

Policy Integration for Sustainable Development and the Benefits of Local Adoption

Christopher V. Hawkins
University of Central Florida

XiaoHu Wang
City University of Hong Kong

Abstract

The concept of sustainable development has evolved from a focus primarily on environmental issues to a more balanced approach that consists of environmental, economic, and societal elements. Local efforts to promote environmentalism and economic growth are not mutually exclusive, but questions remain on the types of policies that integrate these efforts. In this article, we explain the adoption of policies that aim to reduce development costs for businesses that integrate environmental protection and energy conservation measures into their investments. The empirical analysis is based on a national survey of local sustainability policy conducted in 2010. A series regression model provides evidence of business interests and the mediating influence political institutions have on policy adoption.

Introduction

Within academia and professional associations, relatively strong agreement exists on the need for local governments to design and implement policies that are oriented toward sustainability (Leuengerger and Bartle, 2009). The concept of *sustainability* focuses on the long-term policy and planning goal of maintaining a social-environmental system that is in balance (Campbell, 1996; Jepson, 2004). Sustainable development—as a guiding principle for local growth policies—has evolved from a focus primarily on environmental issues to a more integrated approach that consists of environmental, economic, and societal dimensions (Fiorino, 2010; Mazmanian and Kraft, 2009).

Understanding local sustainable development policy is important, because cities represent the principal jurisdictional unit that develops governance structures that affect local growth and the

environment (Bulkeley and Betsill, 2003; Portney, 2003). Local governments have long been active in designing and implementing policies to improve their economic competitiveness. Cities have also become increasingly active in crafting policies that provide economic opportunities for all who are eligible and supporting economic growth that consumes limited resources efficiently. Reconciling these objectives is not easily accomplished. Among the reasons are the intense competition and conflict over policy benefits among local interests that play out in political arenas (Hawkins, 2011).

Even with such conflict, economic growth and environmentalism do not have to be mutually exclusive objectives (Feiock and Stream, 2001; Portney, 2003). In this article, we focus on policies that are commonly associated with a supply-side approach to development but that aim to reduce development costs for businesses that integrate environmental protection and energy conservation measures into their investments. Through incentives that promote green technology, onsite renewable energy systems, and Leadership in Energy and Environmental Design (LEED) certification, environmentalism and development do not represent an either/or proposition. Rather, cities can integrate environmental objectives into their pursuit of economic growth with policies that encourage new building and with land development that minimizes resource consumption.

Unlike most previous research on sustainable development, this study specifically identifies policies that integrate environmental and energy issues into development incentives. Our main objective is to explain the variation in the use of these policies by U.S. cities. Tradeoffs, however, can occur between a policy instrument and the extent to which a local government can capture the resultant benefits. To demonstrate how these tradeoffs may factor into policy decisions, we discuss the policies in this study as having the potential to (1) provide place-based benefits that address structural conditions of a locality, (2) shape the benefits provided to different local interest groups, and (3) generate symbolic benefits for local elected officials.

To frame our discussion on these points, we turn to the literature on local governing institutions and interest groups (Feiock, Tavares, and Lubell, 2008; Hawkins, 2011; Lubell, Feiock, and Ramirez, 2005; Ramirez, 2009). This literature suggests that sustainable development efforts at the local level are influenced by the demands placed on appointed and elected officials and by the responsiveness and political behavior of different governing institutions. Depending on the institutional arrangement and the activity of local interests, some sustainable development policy tools are likely to be used more or less frequently. Feiock, Tavares, and Lubell (2008) suggest that the adoption of policies that shape the benefits to business interests takes place in a “political market,” in which these private interests seek to change the policy environment. Political institutions mediate the demands of private actors and the willingness of public officials to supply the policies these interest groups desire (Clingermyer and Feiock, 2001; Jeong, 2006; Lubell, Feiock, and Ramirez, 2005). We apply this theoretical explanation to sustainable development to improve our understanding of the challenges and opportunities cities face in pursuing the objectives posed by Campbell (1996) and others: Do environmentalism and city development efforts have to work in opposite directions?

