may more clearly perceive the risk of environmental degradation because big cities favor noise, transport pollution, reduction of green spaces and, finally, expose to higher level of pollution (Tremblay and Dunlap, 1978 ; Torras and Boyce, 1998). Furthermore, also overpopulation may have a significant impact on citizens' subjective perception of environmental threat. For this reason, we also included among our covariates population density (DENSITY) which is often considered as an important factor moderating pollution intensity (Scruggs, 1998). It is also presumed to be correlated with the exploitations of natural resources and in this perspective it also potentially affects environmental awareness.

III.2.3 Ideological variables

The empirical investigation of the relationship between political parties' ideology and their environmentalism is accomplished by including two covariates in our models' specifications. First, one dummy variable (ECOLOGICAL_PARTY) that identifies ecological parties according to the classification provided by Hellwig (2012) and Adams et al. (2006) is used. Parties who are overtly environmentally-oriented should dedicate a significant part of their manifestos to the proposal of environmentally-oriented policies to be realized; the inclusion among the covariates of one dummy that identify these parties allows to correctly interpret the effect of other variables.

Second, in order to more precisely test the presence of any significant correlation between parties' political ideology and ENVIRONMENTALISM, one variable that measures parties' right-left ideological position (RILE) was introduced among predictors. This variable was drawn from the CMD and measures parties' ideological position on a scale, built following Laver and Budge (1992), which ranges from -100 to 100 with positive values associated to right-wing oriented parties.

III.2.4 Control variables

Since scholars report that people's age is negatively correlated with their attitudes towards environmental issues (Howell and Laska 1992; Carlsson and Johnsson-Sternman 2000), citizens' age may be supposed to exert a significant influence on parties' offer of environmentally-oriented policies. Following to this reasoning, we also included among covariates the share of >65 people on national total population (OLDSHARE).

Citizens' environmental attitude has also been found to be significantly linked with their education (Ercolano et al., 2014); it follows that when population is more highly educated parties' strategy to catch votes should be based on raising ENVIRONMENTALISM. In order to test this hypothesis our regression includes the share of total enrollment in tertiary education (ISCED 5 and 6) as a percentage of total population in the relevant age group (this variable is labeled TERTIARY). Also this variable reports a considerable number of missing values and therefore its use implies a sensible loss of observations.

There are some reason to believe that also the characterisation of national economies may significantly affect citizens' demand and parties' supply of environmentalism. For example, industrial production creates employment and wealth but, at the same time, it exposes countries to environmental degradation through generation of pollution and exploitation of natural resources. In this perspective, countries whose economies are significantly characterized by industrial production may experience a sort of trade-off between wealth and environmental degradation and this may translate into a higher or lower ENVIRONMENTALISM. People may ask for more environmentally-oriented policies aimed at reducing the industrial sector on the environment or, on the contrary, they may prefer less environmentalism to avoid the imposition of constraints to economic activities. With the purpose to empirically test whether any link between the relevance of industrial production in

national economy and parties environmental concern actually exists, one variable measuring the industrial sector share of national GDP (INDUSTRY_SHARE) was introduced among our covariates.

Moreover, our predictors include dummies that identify countries' EU membership status (member, applicant, non-member with the latter used as reference category). Indeed, the "environment is actually at the heart of EU policy" (European Union, 2013, p. 5) since the Treaty on European Union set members' duty to work towards "a high level of protection and improvement of the quality of the environment" (Article 3). Therefore, it makes sense to investigate whether being part of the EU is correlated with an higher parties' environmental concern.

Finally, our set of covariates includes countries' and decades' dummies (1970-1980 which is used as reference category; 1980-1990; 1990-2000; 2000-2010) in order to account for unobserved cross-country and cross-period heterogeneity.

III.3 Methodology

The empirical approach adopted to carry out our regression analyses mainly relies on De Simone and Sapio (2013) and has three features that are worth noting.

First, our empirical analysis treats the party-data in our sample as a pooled cross-section because parties' transformations, merges and disappears over time did not allow a panel dataset to be built without deleting a significant number of observations.

