

LEADING BY EXAMPLE? SPILL-OVER EFFECTS OF THE EUROPEAN GREEN CAPITAL AWARD ON CITIZENS' CLIMATE PROTECTION ACTIVITIES

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Overview

The sixth assessment report of the Intergovernmental Panel on Climate Change (2022) explicitly recognizes the role of localized approaches to limit global warming, and advises concrete measures such as retrofitting municipal buildings, supporting the development of public transport and creating infrastructure that supports cycling and walking. In addition to these direct measures, municipalities' exemplary climate protection activities may exert positive spillover-effects on other actors. Since 2010, the European Green Capital Award (EGCA) is granted annually by the European Commission to a European city with more than 100.000 inhabitants in recognition of its past local efforts to improve the environment, its commitment to ongoing and ambitious goals for further environmental improvement, and its ability to act as a role model for other cities. Previous research has not investigated whether receiving such an award or, more generally, whether a municipality's environmental performance affects citizens' pro-environmental activities. Insights from the management and the behavioral economics and psychology literature imply that 'leading by example' may indeed have positive spillovers. For example, findings from the literature on environmental management suggest that employees engage more in pro-environmental activities when they perceive their organization or managers to be committed to pro-environmental activities and to lead by example (Bansal and Roth, 2000; Boiral et al., 2009, 2015; Egri and Herman, 2000; Yaffe and Kark, 2011). These studies usually rely on correlational analysis. In comparison, empirical work in the behavioral economics and psychology domains typically employs experiments which allow causal inference. For example, recognizing the public goods character of environmental activities, the behavioral economics and psychology literature on motivational crowding suggests that external circumstances such as policy interventions may crowd in an individual's moral motivation to provide a public good (Nyborg and Rege, 2003; Frey and Stutzer, 2008, Bó, Forster, and Putterman, 2010).

In this study, we investigate the causal effects of municipal climate protection leadership on citizens' pro-climate activities, using the winner of the 2022 European Green Capital Award (EGCA), i.e. the city of Grenoble (France), as an example. Our study adds to the empirical literature on the effects of leadership on environmental performance, yet, unlike the thrust of the managerial literature, it allows for causal rather than correlational inference. To our knowledge, ours is the first study to empirically assess the effects of the EGCA on pro-environmental activities by citizens. Further, our analysis adds to the growing empirical literature estimating individuals' willingness-to-pay (WTP) to offset their carbon footprint.

Methods

We conducted an online survey in December 2021 employing an existing citizen panel in the metropolitan region of Grenoble (<https://www.grenoble-em.com/panel-de-recherche-du-territoire-grenoblois>). The final sample consisted of 617 adults. The main objective of the study was to analyse the effect of municipal climate policy leadership on its citizens climate activities, measured as their WTP to offset their greenhouse gas emissions. To this end, we randomly assigned participants into a control group (T0) and a treatment group (T1). Individuals in T0 received no information about the city of Grenoble's climate policy performance. Individuals in T1 received the following information:

The city of Grenoble is also committed to climate protection. Grenoble has been named European Green Capital 2022 by the European Commission in recognition of its achievements in urban sustainability. In particular, the city of Grenoble has already reduced its greenhouse gas emissions by 49% since 2005 thanks to an ambitious energy policy aimed at reducing the energy consumption of buildings and public lighting and at renewing and reducing its car fleet.

Participants in T1 were also shown an official picture of the 2022 European Green Capital award. Participants in both groups were then informed that greenhouse gas emissions caused by human activity may be offset by activities elsewhere, such as building wind and solar power generation facilities, reforestation, or the like. To elicit participants' WTP to offset their carbon footprint, we informed participants in both groups that they could offset the greenhouse gas emissions that they had caused through providers of offsetting services (e.g. atmosfair, myclimate) by paying a corresponding financial amount. Our survey therefore included the following single-bounded open-ended question:

How many euros at most would you be willing to pay privately to offset the greenhouse gas emissions you caused in 2020?

To limit hypothetical bias, we employed a strong cheap talk design. Further, statistical tests on balancing and manipulation checks suggest that randomization was successful among students, and that the treatment was effective.

Because a substantial share of participants indicated that they would spend zero euros to offset their carbon footprint, we estimated a “corner solution” Tobit model. We thereby distinguish between the effects of the treatment on the extensive margin, i.e. the WTP a positive amount, on the intensive margin, i.e. the WTP conditional on being willing to pay a positive amount, and on the average WTP.

Results

The findings suggest that providing the information that Grenoble had received the 2022 European Green Capital award increases citizens' propensity to offset their carbon footprint by 5.6 percentage points (extensive margin), increases the conditional WTP by about 16 euros (intensive margin), and increases the average WTP by about 23 euros. We further find that the treatment effect on the average WTP decreases with increasing age, and is statistically significant for participants younger than about 40 years of age only, corresponding to about 60% of our sample. Additionally, we find the treatment effect to be statistically significant for individuals with net monthly income levels between about 2000 euros and about 3500 euros, i.e. almost half our sample. On average, participants in our sample of citizens in the Grenoble metropolitan area were willing to pay about 26 euros/t CO_{2eq}, which is at the lower end of estimates typically found in related studies (see Nemet and Johnson, 2010).

Conclusions

Employing survey data with a citizen panel in the region of Grenoble, the 2022 EU Green Capital, we find that environmental leadership by a municipality may induce substantial climate protection activities by citizens. Our results on the heterogeneity of treatment effects suggest that communication measures highlighting the municipal environmental leadership should target individuals below 40 year of age and with a net monthly income ranging between 2000 euros and 3500 euros. Finally, the average WTP to offset GHG emissions observed in our survey is substantially lower than the carbon tax levels typically deemed to be consistent with meeting ambitious climate targets (World Bank, 2022). Thus, relying on individuals to voluntarily lower their GHG emissions will likely not be sufficient to meet the 1.5°C target.

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