In the next section, we discuss common approaches to economic development and the ways in which cities integrate environmental objectives into development policy. We subsequently describe the localized benefits that potentially shape decisions on policy adoption. We then discuss our data collection, variable measures, and model specification. We then present the results, and the conclusion addresses implications for theory and avenues for future research.

Sustainable Development Policy

The concept of *sustainable development* often refers to physical, social, and economic development that avoids problems such as exhaustion of natural resources, ecosystem destruction, and pollution (Wang et al., 2012; Wheeler, 1998). In this article, we adopt Wheeler's (1998: 438) simple and relatively straightforward definition of sustainable development—"development that improves the long-term health of human and ecological systems." Of the three commonly referenced dimensions of sustainable development (social, environmental, and economic), this article focuses primarily on the economic dimension, but, as we discuss in this section, categorizing local policies along these lines and according to policy subcategories can be fraught with difficulty. Nonetheless, this approach provides some organizing structure to a concept that is likely to become more complicated in the future as local governments expand their activities and become more sophisticated in developing and applying sustainable development policy.

Approaches to Economic Development

Local governments are perceived to have a strong interest in economic development for a wide variety of reasons. Growth can be strongly tied to a city's fiscal well-being, development supports the provision of adequate public services, and private-sector investment improves job opportunities and diversifies the local employment base. Previous research has also argued that local leaders mobilize public resources to move their locality up within a "system of cities" and to portray a friendly image to businesses (Lewis and Neiman, 2009; Pagano and Bowman 1998). In more instances than not, cities pursue economic development in a competitive fashion with neighboring government units.

Provided this context, cities continue to use what are commonly referred to as "supply-side" policies as part of their economic development efforts (Eisinger, 1988; Reese, 2006; Reese and Rosenfeld, 2004). A *supply-side approach* is recognized primarily as government attempts to stimulate investment by reducing the production costs incurred by a business in a specific locality. These efforts come in the form of tax incentives, subsidies and abatements, loan guarantees, industrial revenue bonds, infrastructure development, and less restrictive regulatory policies. Tax incentives and subsidies have been used extensively to stimulate economic growth and have garnered a great deal of attention in the policy literature. Incentives continue to outpace spending for other economic development strategies (Peters and Fisher, 2004), and development subsidies and the improvement of land to spur private business investment remain popular policy tools (Blakely and Leigh, 2010).

This approach is not without its critics (see Bartik, 2005), who argue that tax incentives merely relocate investment across a region, are an only marginal factor in firm location decisions, and escalate competition among communities. These strategies may also increase the costs of economic development efforts and redirect public resources away from social or educational programs. Moreover, tax incentives tend to benefit higher income groups disproportionately.

A more comprehensive approach to economic development pursued by local governments is to employ "demand-side" policy tools in conjunction with supply-side strategies (Eisinger, 1988). A *demand-side approach* aims to develop new local capital and markets and to enhance economic

growth by promoting a well-prepared labor force and the development or expansion of indigenous firms. This approach is also associated with public-sector activism aimed at lower income groups and a more bottom-up or social-capital path to economic prosperity. Human capital development policies, for example, attempt to build the skill levels and work-related aptitudes of the local labor force through job training, entrepreneurship support, apprenticeship programs, and basic school system reform. The assumption is that improved skills will lead to better wages and the creation of businesses that add value to the economy.

Economic development, of course, is no different than most policy areas in which local activities and tools work in tandem. Many argue, in fact, that for local governments to be successful in business recruitment and retention, they should employ policies as a bundle rather than as distinct and mutually exclusive efforts (Blakely and Leigh, 2010). Previous research has noted that shifts in policy focus are quite noticeable in economic development (Reese and Rosenfeld, 2004). Many local officials have moved from emphasizing the cost of doing business in their community to focusing on creating a good business climate and establishing partnerships arrangements with private-sector and nongovernmental organizations to support local growth. Many communities have also moved toward taking a broad and holistic approach that focuses on quality-of-life issues. Thus, the distinction between various approaches to economic development is often blurred because of the varied mix of tools that are likely to be employed simultaneously for a specific development project.

