

Understanding City Engagement in Community-Focused Sustainability Initiatives

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Abstract

Many local governments are promoting sustainability initiatives, ranging from progressive urban design and development to climate protection. Past research suggests that governments are often motivated to act because of the possible co-benefits, such as cost savings, associated with sustainability. Many sustainability programs target inhouse city operations, however, thus ensuring that co-benefits accrue to local government while not imposing regulations on businesses or residents. Co-benefits might be less likely to drive decision-making when sustainability initiatives are directed to the larger community. In this article, we examine why some cities actively pursue the more difficult prospect of communitywide sustainability policy. We merge secondary data with original data from a survey of local governments to explore three broad theoretical influences on decisionmaking: (1) interest group pressure, (2) problem severity or need, and (3) network strength. Our results suggest that, regardless of the institutional structure within a city, participation in some interlocal networks promotes communitywide sustainability initiatives.

Introduction

Local governments are increasingly investing in programs and initiatives to promote sustainability. Sustainability policy casts a broad net and can include a variety of initiatives ranging from climate protection and energy efficiency to comprehensive land use planning. Efforts to advance

sustainability at the local level have garnered considerable scholarly attention. As early as 1987, the Brundtland Commission's report, *Our Common Future*, identified city governments as critical stakeholders in advancing sustainable development (WCED, 1987). Since then, scholars and practitioners have developed a vibrant research agenda exploring the meaning of sustainability (Hempel, 2009; Portney, 2009, 2003), evaluating its effects (Budd et al., 2008; Fitzgerald, 2010; Rabe, 2008; Upadhyay and Brinkman, 2010), and identifying the determinants of policies designed to promote local sustainability (Brody et al., 2008; Bulkeley and Betsill, 2005; Krause, 2011; Lubell, Feiock, and Handy, 2009; Pierce, Budd, and Lovrich, 2011; Portney, 2009; Portney and Berry, 2010; Sharp, Daley, and Lynch, 2011; Zahran et al., 2008a, 2008b).

As scholarship in this area grows, two challenges remain. The first is the theoretical and conceptual challenge implicit in advancing a more nuanced understanding of the relationship between economic development and environmental policy. All too often, these concepts have been treated as competitive endeavors (see Hempel, 2009, and Portney 2003, 2009, for a broader discussion of this point), limiting our ability to understand the win-win scenario that advances both environmental policy and economic development. This suggests a need to explore how different cities capitalize on contemporary postindustrial global economic forces. The second challenge is the need to build on the numerous findings of *co-benefits* as motivators of city action on climate change and other sustainability initiatives. Many scholars have found that energy cost savings to city governments and similar co-benefits motivate policy adoption in this area (Betsill and Bulkeley, 2004; Bulkeley and Betsill, 2003; Kousky and Schneider, 2003; Portney, 2009). Although co-benefits are likely to loom large in decisionmaking aimed at city operations, it is less clear if this explanation holds when city governments develop communitywide sustainability policy that exceeds inhouse city activities. Benefits from communitywide policies are likely to drift across political boundaries, adding hurdles to pursuing broad-based sustainability initiatives (Rabe, 2004, 2008). Ultimately, communitywide sustainability initiatives are more complex than their inhouse counterparts, and we know less about why cities embark on these broader, more challenging sustainability paths. Indeed, recent research identified systematic differences between the determinants of greenhouse gas (GHG) reduction policy aimed at inhouse city operations and those initiatives targeting the broader community (Feiock and Bae, 2011).

In this article, we explore the determinants of communitywide sustainability policy in more detail. Sustainability is a tremendously broad concept that can have multiple, and sometimes divergent, definitions (Zeemering, 2009). We consider sustainability policy to include any program or initiative that intends to lessen a city's environmental impacts over time. Our analysis stems from our previous work exploring cities' participation in and progress through the climate protection program promulgated by ICLEI—Local Governments for Sustainability (Sharp, Daley, and Lynch, 2011). Our previous research suggests that financially strapped cities are more likely to participate in ICLEI's climate protection program, advancing the notion that co-benefits are an important factor promoting policy adoption. These same cities experience implementation difficulties, however; they are systematically less likely to achieve programmatic milestones. This result compelled us to question the relationship between co-benefits as a determinant of decisionmaking and the scale or breadth of a policy initiative. Whereas increasing scholarship has aimed at understanding why some cities pursue sustainability initiatives and others do not, far less attention has focused on how broadly these initiatives are deployed, presumably because of data constraints. The data

used for our previous analysis did not distinguish if cities' climate protection initiatives were simply inhouse programs targeting local government operations, and thus more likely to be motivated by co-benefits, or if these programs were more ambitious communitywide initiatives engaging a broader cross-section of stakeholders in policy implementation.

