Research Note

Tracking state trends in environmental public opinion

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A R T I C L E   I N F O

A B S T R A C T

Trends in state-level public opinion on the environment within the U.S. are examined, using data from the General Social Survey (GSS) from 1976 to 2008. Multilevel Regression and Post-Stratification (MRP) approach estimates public support for environmental spending at the U.S. state-level over three decades. This allows for an analysis of inter-state homogeneity of environmental public opinion, over the latter half of the twenty century. The findings indicate state-level trends mirror those at the national-level, but state-level public opinion is becoming more analogous over time.

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1. Introduction

Well-tracked are United States (U.S.) national-level trends in environmental public opinion since the early 1970s (Daniels, Krosnick, Tichy, & Tompson, 2013). While interest groups and experts voiced a concern over environmental conditions previously, widespread general public support did not emerge until the mid-1960s (Daniels et al., 2013; Dunlap, 1991, 1995; Erksine, 1972). This was in response to mobilization of interest groups and political leaders, culminating in Earth Day's establishment in 1970 (Dunlap, 1995; Erksine, 1972). Over the next decade, though, there was a slight decline in public support as issue salience faded. New environmental policies based in lax regulation, reductions in federal environmental efforts, and devolution of policy implementation caused a ground swell of environmental activism led to a resurgence of environmental support in the 1980s, peaking in 1990 with Earth Day's 20th anniversary (Daniels et al., 2013; Dunlap, 1991, 1995). Afterwards, fading concern for traditional environmental issues, as air, water, and land quality caused public support to subside to moderate levels and remained stable until the early 2000s (Andrews, 2006; Bosso & Gruber,

2006; Daniels et al., 2013; Nordhaus & Shellenberger, 2007). Since the mid-2000s, a marginal increase in public support has occurred, due to new environmental issues such as climate change (Daniels et al., 2013). However, only a single survey item strictly follows this general pattern: support for environmental spending. Fig. 1 displays the percentage of General Social Survey (GSS) respondents from 1974 to 2010 that responded the U.S. is spending too little, about the right amount, or too much on the environment, which is consistent with the described pattern from previous scholarship (Smith, Marsden, Hout, & Kim, 2013). Other items tracking environmental public opinion tend to follow a relatively similar pattern; though, variation exists. Extant literature supports the general trend outline above as the best approximation and most policy scholars contend the spending item is the best articulation of environmental public attitudes (Daniels et al., 2013).

National trends only tell part of the story of environmental policy. There is far less tracking of state-level public opinion and fewer analyses of variability. State-level trends are particularly significant in environmental policy as states enjoy considerable control and responsibility in both their own policymaking and federal program management (Ringquist, 1993). Congress adopted all legislation, which makes up the backbone of U.S. environmental pol-

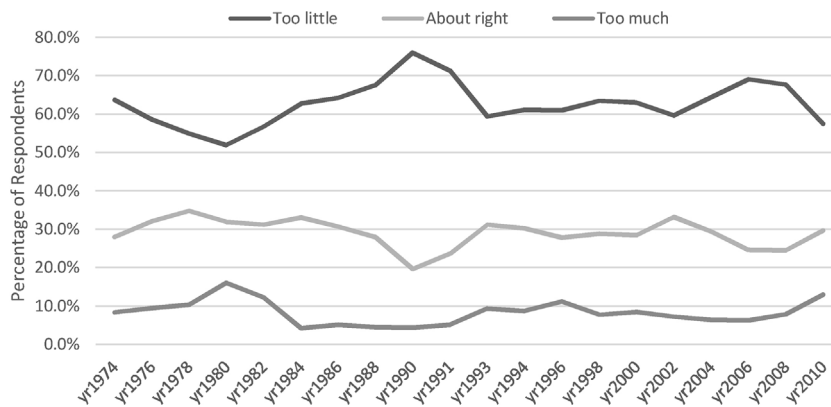*E-mail address:* lukefowler@boisestate.edu