Second, our estimates are primarily carried out using OLS with standard errors clustered at country level. Besides, as was stressed in section III.1, our dependent variable is a percentage/proportion and therefore has a bounded nature. Scholars have highlighted the inappropriateness of OLS in case of regression analyses with such a dependent variable (Kieschnick and McCullough, 2003); indeed, when a bounded dependent variable is investigated, OLS may lead to impossible predictions, non-normality of the error terms may arise and heteroskedasticity potentially affects the reliability of the estimates.

In order to overcome these potential biases, we checked the robustness of our OLS results by adopting the Fractional logit model (FRACLOG - Papke and Wooldridge, 1996), and the Zero-Inflated Beta model (ZIB), which were both carried out by adjusting the estimates for clustering at country level. The Fractional logit model assumes that “the expected value of the dependent variable is a logit function of the explanatory variables with the error term supposed to be homoskedastic and Gaussian” (De Simone and Sapio, 2013, p.9). This model is suitable “for handling proportions data in which zeros and ones may appear as well as intermediate values” (Baum, 2009, p. 301). Nevertheless, a further problem that we had to keep in mind when choosing our empirical strategy arises from the fact that the number of observations in our final dataset that show a value of zero for the dependent variable is particularly relevant, as we reported in section III.1. The use of the Zero-Inflated Beta model is a solution to this additional problem. Indeed, this model is made up of two parts; a logistic regression model is used to investigate the probability that the dependent variable equals 0 and a Beta regression model (Ferrari and Cribari-Neto, 2004) is used to estimate the impact of covariates on non-zero proportions. As highlighted by De Simone and Sapio (2013), the ZIB estimation technique reproduces the two-step decision making process which is presumably carried out by political parties: they choose the salience of environmental issues in their political manifestos only once they have decided that environmental concern has to be reported.

Third, given the unavoidable adoption of a pooled cross-section treatment of our data and the absence of exogenously determined variation, the identification of causality links among our variables is questionable; therefore our analysis has to be intended as the search for robust *ceteris paribus* correlations.

IV. Results and Discussion

Tab. 4 reports coefficients and standard errors obtained through the OLS estimations while robustness checks obtained through the FRACLOG and the ZIB model are presented in tab. 5 and 6 respectively; in the latter tables marginal effects evaluated at the mean of the explanatory variables are reported instead of coefficients in order to ease the comparability with OLS results (De Simone and Sapio, 2013). For the sake of brevity coefficients estimates for country dummies are not included in the table but are available upon request.

All these tables present results obtained through different specifications. In each table we begin with a basic model that includes economic covariates, environment-related covariates, ideological covariates and controls (model 1); we then augment this specification by adding decades' dummies in model 2; finally also country dummies were considered in model 3. Models from 4 to 6 basically reproduce models 1-3 but also include three variables (GINI, TERTIARY and Log_SO2) for which a significant number of missing values was observed. The inclusion of these variables led to a reduction of sample dimension (949 obs. instead of 1251 obs. considered in the first three models); more in detail, all countries and years that are underlined in tab. 1 could not be considered in these models, therefore comparisons with the previous one has to be carried out with great caution.

IV.1 Prosperity and Post-materialism hypotheses: strong support

Looking at the tables, a first relevant finding is that the prosperity and the post-materialism hypotheses are strongly supported by our empirical analyses. Indeed, all the specifications run with OLS find a positive and significant coefficient for the natural logarithm of real GDP per capita. This result is strongly confirmed by the FRACLOG and the ZIB estimations. Statistical significance of this result varies across specifications, but it is at least $p < 0.10$ with only few exceptions.

According to this result, the wealthier the country where parties act is, the higher the saliency of environment-related topics in their manifestos is. In this perspective, wealth positively affects citizen demand for environment related policies which, in turn, translates into a higher supply of environmentalism by parties.

IV.2 Environment as “pro-cyclical good”: no support

Not all the other macroeconomic covariates included in our models provide as much significant results as GDP per capita. Indeed, GROWTH turns to be statistically insignificant and this result is robust across models and alternative specifications. INFLATION, instead, reports a positive and significant coefficient only in model 6 where the reduced sample is considered and GINI, TERTIARY and SO2 are included in the specification together with our original set of covariates and with country dummies.