For some development policy, however, common underlying characteristics remain. It is necessary to isolate these characteristics to determine the extent to which environmental concerns are being integrated into their use. Reese (2006: 368) wrote, for example, that “because it is impossible to create typologies that match all conditions and that all researchers find useful and acceptable, it is valuable to provide new perspectives that can serve as the basis for further exploration.” To accomplish this objective, she employed cluster analysis to create typologies of cities based on the intensity of use of 34 economic development policies during a 5-year period for 752 U.S. cities and 45 communities in Canada. She eventually developed six conceptually different categories, with many cities (195) classified as having a “traditional” policy profile. These cities rely heavily on tax abatements and incentives.

Applying these tools without conditioning their use and the resultant development effects on the environment can undermine local sustainability efforts. Thus, the continued emphasis on incentives that best characterize the supply-side approach raises the question of how local governments integrate these policies with environmental protection and energy conservation. Local governments, through their regulatory powers, have considerable influence on land use planning, codes, ordinances, and standards for new construction that can encourage energy efficiency and conservation. Improving these efforts has implications for sustainability because economic incentives are commonly associated with development projects that alter land use patterns and can have negative effects on the environment. We discuss this concept in greater detail in the following section.

Integrating Policy for Sustainable Development

The concept of sustainable development suggests that local governments should consider ways to integrate environmental issues with development policy within and across policy domains. For example, in a review of studies on sustainable development, Saha and Paterson (2008: 25)

categorized “tax incentives for environmentally friendly development” as an economic development strategy. Thus, even within one policy area, such as economic development, specific actions can serve what may appear to be competing objectives. Based on a national survey of local governments, Wang et al. (2012) considered 23 economic-sustainability measures that focus on the need for cities to maintain economic competitiveness while using less energy and fewer resources. The policies in their study reflected the local government’s strategic investments in businesses and economic development programs that focus on resource protection and energy conservation.

Land development is one critical component in improving sustainability because of the associated resource use and potential environmental effects. Buildings, for example, accounted for 39 percent of energy consumption and 68 percent of electricity consumption in 2002, and because construction is expected to increase (by 2030, approximately one-half of buildings will have been built after 2000, according to some estimates), it has a significant effect on the natural environment (Nelson, 2004). Integrating energy resource and environmental protection measures into development policies is a key element of sustainable development. For example, based on a survey of U.S. cities with populations of more than 50,000, the American Institute of Architects identified a variety of green building programs and local sustainability efforts tied to economic development. Expedited permit processing (Gainesville, Florida), loans and grants for green improvements (Washington, D.C.), density bonuses (Acton, Maine), permit fee waivers (San Antonio), subsidizing fees for green building certification (Las Vegas), property tax abatement (Baltimore County, Maryland), and subsidizing efficient appliance or building system components are examples of specific community policies identified in the report (Rainwater, 2007; Retzlaff, 2008).

One way for local governments to pursue sustainable development is to integrate environmental and energy issues into development policies by promoting more green development through LEED. Building assessment systems, such as LEED, provide standardized information for local officials to measure the sustainability of buildings and are commonly used to rate, rank, or assess how buildings address environmental concerns (Retzlaff, 2008). Buildings recognized as meeting sustainability goals based on such an assessment system enable communities and property owners to promote and market the building’s energy efficiency, water conservation, site selection, materials, waste management, and indoor environmental quality. Integrating energy use in the development and operations of buildings should have a positive effect on the environment and long-term health of a community. LEED rating systems are now available for new commercial construction and major renovation, existing building operations and maintenance, commercial interior projects, and core and shell development projects (Rainwater, 2007; USGBC, 2007).