Fig. 1. National trends of public opinion on environmental spending, 1974–2010.

icy such as Clean Air Act (CAA), Clean Water Act (CWA), Safe Drinking Water Act (SDWA), and Resource Conservation and Recovery Act (RCRA) (ECOS, 2014). However, states make up the constituencies for both the U.S. House of Representatives and U.S. Senate, so it goes to reason state-level public opinion would have impacts that are more direct on members of Congress than national public opinion (Bartels, 1991). Specific to environmentalism, evidence is contradictory with some scholars finding environmental issue salience is not strong enough to effect voting behavior when considering trade-offs with economics (Daniels et al., 2013; Ladd & Bowman, 1995; Repetto, 2006). Nevertheless, with environmental spending, there is strong support to suggest spending priorities are an issue that drives voter behavior, and there are connections between state-level public opinion and Congressional voting patterns (Alvarez & Nagler, 1998; Daniels et al., 2013; Davis & Wurth, 2003; Davis, Wurth, & Lazarus, 2008; Fowler, 2016). Furthermore, states serving as "laboratories of democracy" have the opportunity to go beyond the minimum standards set by the federal government. Extant scholarship well documents these policy experiments and the subsequent trends in distribution (Lowery, Gray, & Baumgartner, 2011; Shipan & Volden, 2012; Tarr, 2001; Volden, 2006). The "race to the top" has resulted from localized socio-economic and political factors, which value the social and economic benefits associated with a cleaner environment (Fowler and Breen, 2013, 2014; Hanemann, 2007; Rabe, 2013).

Finally, most major federal environmental programs rely on state governments for implementation, with all 50 states having delegated authority over CAA programs; 46 states, over CWA programs; 49 states, over SDWA programs; and 48 states, over RCRA programs (ECOS, 2014). While there is a common set of standards, policy outcomes largely vary, with scholars connecting these results to socio-economic and political factors including public opinion (Hoornbeek, 2005; Ringquist, 1993; Sapat, 2004; Woods, 2006). Thus, state-level public opinion has large implications for policy processes as states represent the level where variation in efforts and support occurs. Furthermore, socio-economic and environmental conditions heavily influence environmental public opinion, as well as political actions from advocacy groups and the gov-

ernment (Daniels et al., 2013). None of those factors has remained static between states over time. These variations can have important implications for understanding policymaking and administration in this area, especially as it relates to policy distribution and innovation. Across policy areas, states tend to follow national trends but exhibit heterogeneity at the same time (Pacheco, 2014). While it is likely states will follow the same general pattern in environmentalism, there is significant room for variation between states and within years.

2. Methodology

2.1. Estimating state-level public opinion

While aggregation techniques have been popular in the past, they have come under criticism for lack of sophistication and high potential for biased estimates for small states or for missing temporal shifts when data is pooled over long periods of time. To compensate for those shortcoming, Multi-level Regression and Post-Stratification (MRP) was developed to provide a method of better utilizing all the information in a dataset to provide more accurate estimations using smaller sample sizes over shorter periods of time. MRP uses a multi-level model of demographic and geographic predictors to estimate individual responses within a population, and then weights those estimations based on actual populations. According to Lax and Phillips (2009b), "in this way, all individuals in the survey, no matter their location, yield information about demographic patterns which can be applied to all state estimates, and those residents from a particular state or region yield further information as to how much predictions within that state or region vary from others after controlling for demographics" (p. 109).

The process involves three steps. First, we estimate multi-level models from predictor variables (Lax & Phillips, 2009b; Pacheco, 2011; Park, Gelman, & Bafumi 2006; Warshaw & Rodden, 2012). Multi-level modeling in its simplest form is an extension of ordinary least squares (OLS) regression. MLM models the relationship within each group at the lower levels and the variation between groups at all levels. As a result, relationships are modeled for each