	OLS model 1	OLS model 2	OLS model 3	OLS model 4	OLS model 5	OLS model 6
ECOLOGICAL_PARTY	0.136*** (3.84)	0.132*** (3.73)	0.133*** (3.77)	0.148*** (3.54)	0.146*** (3.47)	0.148*** (3.46)
RILE	-0.000347*** (-3.12)	-0.000429*** (-3.70)	-0.000346** (-2.84)	-0.000427*** (-3.56)	-0.000455*** (-3.59)	-0.000367** (-2.76)
Ln_GDPpc	0.0425** (2.11)	0.0398** (2.20)	0.0549* (1.94)	0.0286*** (2.91)	0.0296*** (3.12)	0.0606** (2.39)
GROWTH	-0.000487 (-0.56)	-0.0000394 (-0.05)	0.000673 (1.11)	-0.000823 (-0.73)	-0.000669 (-0.65)	0.000933 (1.19)
TRADE	-0.0000556 (-0.55)	-0.000128 (-1.50)	-0.000567*** (-2.96)	-0.0000845 (-1.14)	-0.000113 (-1.44)	-0.000513** (-2.31)
UNEMP	0.000260 (0.41)	-0.00126* (-2.07)	-0.000377 (-0.60)	0.000828* (1.75)	-0.000192 (-0.41)	0.0000228 (0.03)
INFLATION	-0.0000479 (-0.51)	-0.0000579 (-0.54)	0.000104 (1.07)	-0.000161 (-1.36)	-0.000127 (-1.16)	0.000169* (2.05)
Log_CO2	0.00787 (0.57)	0.00436 (0.35)	-0.00148 (-0.08)	0.00980 (1.32)	0.0103 (1.48)	-0.00215 (-0.13)
DENSITY	-0.0000394 (-0.71)	-0.0000344 (-0.67)	-0.000894** (-2.59)	-0.0000330 (-0.85)	-0.0000330 (-0.88)	-0.00149*** (-4.02)
URBAN	-0.000190 (-0.44)	0.00000789 (0.02)	0.00289*** (3.46)	-0.00110** (-2.46)	-0.000975** (-2.19)	0.00331*** (3.36)
INDUSTRY_SHARE	0.000433 (0.59)	0.000613 (0.90)	0.00132 (1.27)	0.000802 (1.43)	0.000887 (1.64)	0.000389 (0.42)
OLDSHARE	0.00220 (0.77)	0.00115 (0.40)	0.00142 (0.46)	0.00743*** (3.63)	0.00647*** (2.94)	0.00390 (1.53)
EU_member	-0.0297*** (-3.29)	-0.0241*** (-3.04)	-0.0275*** (-3.21)	-0.0241*** (-3.43)	-0.0234*** (-3.62)	-0.0282*** (-3.35)
EU_applicant	-0.0201*** (-3.40)	-0.0164** (-2.48)	0.000692 (0.12)	-0.0314*** (-3.31)	-0.0241** (-2.69)	0.00206 (0.34)
1980s-1990s		0.0256*** (5.99)	0.0210** (2.78)		0.0158*** (2.96)	0.0135* (1.83)
1990s-2000		0.0313*** (3.88)	0.0367** (2.79)		0.0139 (1.72)	0.0303** (2.13)
2000-2010		0.0164 (1.59)	0.0314* (1.89)		-0.00681 (-0.81)	0.0243 (1.38)
GINI				-0.00292*** (-3.82)	-0.00225*** (-3.07)	-0.00155 (-1.71)
Log_SO2				-0.00358 (-0.63)	-0.00244 (-0.42)	0.00151 (0.21)
TERTIARY				-0.00000402 (-0.02)	0.000286 (1.58)	-0.000323 (-1.31)
Country dummies	No	No	Yes	No	No	Yes
Obs.	1251	1251	1251	949	949	949
log likelihood	1978.40	2000.24	2061.61	1596.87	1606.79	1641.09
Pseudo R2	0.38	0.40	0.46	0.49	0.50	0.53

Tab. 4: OLS pooled cross-sectional estimates; the dependent variable is ENVIRONMENTALISM. coefficients and t statistics (in parentheses). Standard errors clustered at country level were applied to all models. In models 4, 5 and 6 all the observations related to countries and years underlined in tab. 1 were not considered due to missing values. * p<.10, ** p<.05, *** p<.01.

