



Analysis

Actions and intentions to pay for climate change mitigation: Environmental concern and the role of economic factors



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ABSTRACT

This study empirically investigates the relationship between an individual's concern about climate change and one's actions reducing the effects of climate change and intentions to pay for mitigating such effects. Particular emphasis is placed on the role of economic factors that may serve as a contextual factor influencing these relationships. Based on data from the Life in Transition Survey covering individuals from 35 countries in 2010, this study uses information regarding the financial crisis of 2008 to inform about economic factors. The results suggest that respondents exhibiting higher climate change concerns are not only more likely to intend to pay for mitigating the effects of climate change, but they are also more likely to take actions in order to minimize such effects. The results also indicate that economic factors only have a moderating effect on the relationship between higher climate change concerns and actions. Furthermore, the results also point to the relevance of a country's state of economic development.

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1. Introduction

What influences the individual's taken actions reducing the effects of climate change or the intention to pay for mitigating these effects? From an environmental policy perspective, answering this question gains interest because it may bring a better understanding of the nature and workings of individual support for governmental mitigation policies (Corner and Randall, 2011; Longo et al., 2012) – an area in which public opinion may be crucial (Dunlap and Mertig, 1995).

Existing literature puts emphasis on the investigation of the relationship between individual concerns about the natural environment and pro-environmental intentions and actions finding a positive association (Liebe et al., 2011; Mostafa, 2011; Poortinga et al., 2004; Stern et al., 1995). Recent studies also find that climate change concern positively relates to the individual's propensity to pay for mitigating the effects of climate change (Aker and Bennett, 2011; Carlsson et al., 2012; Veronesi et al., 2014) and may also positively relate to pro-environmental behavior (Steg and Vlek, 2009). Moreover, the results from a recent study by Wicker and Becken (2013) suggest that people who are concerned about climate change are more likely to take action to mitigate climate change and are more supportive of governmental mitigation policies.

Another link is perceived in the relationship between economic indicators (e.g. income or wealth) and the demand for environmental public goods (Franzen and Meyer, 2009), which may hold especially in the case of global climate change mitigation, as opposed to solving local

environmental problems. Better-off individuals demand more of such goods, giving rise to a positive relationship between an individual's economic well-being and pro-environmental intentions (Deressa et al., 2011; Dorsch, 2014; Jacobsen and Hanley, 2009).

Studies also suggest that the strength of the positive relationship between environmental concern and environmental behavior is affected by contextual factors (Guagnano et al., 1995). Diekmann and Preisendörfer (2003) suggest the “low-cost hypothesis” in order to highlight the importance of the economic circumstances of the individual. The authors argue that individual environmental concern translates into pro-environmental behavior if the cost of doing so is low. For instance, empirical evidence in a study by Derksen and Gartrell (1993) and Diekmann and Preisendörfer (2003) seems to support the view for a moderating effect with regard to recycling behavior which may also be relevant in the context of other pro-environmental behaviors, like travel-mode choice (Hunecke et al., 2001). An issue less addressed in the existing literature, however, is how moderating effects of economic factors unfold when individuals are confronted with more complex environmental problems such as climate change (Tol, 2009).

In this study, I empirically investigate the association between climate change concern and (1) individual actions to reduce the effects of climate change, and (2) the individual intention to pay for mitigating such effects. Furthermore, I examine whether economic factors moderate the strength of the relationship between climate change concern and actions and intentions associated with climate change mitigation. Using data from the Life in Transition Survey II conducted in 35 countries in 2010, data concerning the financial crisis of 2008 are analyzed to inform about economic factors. The results suggest that climate change concern has a positive effect both on the individual's actions

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and on the intention to pay for climate change mitigation. Furthermore, negative economic effects of the financial crisis as experienced by the individual decrease the probability that individuals intend to principally pay for the combat of climate change, but do not diminish actions taken to minimize such change. Moderating effects, however, are only significant with regard to actions linked to climate change mitigation. Concerning actions, the results also point to the relevance of the level of economic development of the country in question, because significant moderating effects are only found in economically less developed countries.

The article is structured as follows: [Section 2](#) provides a theoretical framework; [Section 3](#) describes the empirical strategy used in the study; [Section 4](#) presents the empirical results; [Section 5](#) discusses the results; and [Section 6](#) provides some conclusions.

2. Theoretical Framework

One of the most challenging problems confronting society in the coming years is the impact of climate change. According to the Intergovernmental Panel on Climate Change (IPCC, 2007) it will bring an increase in the frequency and magnitude of extreme events, like droughts, floods, heat waves, and windstorms. Among all environmental problems those associated with climate change seem to be outstanding, because “Climate change is [...] larger, more complex, and more uncertain than any other environmental problem” (Tol, 2009, p. 29).

Governments worldwide are designing and implementing programs in order to adapt to, and mitigate the effects of, climate change (European Commission, 2006). While different governments make use of different policy instruments (see e.g. Aldy et al. (2003) for an overview of policies addressing climate change problems), environmental policies typically come at a cost to the individual – like higher prices or taxes – and, therefore, explain the interest of governments in whether taxpayers are willing to support them (Longo et al., 2012).