This article is a conceptual replication of the model used in our previous research that focused exclusively on urban climate-change policy (Sharp, Daley, and Lynch, 2011). We adapt that model in several important ways, however. First, we rely on different data sources. If our replication suggests similar patterns guiding decisionmaking despite relying on different data sources to operationalize our concepts of interest, we can be more confident about the nature of these relationships (King, Keohane, and Verba, 1994). We merge secondary data with data from an original survey supported by the IBM Center for the Business of Government (the IBM survey) and collected at Florida State University under the direction of Richard Feiock. This merging enables us to expand our focus beyond climate-change policy and rely on primary data from large cities to create a measure that represents an array of sustainability initiatives, an approach also used by other scholars interested in sustainability (Lubell, Feiock, and Handy 2009; Pierce, Budd, and Lovrich, 2011; Portney, 2003). The second adaptation is that the structure of the survey data enables us to distinguish between sustainability initiatives directed at inhouse government operations and communitywide sustainability programs. Initial research in this area suggested that, with respect to climate-change decisionmaking, programmatic scale matters; different factors shape the uptake of inhouse programs compared with that of communitywide programs (Feiock and Bae, 2011).

Comprehensive sustainability programs have the potential to yield greater effects if successfully implemented, but they are, by definition, more complex and politically complicated. We adapt the model from our previous research to examine why some large cities are embracing communitywide sustainability programs and others are not. Our analysis considers the role of political institutions; a range of organized interests; policy need or problem severity, with a particular emphasis on distinguishing how a city's economy relies on more environmentally intensive activities compared with creative-class enterprises; and, finally, intergovernmental cooperation and network participation. Among other things, our results cast some doubt on co-benefits as a factor promoting communitywide sustainability initiatives. Our analysis instead suggests that, regardless of a city's institutional structure, broad-based organized interests within a community and participation in certain inter-local policy networks propel communitywide sustainability policy. The next section of the article outlines our theoretical and conceptual approach in more detail. In the subsequent sections, we provide our research methods and describe our results and discussion. We conclude the article by discussing our results in light of the broader literature on sustainability and suggesting fertile areas of research to build on and expand these results.

Cities, Sustainability, and Environmental Decisionmaking

Sustainability is a concept often examined at the international and national levels (Aldy and Stavins, 2010, 2007; Barbier, 2010; Mazmanian and Kraft, 2009; Rabe, 2010), despite the long-standing recognition of cities' importance in advancing sustainability (WCED, 1987). Portney (2003) persuasively argued that, in the American context, cities hold tremendous promise for

advancing sustainability. Indeed, he contended that several forces combine to highlight cities' prominence in this area. For several decades, the fragmentation and divided authority in American federalism has occurred against a near-constant drumbeat of advancing state and local rights. The result, on the federal level, has been an institutional environment unable to generate—and at times openly hostile to—new environmental legislation. Instead, much of the recent political debate in environmental decisionmaking has centered on returning authority to lower levels of government. The promise of such decentralization lies in scale: problems are more likely to be accurately identified, solutions are crafted at the local level by individuals who understand the political and social culture, and feedback and adaptive management can be more immediate. If something becomes better or worse, local governments can respond more quickly and strategically compared with their federal counterparts. Portney (2003) contended that these factors, and the sheer number of people living in urban environments, combine to make cities a serious and potentially effective level of government to advance sustainability. What factors, however, predict city governments' propensity to develop communitywide sustainability initiatives? We draw from previous research on urban sustainability to examine this question. In our estimation, four broad theoretical explanations have been advanced in the literature: political institutions; organized interests; policy need or problem severity; and network participation, sometimes described within the context of multilevel governance.

Political Institutions

Past research indicated that a city's local political institutions shape policy outcomes (Lubell, Feiock, and Ramirez de la Cruz, 2009; Ramirez de la Cruz, 2009). The configuration of executive-branch institutions is an important variable that mediates how other factors influence policymaking (Clinger-mayer and Feiock, 2001; Feiock and Cable, 1992; Sharp, 2002; Sharp, Daley, and Lynch, 2011). For example, the influence of supportive and oppositional groups should be more keenly felt in cities that have mayor-council governments. This form of government is a more politicized setting than a council-manager form of government; therefore, organized interests capitalize on this institutional setting to sway decisionmaking. We expect that organized interests for or against sustainability initiatives will be more evident in cities with mayor-council governments. By contrast, council-manager governments are far more insulated from the vagaries of special interests and more likely to advance notions of economic efficiency in decisionmaking (McCabe et al., 2008).

Organized Interests

Theoretically, we expect that the presence of organized interests will influence the uptake of comprehensive sustainability initiatives. Groups that favor the pursuit of sustainability encourage the uptake of broad-based sustainability programs, and groups that oppose such initiatives dampen the pursuit of formal sustainability policy. As noted in the preceding section, however, we expect these relationships to be mediated by the institutional arrangements within cities that either promote or inhibit access to decisionmakers. Previous research noted that *civic capacity* influences decisionmaking in this area. Environmental groups and civic capacity, which is often represented by aggregate measures like income and education, are generally associated with the uptake of sustainability programs (Portney, 2009; Zahran et al., 2008b). In addition, researchers have contended that scholarship in this area needs to move beyond simply identifying environmental groups and diffuse forms of civic capacity as a force for policy uptake; it needs to take more seriously the

notion of measuring general participation in a city as providing either a constraint or opportunity for sustainability initiatives (Hawkins and Wang, 2012; Portney and Berry, 2010). These researchers argued that an array of participatory forums, such as homeowners' associations and neighborhood groups, are an important and meaningful gauge of community-level civic capacity.