	FRACLOG model 1	FRACLOG model 2	FRACLOG model 3	FRACLOG model 4	FRACLOG model 5	FRACLOG model 6
ECOLOGICAL_PARTY	0.0681*** (5.34)	0.0640*** (5.02)	0.0651*** (5.54)	0.0681*** (5.09)	0.0661*** (4.85)	0.0674*** (5.07)
RILE	-0.000348** (-2.54)	-0.000437*** (-3.00)	-0.000355** (-2.39)	-0.000387*** (-3.06)	-0.000418*** (-2.90)	-0.000352** (-2.32)
Ln_GDPpc	0.0444* (1.88)	0.0372* (1.74)	0.0598** (2.07)	0.0331*** (2.66)	0.0335*** (2.65)	0.0716*** (2.65)
GROWTH	-0.000522 (-0.62)	0.0000435 (0.06)	0.000669 (1.06)	-0.000933 (-1.04)	-0.000604 (-0.70)	0.000595 (0.73)
TRADE	-0.0000564 (-0.57)	-0.000120 (-1.61)	-0.000475** (-2.24)	0.00000134 (0.02)	-0.0000407 (-0.49)	-0.000405* (-1.84)
UNEMP	0.000474 (0.66)	-0.00112* (-1.71)	0.000365 (0.71)	0.00116* (1.79)	0.000103 (0.18)	0.00124** (2.27)
INFLATION	-0.0000489 (-0.42)	-0.0000466 (-0.38)	0.000129 (1.43)	-0.000192 (-1.52)	-0.000149 (-1.30)	0.000186*** (2.85)
Log_CO2	0.00729 (0.54)	0.00431 (0.36)	0.0137 (0.77)	0.00613 (0.77)	0.00590 (0.73)	0.0145 (0.80)
DENSITY	-0.0000266 (-0.49)	-0.0000216 (-0.45)	-0.000700 (-1.57)	-0.00000147 (-0.05)	-0.00000415 (-0.14)	-0.000816** (-2.50)
URBAN	-0.000182 (-0.47)	0.0000174 (0.05)	0.00170 (1.49)	-0.00128*** (-2.76)	-0.00111** (-2.34)	0.000763 (0.76)
INDUSTRY_SHARE	0.000450 (0.60)	0.000634 (0.92)	0.00170 (1.39)	0.000647 (1.08)	0.000715 (1.29)	0.000696 (0.79)
OLDSHARE	0.00207 (0.81)	0.00109 (0.45)	0.000667 (0.28)	0.00669*** (4.41)	0.00576*** (3.45)	0.00365* (1.73)
EU_member	-0.0284*** (-3.39)	-0.0214*** (-3.15)	-0.0295*** (-3.96)	-0.0225*** (-3.04)	-0.0202*** (-3.47)	-0.0286*** (-4.58)
EU_applicant	-0.0256*** (-3.38)	-0.0242*** (-3.55)	-0.00791 (-1.22)	-0.0462*** (-3.66)	-0.0382*** (-3.25)	-0.0103 (-1.37)
1980s-1990s		0.0297*** (4.58)	0.0275*** (2.98)		0.0203*** (2.70)	0.0167* (1.87)
1990s-2000		0.0360*** (3.48)	0.0440*** (2.81)		0.0208* (1.79)	0.0288** (1.99)
2000-2010		0.0239* (1.84)	0.0418** (2.21)		0.00534 (0.49)	0.0230 (1.59)
GINI				-0.00302*** (-3.42)	-0.00239*** (-2.92)	-0.00227*** (-2.61)
Log_SO2				0.00116 (0.24)	0.00241 (0.52)	0.00288 (0.37)
TERTIARY				0.000131 (0.87)	0.000278* (1.91)	-0.0000143 (-0.06)
Country dummies	No	No	Yes	No	No	Yes
Obs.	1251	1251	1251	949	949	949

Tab. 5: Fractional logit pooled cross-sectional estimates; the dependent variable is ENVIRONMENTALISM. coefficients and t statistics (in parentheses). Standard errors clustered at country level were applied to all models. In models 4, 5 and 6 all the observations related to countries and years underlined in tab. 1 were not considered due to missing values. * p<.10, ** p<.05, *** p<.01.

