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Voter support for environmental bond referenda

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ABSTRACT

Open space and recreation land protection can provide a variety of community benefits. Limited government resources, however, may preclude land acquisition and enhancement activities. State governments have thus turned to "bond referenda" as a mechanism to increase financial resource capacity to provide public goods. The purpose of this study is to explore two groups of factors (resident characteristics and land use types) related to voter support for an environmental bond in the state of Rhode Island, USA. A spatial regression model is used to explore these relationships. The results show that voting districts with high-density residential land use and a non-white population are more supportive of the environmental bond referendum, as are voting districts with more open space that is publicly accessible and that have recreational amenities. Voting districts with a high percentage of natural habitat land are less supportive of the bond referendum. The findings suggest government agencies should pay more attention to the equitable distribution of public goods and to providing more open space land that is public accessible.

1. Introduction

Open space protection provides a variety of community benefits. Land protection and improvement may enable greater access to, and usability of, active and passive recreational amenities by residents. Open spaces can also be used to maintain cultural and historical landscapes and support environmental ecosystems. Moreover, open space and other environmental amenities can have a positive impact on residential property values (Crompton, 2001). However, land acquisition, preservation and enhancement to achieve these and other community benefits can be costly. Local and state governments have therefore turned to bond referenda as a mechanism to "receive now and pay later" (Goldsmith, 2005; Nelson et al., 2007).

Bond referenda is a common type of non-voter initiated referenda that are proposed and referred to the ballot by elected officials (Zimmerman, 2001). They are the most widely used state level funding mechanism, and are second only to taxes at the local level, for open space preservation (Banzhaf et al., 2010). Scholarship on environmental voting at the county and municipal level of government has explored resident support for referendum, including both why a bond referendum is proposed and the likelihood of its passage (Coan and Holman, 2008; Howell-Moroney, 2004a,b; Kotchen and Powers, 2006; Romero and Lisero, 2002; Salka, 2001).

We advance this literature on voter support for environmental bond referenda in two ways. First, we focus on voter support at the voting district level for a statewide recreation enhancement and open space protection referendum. Whereas previous research focuses on vote outcomes at the municipal and/or county level (Banzhaf et al., 2010), our focus on vote outcomes in the state of Rhode Island at the voting district level allows us to examine the variation within communities on land use patterns that are expected to influence voting behavior (Solecki et al., 2004). Second, our analysis at the voting district level enables us to examine more precisely the relationship between the characteristics of residents and vote outcomes that previous research identifies as important predictors of support for bond referenda (Howell-Moroney, 2004a,b; Kline and Wichelns, 1994; Kotchen and Powers, 2006; Nelson et al., 2007; Schläpfer and Hanley, 2003; Solecki et al., 2004). We contribute to the research on bond referenda by accounting for the differences within communities on these factors that may influence voter preferences for open space protection.

In the following section, we review the extant literature on bond referenda and the factors expected to influence vote outcomes. We then describe our methodological approach including a description of our study area, unit of analysis, variable measurement, and analytical strategy. We discuss the results and conclude with implications for land use policy and directions for future research on this topic.

2. Literature review

There is extensive research that seeks to explain how and why people "minimize the negative impacts of one's actions on the natural and built world" (Kollmuss and Agyeman, 2002. P. 240). These actions

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include what Stern (2000) refers to as "non-activist behaviors", such as voting. The rapid pace of suburban development and its impact on the environment has led to more widespread acceptance by residents of environmental protection initiatives and greater participation in voting for funding that will support land protection (Thi Nguyen, 2009). While local governments often use regulatory and incentive tools, such as transfer of development rights and cluster subdivisions, to protect open spaces and mitigate the impacts of development on a community (Hawkins, 2014), Daniels and Lapping (2005) argue that residents have become more engaged in land preservation efforts through voting because of the perceived inadequacy of such mechanisms.

Using primarily The Trust for Public Land's LandVote database, scholarship has examined the factors that influence voter approval of bond referenda that fund land acquisition for conservation and recreational purposes at the county and municipal level (Banzhaf et al., 2010; Kline, 2006; Kotchen and Powers, 2006; Nelson et al., 2007). Much of this literature, based on the seminal work by Deacon and Shapiro (1975), link support for bond referenda to two primary factors: 1) local socio-economic characteristics of voters, and 2) land use characteristics (Heintzelman et al., 2013; Kahn and Matsusaka, 1997; Kline and Wichelns, 1994). These factors are described as elements of a system of human, governance and resource interactions in which individuals' views and actions on the environment depend on "who they are" and on the environment in which they reside (Hamilton et al., 2010; Ostrom, 2009). In the following sections, we briefly review the literature on these two factors that influence voter support for environmental bond referenda.

2.1. Resident characteristics

Resident support for environmental protection in general, and bond referenda specifically, vary along several key demographic and economic variables. Research suggests cities with highly educated populations are more willing to dedicate resources that promote environmental sustainability (Wang et al., 2015), and municipalities with more educated residents are found to be more supportive of open space referenda (Howell-Moroney, 2004a,b; Kline and Wichelns, 1994; Kotchen and Powers, 2006; Nelson et al., 2007; Schläpfer and Hanley, 2003; Solecki et al., 2004). Similarly, voter age is shown to be an important predictor of environmental preferences, with younger people more likely to support pro-environmental policies (Kahn, 2000).