Categories of organized interests must include oppositional forces. For example, past research suggested that developers are likely to oppose comprehensive sustainability policy (Lubell, Feiock, and Handy, 2009; Ramirez de la Cruz, 2009). Our past research measured oppositional interests as the presence of a carbon-intensive industry, manufacturing. Although not an ideal operationalization, our results suggested that, for mayor-council cities, oppositional interest groups could constrain policy implementation (Sharp, Daley, and Lynch, 2011). Other research found a similar pattern: Krause (2011) noted that, the greater the value added from manufacturing to the local economy, the less likely a city is to sign the United States Conference of Mayors' (USCM's) Climate Protection Agreement (CPA).

Policy Need or Problem Severity

As we noted in our previous analysis focused on climate-protection policies, the literature offers limited theoretical clarity regarding the way in which policy need or problem severity influences decisionmaking (Sharp, Daley, and Lynch, 2011). The general expectation is that, all things being equal, problem severity motivates decisionmaking. In other words, local governments are more likely to act when problems are getting worse. The literature includes no agreed-on or even widely used measures of problem severity, however. For example, research focused more on sustainability policy directed toward land use decisionmaking or development has tended to conceptualize low-density or sprawling communities as problematic and, therefore, as propelling cities' action to advance sustainability (Lubell, Feiock, and Ramirez de la Cruz, 2009; Ramirez de la Cruz, 2009). Others have argued that high-density urban environments can, depending on the way the city operates, have a significant environmental effect or ecological footprint (Bulkeley and Betsill, 2003; Rees, 1997). This line of thinking suggests that, if public decisionmakers are responding to problem conditions, as population density increases a city's ecological footprint, the local government will be more likely to develop comprehensive sustainability initiatives.

In our previous research, we relied on the presence of manufacturing facilities relative to creative-class industries within a city to represent two divergent hypotheses. First, manufacturing strength could be a proxy for oppositional interest groups. Although this proxy is not ideal, limited measures are available for representing business interests when using secondary data. Second, we also conceptualized this variable as an indication of policy need or problem severity. Cities with more manufacturing facilities than creative-class establishments are areas where the economy is heavily reliant on industries that pollute. Thus, this variable is also an avenue to measure the severity of pollution in an area relative to areas that rely more on other economic opportunities. Because in this article we can rely on survey information for more detailed measures of business interest, as we will detail in the following section, we rely on manufacturing presence only as an indicator of the need for sustainability initiatives. In keeping with the previous problem severity hypothesis, we expect that cities where the economic sector is more reliant on manufacturing will be more likely to pursue comprehensive sustainability policy.

Our final hypothesis with respect to policy need or problem severity is related to co-benefits and fiscal stress. Past research suggested that co-benefits, such as cost savings, serve as important motivators for cities to engage in sustainability policy (Bulkeley and Betsill, 2003; Kousky and Schneider, 2003; Portney, 2009). Therefore, the ability of co-benefits to motivate policy action is directly related to a city's fiscal stress. Put another way, if co-benefits compel decisionmaking, this is most likely to be evident in cities with limited fiscal resources. Our past research partially supported this notion: financially strapped cities are more likely to join ICLEI's climate protection program. These same cities, however, experience implementation delays (Sharp, Daley, and Lynch, 2011). Our past work could not distinguish if climate-protection initiatives were in house or communitywide. Although the literature advances co-benefits as important, we suspect that its relevance is conditional on policy scale. Financially strapped cities may be more likely to adopt sustainability programs that improve fiscal health. These are likely to be in-house sustainability programs. By contrast, we expect that communitywide sustainability programs require fiscal resources; therefore, we expect that cities with better fiscal health are more likely to pursue multiple and comprehensive sustainability programs. This line of reasoning—that policy activity requires resources—has been widely acknowledged in the state policy adoption literature (Berry and Berry, 2007).

Network Participation

This last category of hypotheses explores the relationship between network participation and communitywide sustainability policy. In our previous research, our dependent variable measured participation in and progress through an interlocal network, ICLEI (Sharp, Daley, and Lynch, 2011). Other scholars have also pointed to the importance of local government participation in networks (Krause, 2011). Moreover, much of the global governance literature on urban sustainability has examined city action through a lens of multilevel governance or intergovernmental relations. This work advanced the notion that local governments do not act in a vacuum (Betsill and Rabe, 2009; Bulkeley and Betsill, 2005) and that the network or intergovernmental context is important to consider—a familiar argument in the public administration literature (Agranoff, 2007; Rabe, 2008). We expect that participation in proenvironmental interlocal networks will promote urban sustainability initiatives. More specifically, the longer cities are engaged with these networks, the more likely they are to tackle communitywide sustainability programs. We expect, however, that political institutions will mediate some networks. For example, networks tailored specifically to mayors should be more effective in mayor-council cities. Interlocal networks that are more ecumenical with respect to their target audience should be associated with positive policy action regardless of the form of local government.