	ZIB model 1	ZIB model 2	ZIB model 3	ZIB model 4	ZIB model 5	ZIB model 6
ECOLOGICAL_PARTY	0.0759*** (2.99)	0.0695*** (2.89)	0.0739*** (3.02)	0.0760** (2.32)	0.0722** (2.30)	0.0786** (2.33)
RILE	-0.000204** (-2.30)	-0.000280*** (-2.99)	-0.000249*** (-2.71)	-0.000230** (-2.11)	-0.000269** (-2.53)	-0.000222** (-1.98)
Ln_GDPpc	0.0281* (1.80)	0.0270* (1.94)	0.0413** (2.55)	0.0264*** (3.46)	0.0290*** (4.05)	0.0441** (2.36)
GROWTH	-0.000330 (-0.57)	-0.0000455 (-0.09)	0.000300 (0.57)	-0.000249 (-0.39)	-0.0000802 (-0.15)	0.000323 (0.55)
TRADE	-0.0000914 (-1.08)	-0.000121* (-1.70)	-0.000395*** (-3.41)	-0.0000984* (-1.72)	-0.000127** (-2.32)	-0.000246 (-1.57)
UNEMP	0.000206 (0.39)	-0.000637 (-1.29)	-0.0000757 (-0.19)	0.000610 (1.55)	0.0000494 (0.13)	0.000141 (0.37)
INFLATION	-0.0000527 (-0.58)	-0.0000533 (-0.63)	0.0000296 (0.39)	-0.0000931 (-1.34)	-0.0000787 (-1.26)	0.0000617 (1.09)
Log_CO2	0.0142 (1.42)	0.0109 (1.29)	0.000484 (0.04)	0.0127** (2.33)	0.0109** (2.32)	-0.00189 (-0.17)
DENSITY	-0.0000371 (-0.81)	-0.0000333 (-0.80)	-0.000325 (-1.28)	-0.0000239 (-0.75)	-0.0000233 (-0.73)	-0.000420 (-1.43)
URBAN	-0.000291 (-0.95)	-0.000176 (-0.64)	0.000493 (0.74)	-0.000870*** (-2.90)	-0.000771** (-2.50)	0.000242 (0.31)
INDUSTRY_SHARE	-0.0000225 (-0.05)	0.000138 (0.34)	0.000742 (0.96)	0.0000433 (0.12)	0.000129 (0.37)	0.000181 (0.27)
OLDSHARE	0.00159 (0.90)	0.00111 (0.66)	0.00240 (1.56)	0.00356*** (2.97)	0.00297** (2.52)	0.00342** (2.08)
EU_member	-0.0236*** (-3.08)	-0.0190*** (-3.20)	-0.0177*** (-2.64)	-0.0193*** (-2.69)	-0.0172*** (-2.91)	-0.0150* (-1.91)
EU_applicant	-0.0121*** (-3.62)	-0.0106*** (-3.07)	-0.00564 (-1.51)	-0.0177*** (-4.26)	-0.0136*** (-3.22)	-0.00470 (-1.28)
1980s-1990s		0.0159*** (4.02)	0.0107* (1.91)		0.00959*** (2.82)	0.00710 (1.47)
1990s-2000		0.0213*** (4.38)	0.0206** (2.24)		0.0131*** (3.04)	0.0163* (1.90)
2000-2010		0.0101 (1.57)	0.0158 (1.33)		0.00132 (0.27)	0.0107 (0.92)
GINI				-0.00188*** (-3.22)	-0.00157*** (-2.66)	-0.000871* (-1.74)
Log_SO2				0.000181 (0.04)	0.000993 (0.26)	0.00377 (0.61)
TERTIARY				0.0000629 (0.70)	0.0000997 (1.08)	-0.000137 (-0.57)
Country dummies	No	No	Yes	No	No	Yes
Obs.	1251	1251	1251	949	949	949

Tab. 6: Zero-inflated Beta regression pooled cross-sectional estimates the dependent variable is ENVIRONMENTALISM. coefficients and t statistics (in parentheses). Standard errors clustered at country level were applied to all models. In models 4, 5 and 6 all the observations related to countries and years underlined in tab. 1 were not considered due to missing values. * p<.10, ** p<.05, *** p<.01.