Racial characteristic of residents is also an important factor in explaining community support for environmental protection. Romero and Lisero (2002), for example, find cities with a greater proportion of whites are more likely to propose bond referenda. Some suggest that although open space preservation reflects environmental stewardship, it also can be used for exclusionary purposes (Schmidt and Paulsen, 2009). Studies on local land use controls find cities that use more exclusionary zoning practices also tend to be whiter (Carruthers and Ulfarsson, 2003; Ulfarsson and Carruthers, 2006). Land uses become exclusionary when they restrict the supply and variety of housing types and densities available to lower income households. The preservation of open space through bond referenda can potentially reduce the supply of land for housing units that are more affordable to a lower income and typically non-white population (Schmidt and Paulsen, 2009; Zabel and Paterson, 2006).

The unequal access to environmental goods has emerged as one centerpiece of a growing environmental justice literature (Agyeman, 2005; Heynen et al., 2006; Jennings et al., 2012). Compared to white and affluent neighborhoods, research shows that poor and minority neighborhoods are often more exposed to negative environmental impacts of land use planning decisions or are underserved by environmental benefits (Walker, 2012). Differences in access to environmental goods likely motivates non-white populations to support greater funding for the environment and parks (Kahn, 2002), and reinforces environmental justice arguments for greater participation by minority groups in voting and other decision making processes to promote integrated social and environmental quality outcomes (Agyeman, 2005; Wheeler, 2013; Mandarano and Meenar, 2017).

Because bond referenda ultimately means greater expenditures or a reallocation of public resources to pay off debt, studies assume more wealthy and economically secure communities are more willing to vote "yes" on a bond referendum (Solecki et al., 2004). For example, Howell-Moroney's (2004b) study of municipalities in Pennsylvania and New Jersey found that wealthier communities place open space measures on the ballots more often, and Romero and Lisero (2002) find cities with a higher median household income are more likely to propose bond referenda. In other studies, low unemployment rates and higher income levels have a positive effect on vote outcomes for bond referenda (Howell-Moroney, 2004a,b; Kline and Wichelns, 1994, 1998; Kotchen and Powers, 2006; Nelson et al., 2007; Schläpfer and Hanley, 2003; Solecki et al., 2004). Similarly, Kotchen and Powers (2006) and Schmidt and Paulsen (2009) show communities with higher percentages of homeowners are associated with increased voter support for funding open space protection.

2.2. Land use types

Community context is a second major factor that influences support for environmental bond referenda. Urban sprawl - low-density auto dependent land development - has been characterized as producing negative environmental impacts on water, air and energy resources (Kahn, 2000; Thi Nguyen, 2009) and contributing to higher public service expenditures than more compact style of development (Carruthers and Ulfarsson, 2003). Moreover, impacts from urban development on one's "place attachment" can influence attitudes towards resource protection and foster place-protective behaviors and actions (Brehm et al., 2013; Raymon et al., 2010; Takahashi and Selfa, 2015). For instance, communities with larger populations (Kline and Wichelns, 1998) and communities experiencing higher rates of population growth (Hamin et al., 2006), loss of open space land (Nelson et al., 2007), and residential sprawl (Howell-Moroney, 2004a,b) are found to be more likely to propose and pass open-space ballot measures for land preservation and management. Thus, the potential for increasing open spaces in areas that are heavily developed and/or contain uses that produce negative externalities (e.g. commercial or industrial establishments) may translate into greater demand or need for land protection.

Undeveloped land in an area may also influence voter support for environmental bonds. The unequal distribution of open space areas across a city may make them more or less accessible and thus provide different environmental benefits to some residents (Kotchen and Powers, 2006; Solecki et al., 2004). Similarly, the distribution of recreation opportunities across the city may also influence voter support. For example, studies of park areas in Los Angeles (Powell et al., 2006) and Kansas City (Vaughan et al., 2013) show low income and minority neighborhoods often have more recreation areas, but these amenities tend be smaller (Los Angeles) and of lesser quality (Kansas City) compared to other neighborhoods across the city. Thus, while some areas may have either a surplus or a deficit in open space lands and recreation amenities, existing facilities could be improved, expanded or retrofitted if funding were to become available from a successful bond referendum.

Open space preservation can also provide significant fiscal benefits to residents. Because public parks and permanent open spaces are less likely to change uses in the future, these amenities become neighborhood fixtures and are capitalized into housing prices (Geoghegan, 2002; Sander and Polasky, 2009; Smith et al., 2002). As such, homeowners are more likely to vote for (or against) proposed public goods that are perceived to increase (or decrease) residential property values (Dehring et al., 2008; Fischel, 2001; Sonstelie and Portney, 1980). Research shows communities with greater access to existing open spaces are more likely to vote in favor of an open space referendum (Howell-