Research Methods

We merge original survey data with existing secondary data to examine the ways in which political institutions, organized interests, policy need or problem severity, and network participation influence the uptake of communitywide sustainability policy. The original survey is based on a random sample of cities with populations greater than 50,000 and asked a wealth of questions about energy-efficiency and sustainability programs. For this article, we restrict our analysis to cities with more than 75,000 residents to more closely replicate our previous research and maintain a focus

on larger cities, where comprehensive sustainability policy is likely to be politically complicated and difficult to develop. The mixed-method survey (web-based with mail followup) was completed in the fall of 2010. City managers and administrative officers were the initial contacts. The overall survey response rate was 57.0 percent; the response rate among the larger cities—75,000 or more residents—was slightly higher, 58.7 percent. We augment survey data with secondary data from a variety of sources to replicate our previous analysis.

We draw our dependent variable, an additive index score of several items related to community-wide sustainability initiatives, from a battery of items included in the survey. The variable includes whether a city government has developed communitywide policy to advance initiatives such as green buildings, alternative transportation systems, energy efficiency, GHG inventory, renewable energy, smart grid technology, and integrative land use planning. The appendix details the exact language of the survey questions used to construct the index. All told, 15 items are in our additive index, each coded 1 if a city has communitywide initiatives for the particular survey question and 0 otherwise. These communitywide initiatives would limit a city’s environmental effect over time primarily by reducing energy consumption. Our survey items scale well together; reliability analysis indicates a Chronbach’s alpha of .859. Exhibit 1 compares the percentages of cities in our analysis that have inhouse and communitywide sustainability initiatives. Not surprisingly, inhouse initiatives are more common, particularly those initiatives whereby energy-saving co-benefits could accrue to local governments.

Exhibit 2 outlines the independent variables used in this analysis. Our measure of political institutions is drawn from the International City/County Management Association’s 2004 survey of economic development. We use this survey to distinguish between mayor-council cities and council-manager cities. For cities not included in that dataset, we examined city websites to classify the form of government.

Exhibit 1

Percent of Large Cities With Inhouse and Communitywide Sustainability Initiatives

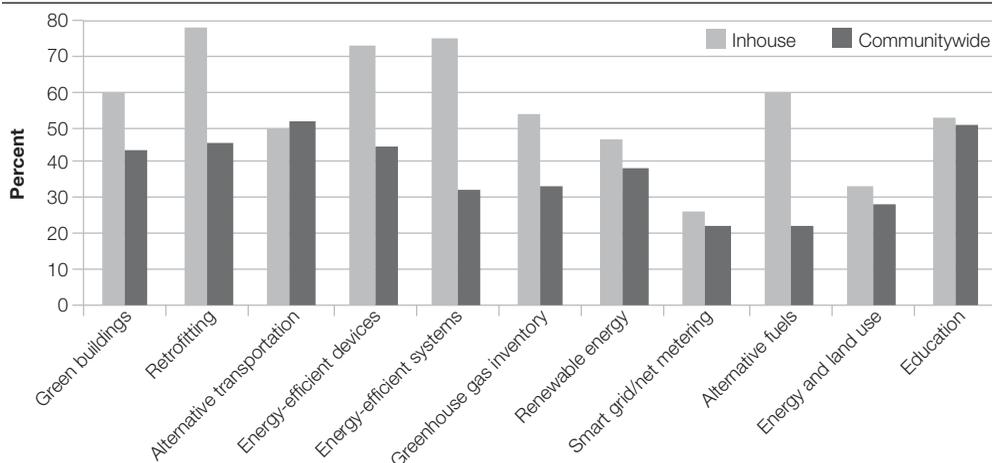


Exhibit 2

Variable Description

| Theoretical Explanation | Variable | Description |
|---------------------------------|--|--|
| Political institutions | Form of government | Dichotomous variable coded 1 if the city has a mayor-council form of government and 2 if the city has a council-manager form of government (ICMA and city websites). |
| Organized interests | Support for energy conservation or climate protection from— | Averaged scorings of perceived opposition or support (strongly oppose = 1; strongly support = 5) of— |
| | a. Business interest groups | Chamber of Commerce, real estate developers, and large business corporations (IBM survey). |
| | b. Environmental interest groups | Environmental groups (IBM survey). |
| | c. General interest groups | General public, homeowners’ associations, neighborhood organizations (IBM survey). |
| Policy need or problem severity | Population density | Total 2000 city population (in thousands) divided by land area in square miles (Census Bureau). |
| | Manufacturing/creative-class industry | Number of manufacturing establishments in 2002 divided by number of scientific, professional, or technical establishments (Census Bureau). |
| | Fiscal stress | Total own-source revenue per capita divided by median household income (Census Bureau). |
| Network participation | Length of CPA membership | Length of time since a city adopted the United States Conference of Mayors’ Climate Protection Agreement (0 = never adopted; 1 = since 2008–10; 2 = since 2006–07; 3 = since 2001–05; 4 = since before 2001) (IBM survey). |
| | Length of ICLEI membership | Length of time since a city joined ICLEI—Local Governments for Sustainability (same scoring as previous item) (IBM survey). |
| | Index of interlocal cooperation on energy efficiency or climate protection | Count of following four collaborative actions engaged in— Collaborative partnership with other local entities. Informal agreement with one or more local governments on energy issues. Formal agreement with one or more local governments on energy issues. Policy or comprehensive plan changes based on regional planning efforts (IBM survey). |
| | California | Coded 1 if city in California, else 0. |
| Control variable | Population | Population in 2006 (Census Bureau). |