However, this result is clearly reported only by the FRACLOG estimates while it is slightly significant with OLS and totally insignificant in the ZIB model.

Inconsistent results are found for UNEMP for which a negative barely significant sign is reported in some of the OLS and FRACLOG specifications run with the complete sample while an opposite but even in this case slightly significant positive result is found when moving to the reduced sample. Besides, also this result is not robust across specifications and is no longer significant when looking at the ZIB models.

On the whole, looking at the results for these three variables, there is not a highly significant relation between parties' appeal to environment-related policies in order to gain votes and macroeconomic conditions and, therefore, environment is not clearly interpreted as a "pro-cyclical good".

IV.3 Inequality hypothesis: strong support

Definitely clearer and more robust results are obtained for the inequality hypothesis which could be tested only with the reduced sample due to missing values reported by the GINI variable. The GINI index reports a negative coefficient in all the specification run with the OLS model and this result is strongly confirmed by the FRACLOG and the ZIB models. In the OLS model this negative correlation of economic inequality with parties' environmentalism turns out to be statistically significant in models 4 and 5 while in model 6, after the inclusion of country dummies, the coefficient for this variable is not significant anymore. Besides, in the FRACLOG and ZIB models the negative sign for this variable is statistically significant also when countries dummies were added.

These results suggest that the higher (lower) countries' inequality is the lower (higher) is the space devoted to environmentally-oriented policies in parties' political manifestos. This leads to accepting the inequality hypothesis according to which the dialogue on environmental issues is favored by reduction of social conflicts arising from unequal wealth distribution.

IV.4 The correlation with international integration: support

A negative correlation is found between environmentalism saliency in parties' manifestos and countries' economic openness as measured by the variable TRADE. This result is highly statistically significant in the OLS, FRACLOG and ZIB specifications that include country dummies and investigate the whole sample at our disposal (model 3). Some significance, anyway, is also found in the other specifications.

According to this results trade openness and environmental policy saliency in parties' manifestos seem to be mutually exclusive.

IV.5 Ecological approach: mixed results

The correlation of parties' environmentalism with objective measures of environmental degradation does not find strong support in our results.

More in detail, Log_SO2 reports non significant results in all the models and specifications adopted. Moreover, the Log_CO2 variable reports inconsistent and statistically non significant results in all the OLS specifications and a positive but not significant impact on parties' environmentalism in all the FRACLOG specifications. When turning to the ZIB models, this variable shows a positive and $p < 0.10$ significant effect on parties' environmentalism when the restricted sample is considered and only in models 4 and 5. While this result is in line with expectations, it does not hold when country dummies are included in model 6.

According to these findings the saliency of environmental concern in political parties programs is not strongly correlated with national objective environmental degradation as measured by air pollution. In other words, for political parties it is not worthwhile to provide more environmental-oriented electoral programs as a response to a higher objective level of toxic emission.

Also the two variables which are presumably correlated with citizens' subjective measures of environmental degradation do not exhibit clear results.

URBAN reports inconsistent results. In model 3 and model 6 calculated through OLS it turns out to be highly significant ($p < 0.01$) and a positive coefficient is found. This finding reveals that the saliency of environment related topics in parties manifesto is positively correlated with the proportion of population living in cities which presumably affects people's perception of environmental. Nevertheless, this result is not robust across the models, as its significance is not confirmed by model 3 and 6 run by FRACLOG and ZIB. Furthermore, in the FRACLOG and ZIB model 4 and 5, where country dummies are not considered, URBAN shows an opposite negative result. This reveals that this variable presumably has different effects when moving from a between to a within country analysis.

Not completely clear results are also obtained for the DENSITY variable. It reports a negative correlation in all our models and specification but this result is significant only in models 3 and 6 run with OLS and in model 6 run with FRACLOG. No significance is reported by the ZIB estimations. Also in this case this mixed results does not allow to clearly support the hypotheses concerning the link between citizens' subjective feeling of environmental degradation and political parties' environmentalism.