A main determinant of an individual's pro-environmental intentions is environmental concern. Individual environmental concern can be described as the awareness that the state of the natural environment is threatened by ecological degradation. Individuals exhibiting such concern may also be supportive of efforts to solve ecological problems (Dunlap and Jones, 2002). The theoretical link between environmental concern and ecological intentions may be illustrated with the help of the theories of reasoned action and planned behavior (Ajzen, 1991; Ajzen and Driver, 1992; Ajzen and Fishbein, 1980; Fishbein and Ajzen, 1975), which argue that the intentions of individuals are the outcome of general beliefs and attitudes. Based on the theory of Ajzen and colleagues, Stern et al. (1995) suggest a framework, also known as the ‘new ecological paradigm’, in which general attitudes to the environment – of which environmental concern is an example – positively affect pro-environmental intentions. Indeed Stern et al. (1995) suggest that environmental concerns are causal antecedents of pro-environmental intentions and behavior. Poortinga et al. (2004) empirically investigate motivational determinants of environmental behavior. The authors also find that environmental concerns positively affect environmental intentions, as well as the willingness to support policy measures related to environmental regulation (Poortinga et al., 2004). Interpreting statements referring to the willingness to pay for an environmental good as an environmental intention, Cooper et al. (2004), Kotchen and Reiling (2000) and Liebe et al. (2011) show that the effects of general environmental concern are significantly and positively related to pro-environmental intentions.

Much attention is also paid to Inglehart's (1990) theory on the role of values with respect to pro-environmental intentions (Mostafa, 2011). In his theory, individuals living in economically more developed countries exhibit post-materialist values like quality of life and quality of the environment, because resources to satisfy basic needs are abundant. In

contrast, Dunlap and Mertig (1997) argue for the “globalization hypothesis” based on the observation that the ratio of individuals exhibiting pro-environmental intentions in less economically developed countries is similar to that in more advanced economies. This notion gave rise to a modification of Inglehart's hypothesis, leading to the objective problems/subjective values theory, which accounts for the fact that people in poorer countries may experience severe local environmental problems, making them concerned about the natural environment (Inglehart, 1995). Therefore, as Fishbein and Ajzen (1975) already pointed out, it may be necessary to apply a similar level of specificity of environmental concern in order to adequately examine a particular environmental behavior or intention.

Given the theoretical arguments that establish the influence of environmental concern on environmental intentions (Stern et al., 1995), similar mechanisms could also be expected with regard to the relation between environmental concern and the willingness to pay for the mitigation of climate change effects. Veronesi et al. (2014) find that perceptions of climate change with regard to long-term changes in temperature and/or an increase in heavy rainfall positively affect the willingness to pay for the reduction of such risks. Similarly, taking predicted future average temperatures as an indicator of climate change, Akter and Bennett (2011) show that individuals who accept these predictions are likely to exhibit a higher willingness to pay for climate change mitigation. Conversely, people who believe that temperatures are not rising globally are less likely to be willing to pay for such preventive action (Carlsson et al., 2012).

Another crucial determinant of pro-environmental intentions is the demand for environmental quality, which changes in line with the individual's budget constraints (Baumol and Oates, 1988; McConnell, 1997) – i.e. better-off individuals demand better environmental quality than poorer people (Franzen and Meyer, 2009). Theoretically one should therefore expect a positive relationship between economic well-being and the demand for environmental public goods. The influence of economically related variables (e.g. income or wealth) on environmental behavior has been tested empirically in numerous studies (among others, Carlsson et al., 2012; Carson et al., 2001; Deressa et al., 2011; Dorsch, 2014; Jacobsen and Hanley, 2009; Veisten et al., 2004; Liebe et al., 2011; Macmillan et al., 2001) mostly providing evidence for a positive association.

Scholars have also put forward the notion that the explanation of pro-environmental behavior falls short if internal and external factors are viewed separately. Derksen and Gartrell (1993) empirically investigate the association between environmental concern and recycling behavior. In particular, they compare individuals living in a community that provides easy access to a recycling program with individuals from communities that do not. Results indicate that environmental concern does not significantly relate to recycling behavior, but that individuals exhibiting environmental concern and living in a community with a recycling program are significantly more likely to recycle than if their community has no such program (compare a similar study conducted by Black et al., 1985 in the context of household energy conservation). Later, Guagnano et al. (1995), building on work by Stern and Oskamp (1987) and Schwarz (1977) suggest a model in which the strength of the association between individual attitudes toward the natural environment (internal factors) and pro-environmental behavior is affected by external conditions (e.g. economic forces). In a related study by Diekmann and Preisendörfer (2003), the authors emphasize the role of the economic environment as a contextual factor influencing the association between environmental attitude and behavior. They suggest the ‘low-cost hypothesis’ stating that pro-environmental attitudes will have few or no effect on pro-environmental behavior in situations characterized by high costs. Similarly, Turaga et al. (2010) argue that pro-environmental behavior is more likely to arise when the inconvenience and cost of taking action is small. The related question whether environmental concern translates into environmentally conscious behavior might also be important for environmental policy. In a recent study by

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