ICMA = International City/County Management Association.

In our previous analysis of urban climate protection programs, like many other researchers, we relied on broad measures of civic capacity (education levels and counts of environmental nonprofits). The IBM survey provides a richer, albeit subjective, set of measures of stakeholder opposition and support. The survey asks a question regarding the level of support for sustainability decisionmaking by

several different types of groups. The scale on this question ranges from strongly oppose (coded 1) to strongly support (coded 5), which enables us to create more finely tuned measures of organized interest support or opposition. We create three distinct variables to represent organized interests. First, we average the perceived level of support from business interests, including the chamber of commerce, real estate developers, and large business corporations. Our second measure is perceived support from environmental groups. Finally, following Portney's (2003) thinking, we include a third variable measuring broad-based community organizations to provide an indication of general civic capacity. This measure averages the support for sustainability initiatives from the general public, homeowners' associations, and neighborhood organizations.

We use several measures to capture policy need or problem severity. First, using Census Bureau data from 2000, we add a measure of population density. This measure not only serves to replicate our previous research, it is also consistent with the contention that high-density development tends to be energy intensive or unsustainable and exacerbate GHG emissions (Bulkeley and Betsill, 2003). Our second measure is the number of manufacturing facilities relative to the number of creative-class establishments within a city in 2002. In this case, we use census information on the number of scientific, professional, or technical establishments within a city as an indication of creative-class economic activity. Our final measure of problem severity is fiscal stress. The literature offers no consensus regarding a standard measure of fiscal stress for local governments. We opt to use the same measure we included in our previous analysis, dividing each city's total own-source revenue per capita by median household income. We draw the information used to create this variable from the Census Bureau.

We rely on several measures to understand the influence of interlocal network participation. The survey included a question asking respondents to categorize how long they have been members of two major sustainability networks: the CPA and ICLEI's Cities for Climate Protection. This question enabled us to construct two variables, one for each interlocal network, coded so that a higher number means longer membership. In addition to measuring participation in these two prominent sustainability networks, we also capitalized on the structure of the survey to note the breadth of intergovernmental relationships and collaborative behavior. We included a variable that is a count of positive responses on survey items asking about collaborative partnerships, informal and formal agreements on energy issues, and responsiveness to comprehensive regional planning efforts. This composite indicator enables us to test whether more extensive involvement in webs of interlocal cooperation influences sustainability policy uptake. Our final variable in this category is a dichotomous measure noting if a city is in California. Because California is such a consistent innovator in environmental policy, particularly with respect to sustainability and climate protection (Betsill and Rabe, 2009), we expect that California cities are more likely to rely on comprehensive sustainability policies.

We include population as a control variable in our analysis. Originally, we believed that restricting our analysis to cities of 75,000 or more residents would preclude the need to add this control variable. In examining our data more carefully, however, we noted substantial variation in city size between mayor-council cities and council-manager cities. On average, in 2006, mayor-council cities had much greater populations (409,789) than council-manager cities (178,724). Exhibit 3 provides descriptive statistics by form of government and for the entire sample for all the independent variables used in this analysis.