IV.6 The impact of political variables: strong support

Moving to the examination party-level political covariates, the OLS estimates show that parties' environmental awareness is strongly significantly correlated with their ideological orientations. This result is confirmed by the FRACLOG and the ZIB models.

First, as it was expected, the dummy variable ECOLOGICAL_PARTY shows a positive and highly significant coefficient, meaning that environmentalism is considerably more salient for these kind of parties. Looking at the coefficients in the OLS specifications and at marginal effects in the FRACLOG and ZIB specifications, among our covariates the ECOLOGICAL_PARTY dummy is the variable that reveals the highest correlation with the saliency of environmentalism in parties' manifestos.

Second, our findings strongly support the hypothesis that the more right-wing (left-wing) oriented parties are, the less (more) they appeal to environmentalism to catch votes. In other words, environmental concern is a subject which is significantly more used by left-wing parties in order to attract the attention of the electorate. This result clearly provides a robust

Europe-centered confirmation of the results provided by the contributions who analyzed American political parties (Tognacci et al., 1972; Constantini and Hanf, 1972) and by those who found a positive link between governments left-wing orientation and awareness for climate policy looking at recent OECD data (Scruggs, 1999; Garmann, 2014).

IV.7 Results for control variables

Moving to the examination of the results obtained for control variables, it is worth noting that only few of them are found to be significantly correlated with the saliency of environment-related proposals in parties' manifestos.

A positive *ceteris paribus* correlation with our dependent variable is found for the INDUSTRY_SHARE variable in all our specifications and models but this result is never significant; it follows that the saliency of industrial production in national economies does not translate in a higher or lower environmentalism in the political arena.

Not significant results are also obtained for the TERTIARY variable which was supposed to be a good proxy of countries' level of education. According to this finding, parties appeal to environmentalism in order to catch votes does not depend upon citizens' education.

OLDSHARE, instead, reports a significant and, quite surprisingly, positive correlation with our dependent variable in almost all the models based on the restricted sample. This result is robust to model shifting from OLS to FRACLOG and ZIB. Not significant results, instead, are obtained when the whole sample is considered.

Our OLS findings clearly indicate that parties in the EU area and EU applicants do pay lower attention to environment-related topics in order to catch votes. Indeed, the dummies that identify EU member countries and applicants countries show a highly significant negative correlation with our dependent variable in all the specifications. This result is strongly confirmed by the FRACLOG and the ZIB models. This finding may arise from the high pressure that EU policy and institutions put on environmental issues which, for this reason, may be not considered anymore by parties as national issues they can appeal to in order to gain votes.

Finally, decade's dummies reveal that political parties do devote more space in their programs to environment-related issues during the 1980s and the 1990s compared with 1970s. With few exceptions, this result is robust across models and to alternative specifications.

V. Conclusion

In recent years a broad literature has theoretically and empirically analyzed in profound way the determinants of individuals' environmental awareness. In democratic countries citizens' preferences have to translate into political parties before they can turn into environment friendly policies. At the same time, parties' do exploit environmentalism in order to catch votes. This is why an empirical analysis of the drivers of political parties' supply of environmentalism is particularly interesting.

To the best of our knowledge, this paper provided the first empirical analysis of the drivers of political parties' environmentalism in European countries using data that cover all the major parties that took part in national elections over more than 30 years, from the 1970s to the present day.

Quite surprisingly, our results show that political parties' supply of environmentalism is not clearly significantly correlated with variables that measure objective environmental degradation nor it is clearly correlated with variables that should affect citizens' subjective feelings of this degradation. Instead, it is strongly correlated with economic variables; indeed, our results strongly support the prosperity and post-materialism hypothesis by revealing that parties' environmentalism is positively correlated with countries' economic wealth. Furthermore, we showed that inequality in wealth distribution negatively affects the political supply of environmentalism since it presumably intensifies social conflict and impedes the discussion of environment-related topics. Finally, we provided robust evidence that parties' ideological orientation is a significant driver of environmentalism with left-wing parties who are significantly more environmental-friendly than right wing ones.

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