Exhibit 3

Descriptive Statistics by Form of Government

| | Mayor-Council Cities | | | Council-Manager Cities | | | Total | | |
|---------------------------------------|----------------------|-----------|--------|------------------------|----------|--------|---------|----------|-----------|
| | Mean | St. Dev. | Max. | Mean | St. Dev. | Max. | Mean | St. Dev. | Max. |
| Sustainability initiatives | 5.687 | 4.367 | 15.000 | 4.981 | 3.711 | 15.000 | 5.254 | 3.980 | 15.000 |
| Length of CPA membership | 1.200 | 1.314 | 4.000 | 0.722 | 1.136 | 3.000 | 0.893 | 1.221 | 4.000 |
| Length of ICLEI membership | 0.771 | 1.206 | 4.000 | 0.543 | 1.075 | 4.000 | 0.623 | 1.125 | 4.000 |
| Fiscal stress | 0.043 | 0.025 | 0.131 | 0.032 | 0.024 | 0.145 | 0.036 | 0.025 | 0.145 |
| Population density | 4.624 | 4.115 | 26.400 | 3.478 | 2.531 | 15.760 | 3.886 | 3.223 | 26.400 |
| General interest-group support | 3.884 | 0.626 | 5.000 | 3.836 | 0.583 | 5.000 | 3.853 | 0.597 | 5.000 |
| Business interest-group support | 3.621 | 0.659 | 5.000 | 3.575 | 0.629 | 5.000 | 3.592 | 0.638 | 5.000 |
| Environmental interest-group support | 4.130 | 1.110 | 5.000 | 4.283 | 1.055 | 5.000 | 4.228 | 1.075 | 5.000 |
| Manufacturing/creative-class industry | 0.404 | 0.275 | 1.480 | 0.440 | 0.502 | 3.429 | 0.427 | 0.434 | 3.429 |
| Interlocal cooperation | 1.042 | 1.212 | 4.000 | 1.225 | 1.233 | 4.000 | 1.160 | 1.226 | 4.000 |
| California | 0.056 | 0.232 | 1.000 | 0.279 | 0.450 | 1.000 | 0.200 | 0.401 | 1.000 |
| Total population | 409,789 | 1,066,857 | 75,978 | 178,724 | 179,134 | 75,515 | 260,752 | 658,250 | 8,274,527 |

CPA = United States Conference of Mayors' Climate Protection Agreement. St. Dev. = standard deviation.

Results and Discussion

To maintain consistency with our previous analysis, and for added parsimony, we model mayor-council and council-manager cities separately. Exhibit 4 presents the results from our regression analysis. Our dependent variable is an additive index of the number of communitywide sustainability initiatives within a city. Because our dependent variable is essentially a count of sustainability initiatives, we analyzed our data using negative binomial regression analysis and compared these results with results generated using ordinary least squares (OLS) regression. No significant differences emerged between the two modeling approaches. Therefore, we report OLS regression results for ease of interpretation.

Our results contain some interesting patterns. We expected political institutions to mediate the influence of organized interests, which is not, in fact, the case. Two of the three variables we include to measure organized interests fail to reach conventional levels of significance regardless of a city’s form of government. Neither business nor environmental interest-group support is consistently related to comprehensive sustainability policy. General interest-group support—measured as perceived levels of support from homeowners’ associations, neighborhood groups, and the general public—matters for both mayor-council and council-manager cities. This finding is surprising considering the political nature of an elected executive branch in mayor-council cities. That said, this result is consistent with Portney and Berry’s (2010) findings about the importance of such broad-based civic organizations. Although their relevance in council-manager settings is surprising when such groups are viewed as political interests, it is less surprising when such entities are viewed as the backbone for civic capacity. This result suggests that, regardless of institutional structure, comprehensive action on sustainability policy is more likely when decisionmakers perceive support among residential stakeholders and the general public.

Exhibit 4

Ordinary Least Squares Regression Results: Determinants of Communitywide Sustainability Initiatives

| | Mayor-Council Cities | | Council-Manager Cities | |
|---------------------------------------|----------------------|----------|------------------------|----------|
| | Coeff. | SE | Coeff. | SE |
| Business interest-group support | - 0.818 | 1.048 | 0.134 | 0.570 |
| Environmental interest-group support | 0.189 | 0.446 | 0.119 | 0.313 |
| General interest-group support | 1.751 | 0.986* | 1.509 | 0.634** |
| Population density | 0.016 | 0.165 | 0.164 | 0.152 |
| Manufacturing/creative-class industry | 3.759 | 2.172* | - 1.151 | 0.615* |
| Fiscal stress | 26.384 | 22.055 | 11.135 | 14.956 |
| Length of CPA membership | 0.068 | 0.466 | 0.005 | 0.304 |
| Length of ICLEI membership | 1.211 | 0.537** | 0.904 | 0.320*** |
| Interlocal cooperation | 1.596 | 0.500*** | 0.454 | 0.292 |
| California | - 1.990 | 2.281 | 1.738 | 0.857** |
| Total population | 9.08E-07 | 0 | 2.21E-06 | 0 |
| (Constant) | - 4.897 | 3.858 | - 4.441 | 2.614* |
| Adjusted R ² | | 0.341 | | 0.407 |
| F | | 3.73*** | | 6.56*** |
| N | | 58 | | 89 |

Coeff. = coefficient. CPA = United States Conference of Mayors’ Climate Protection Agreement. SE = standard error.

* $p \leq 0.10$. ** $p \leq 0.05$. *** $p \leq 0.01$.

Our problem-severity measures do not behave as we predicted. No evidence suggests that density is relevant for understanding variation in cities' broader, community-targeted sustainability policy. The role that manufacturing presence plays relative to that of creative-class industries is contingent on the form of government. When we focus on council-manager cities, we find that cities whose economies are more reliant on manufacturing than on creative-class establishments appear to be constrained from pursuing the community-focused sustainability policies of interest; to state it another way, cities where creative-class industry is a relatively prominent component of the economy are more likely to do more sustainability policy. We find the reverse relationship for mayor-council cities. By contrast, mayor-council cities that are heavily reliant on the manufacturing industry are attempting more in the way of sustainability policies than are mayor-council cities that are less reliant on manufacturing. The results for mayor-council cities are thus consistent with one key version of the problem-severity explanation. A more manufacturing-dominated economy can be taken to mean a city with a heavy carbon footprint and other environmental problems that make it relatively problematic on sustainability grounds. The strong positive coefficient for our manufacturing/creative-class industry indicator in mayor-council cities suggests that, in that governance context, cities with manufacturing-heavy economies are reaching for sustainability policies as solutions to the problems wrought by their manufacturing dependence.

The contrasting result for council-manager cities is initially more suggestive of the organized interests interpretation that we took up when we encountered similar findings in our analysis of ICLEI implementation. That is, the negative coefficient could mean simply that a greater prevalence of manufacturing establishments in the economy signifies the greater strength of manufacturing interests that constrain sustainability activity that they find threatening. Abandoning a problem-severity perspective is not necessary, however, to interpret the contrasting results in council-manager cities. Instead, the problem-severity thesis can be framed in a second way. The negative coefficients that we observe suggest that the council-manager cities most aggressively pursuing sustainability policies are those whose economies feature a heavier presence of postindustrial, creative-class enterprises. Unlike mayors of large cities still dominated by manufacturing, who may be pushing for sustainability policy to transform their economies, the need for sustainability policy in council-manager cities may be defined as the importance of pursuing activity that is consistent with the needs of creative-class establishments that have already emerged as relatively important elements of the local economy. Perhaps cities with a vibrant creative class have their own version of the need for sustainability policy. More detailed research is needed to understand how this need might be communicated to decisionmakers.

Our final variable in this family of measures of policy need or problem severity is fiscal stress. Although previous research has suggested that cities pursue sustainability policy to capture co-benefits, we suspect that this relationship is conditional on the scale of a policy. We expect cities with more fiscal resources to be more likely to develop communitywide—and costly—sustainability policy. Instead, we find that fiscal stress is not a relevant predictor of sustainability policy activity in either mayor-council or council-manager cities.

When we look beyond the city's borders to the extralocal entities that might shape sustainability efforts, we find one important commonality and a pair of contrasts between mayor-council and council-manager cities. We hypothesized that the duration of participation in prosustainability

networks would be positive and significant, and that when these networks target both types of city governments, their effect would not be mediated by form of government. Indeed, our results suggest that the longer cities have been involved with ICLEI, an organization that appeals to all forms of city government, the more communitywide sustainability policies they have. Our previous research suggested ICLEI's positive role in policy implementation for GHG reduction, and the results here confirm this positive role is also true when we are looking at the much broader and more demanding outcome represented by this article's index of involvement in community-targeted sustainability programs.

By contrast, we expect that the CPA will be a relevant predictor of outcomes for mayor-council cities but not for council-manager cities (because council-manager cities, even hybrid ones with some sort of mayor, presumably do not identify with the USCM like mayor-council cities do). Involvement with the CPA makes no difference for either type of city, however. More research is needed to unpack the differences between these two interlocal networks, but it may be that ICLEI's experience in this arena—it has been active in this field since the early 1990s—combined with the tangible support it provides local governments in the form of technical planning tools advantages its ability to influence cities to act comprehensively to advance sustainability.

In addition to the influence stemming from the length of their involvement in ICLEI, governments' involvement in cooperative relationships with other local governments in the metropolitan area or region is a significant facilitator of sustainability policy activity for mayor-council cities. This predictor is not relevant for council-manager cities. This result is curious, and one that we did not anticipate. It may be that mayors, especially mayors in larger cities, have become adept at building coalitions needed to govern in a fragmented policy world. Elected officials may be more savvy about and successful with reaching out to local and regional partners, forging relationships, and building support than city managers who may not have similar public relations skills. Indeed, this result is consistent with Feiock, Steinacker, and Park's (2009) research noting that mayor-council cities are more likely to pursue interlocal agreements to advance economic development. It may also be that comprehensive sustainability policy provides more political capital to ambitious mayors considering careers as elected officials beyond a city's boundaries. Therefore, elected officials with broader ambitions may be more willing to collaborate with officials beyond their boundaries to create ambitious sustainability policy. Previous work on interlocal cooperation is decidedly mixed, however. For example, our result stands in stark contrast with Feiock's (2007) thesis that both the emergence and the durability of cooperative intergovernmental agreements should be linked to the presence of council-manager government. More detailed research is needed to better understand the role of contrasting types of chief executives in regional networks that are tied to sustainability policy initiatives.

On the other hand, California's leading role in environmental policy is important only for council-manager cities. Council-manager cities in that state have much more sustainability policy activity than council-manager cities in other states, but the state context has no apparent effect on the sustainability policy activities of mayor-council cities. This finding is the opposite of what we found in our previous analysis of progress in implementing ICLEI's milestones, wherein California city status was an important facilitator for mayor-council but not council-manager cities. This result may simply be an artifact of the distribution of mayor-council and council-manager cities in this

sample compared with that of our previous sample. Our findings about the importance of the state of California, at least in its council-manager cities, diverge from Krause's (2011) finding on the insignificance of state-level factors in accounting for cities' involvement in the CPA. Her research considered the contextual importance of all 50 states, however, examining state characteristics such as whether a state action plan for GHG reductions and reduction targets existed before 2005. When we considered individual state-by-state differences in the perceived degree of state support for energy conservation and climate protection via the relevant item on the IBM survey, the coefficient for that item was insignificant (results not shown). Only being in California, which has been touted as such an extraordinary policy leader in this topical area (Betsill and Rabe, 2009), as opposed to being in any other state, is important, and then only for council-manager cities.

Conclusion

This article contributes in two ways to the growing body of literature examining urban sustainability. First, we systematically examine the determinants of communitywide sustainability policy. Relying on original survey data, we are able to distinguish more narrow initiatives that target inhouse government activity from more ambitious communitywide policy. We focus on the latter to understand what factors compel cities to engage in more complex and politically difficult sustainability initiatives. Second, we approach this endeavor as a conceptual replication of our past research, but adapt this replication to capitalize on new data.

Our results paint an interesting picture and overlap somewhat with our previous research, particularly with respect to the importance of certain types of network participation. In our past research, we found that, regardless of form of government, cities that had been ICLEI members longer were also more likely to have made progress in implementing GHG reductions. In our current analysis, we find that ICLEI membership is consistently associated with more ambitious sustainability programs in both mayor-council and council-manager cities. This finding is consistent with past research suggesting that networks and multilevel governance participation are important (Betsill and Rabe, 2009; Bulkeley and Betsill, 2005). Interlocal cooperation also matters, however, only for mayor-council cities. More research is needed to unpack the dynamics of cooperation on sustainability across cities.

This analysis departs from our past research with respect to the role of organized interests and that of policy need or problem severity. General civic capacity, measured as perceived support from homeowners' associations, neighborhood groups, and the general public, is critical for both mayor-council and council-manager cities. We expected institutional structure to mediate organized interests, which is not evident. This result, however, is consistent with Portney and Berry's (2010) contention that broad-based civic capacity is needed to propel sustainability initiatives. In other words, those interested in advancing urban sustainability should not neglect citizen support. Communitywide sustainability initiatives are more likely to be pursued in cities where decisionmakers perceived such widespread citizen support. Curiously, and in contrast to our past research, environmental and business interests are not significant factors for or against communitywide sustainability policy. This divergent result highlights the tenuous nature of measuring organized interests; the local level exhibits considerable diversity, and it is challenging to identify appropriate groups that can be measured across numerous cities.

Our policy need or problem severity variables behave differently based on form of government. Mayor-council cities with a heavy manufacturing base are more likely to engage in comprehensive sustainability policy. The opposite is true for council-manager cities, however: a stronger creative-class economic presence promotes communitywide sustainability initiatives. In some respects, this result contributes to an already murky theoretical approach. The literature exhibits limited consistency on how best to measure problem conditions and align these measures with clear theoretical expectations. More research is needed to understand how best to operationalize problem conditions. For example, we speculate that council-manager cities that have transformed their economy may have a different version of need in terms of sustainability policy. Future research could focus on fine-tuning these measurements. Finally, our research provides some additional insight into the notion of fiscal co-benefits as motivators for sustainability policy. Whereas past research highlighted co-benefits as important, our research suggests that they may be a more relevant explanation for understanding inhouse sustainability policy. Future research in this area could examine the relationship and potential timing between in-house and communitywide sustainability policies. It may be that inhouse initiatives are gateway policies that create an opportunity to forge a broader communitywide sustainability path.

Appendix: Composition of the Dependent Variable

The dependent variable is an additive index drawn from a series of survey questions. The web-based survey (Implementation of Energy Efficiency and Sustainability Programs) was administered in the fall of 2010 by Richard Feiock and supported by the IBM Center for the Business of Government.

1. Which of the following energy/climate related issues does your jurisdiction officially address (for example, through regulation or policies as it relates to ... the community at large? (select all that apply)
 - a. Green Buildings
 - b. Retrofitting existing buildings for energy efficiency
 - c. Alternative Transportation Systems
 - d. Energy Efficient Devices (appliances, lighting, etc)
 - e. Energy Efficient Buildings (building controls, etc)
 - f. Inventory of Greenhouse Gas Emissions
 - g. Renewable Energy
 - h. Smart Grid/Net Metering
 - i. Alternative Fuels
 - j. Incorporating Energy in Land Use Decisions
 - k. Provide information about efficiency to residents
2. Has a greenhouse gas reduction goal been formally adopted by the city?
3. Does your jurisdiction offer loans to upgrade or retrofit buildings
4. Does your jurisdiction offer grants to upgrade or retrofit buildings?

5. Does your jurisdiction offer rebates to upgrade or retrofit buildings?
6. Has your city adopted planning goals relating to climate protection or energy efficiency in either its general plan or a separate document?

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