Other research evidence has suggested that some cities are active in integrating environmental and energy issues into development policy (although they leave much room for using financial incentives). For example, the results of a national International City/County Management Association survey reported by Svava, Read, and Moulder (2011) indicate that 7 out of 10 cities assign a very high priority to the economy but have only modest sustainability activity. Approximately 70 percent of respondents to Feiock and Francis’ (2011) survey of mid-sized cities indicated that attracting green industries was at least “somewhat important” to their city’s overall economic development strategy. Respondents, however, indicated only modest support for green-sector development in the form of financial incentives that encourage the use of energy-efficient technologies in

new development. Of the responding cities, only 19.5 percent provided such incentives. Fewer cities in that sample were also willing to alter permitting practices for industries that promote green practices (11.0 percent) or to relax regulatory or review processes for private developments that incorporate energy-efficient technologies (6.0 percent). Based on a sample of 215 cities, Saha and Paterson (2008) found that only 9 percent of the cities used tax incentives for environmentally friendly development. These studies suggest that cities are beginning, albeit with what appear to be only modest attempts, to integrate economic development efforts with environmental protection and energy conservation.

It may be unlikely that researchers will ever identify a comprehensive set of indicators of sustainable development activities at the local level. One challenge is that local governments are continually improving their activities and implementing innovative tools and governance mechanisms that fit their unique context. Moreover, the concept of sustainable development has undoubtedly seeped into different policy areas, so that significant overlap is likely among local policy issues. At one point in time, a policy may have been recognized strictly as an economic development policy. Now, it may be considered a mechanism to minimize environmental harm and reduce energy consumption. Because of the continued use of business tax abatements and financial incentives, it is important to identify whether cities are incorporating environmental issues into these policies. In the following section, we discuss how the localized benefits that may accrue from these policies may influence local decisions.

Localized Policy Benefits: Explanations for Adopting Sustainable Development Policies

The localized nature of some sustainable development policies may influence their use, because the policy (1) provides place-based monetary benefits to a locality, (2) provides benefits to different local interest groups, and (3) generates symbolic benefits for local officials. In this section, we discuss these explanations in greater detail and provide corresponding hypotheses.

Place-Based Benefits

Building consensus on sustainable development is a challenge, because containing the benefits of local efforts wholly within municipal borders is extremely difficult (Sharp, Daley, and Lynch, 2011). Equitable access to resources and economic opportunity that improve one's livelihood, for example, are key aspects of the social dimension of sustainable development. The benefits are likely to be difficult for a single city to capture on a consistent and long-term basis, however. New jobs in a locality may not go to local people who receive job training and may not go to the community's residents at all. Investments in sustainable development policy that emphasize the social aspects of economic opportunity may simply lead to an improved entrepreneurial capacity or a more skilled and educated workforce that does not remain within the jurisdiction making the investment.

By comparison, local governments may ease development approvals for projects that reduce energy consumption, or they may provide tax incentives for manufacturers of green economy products and that invest in alternative forms of energy production. Such policy tools can provide direct

monetary benefits to the community in the form of taxes and transaction-related revenue. Moreover, buildings are constructed within a jurisdiction, support services and suppliers may emerge, and additional investment in the immediate area may also appear. Such benefits are *localized* because they can be contained or captured primarily within the jurisdiction that provides the incentive. Because many incentive policies are oriented primarily toward businesses, we assume the city that makes the financial or regulatory investment will receive direct benefits in the form of a business relocating or remaining and expanding in the community. Thus we expect that, as local economic need increases, cities will pursue more sustainable development policies that reduce costs to business.

Local Interest Group Benefits

The benefits of a particular policy may be distributed—intentionally or unintentionally—among groups or individuals. The urban governance process, which blends and coordinates public and private interests, is influenced by not only structural conditions but also the political pressures on local officials from private interests (Pierre, 1999). Organized groups that engage in the decision-making process can exert great influence over local officials to enact policies that conform to their economic or other interests (Judd and Swanstrom, 1994; Logan and Molotch, 1988). Research has shown businesses, real estate groups, and development interests to be particularly active in shaping policies that promote sustainability at the local level (Hawkins, 2011; O’Connell, 2009).

The *growth-machine* model of politics, for example, suggests that groups that will benefit directly from development policies will promote them and mobilize in favor of them (Logan and Molotch, 1988; Molotch, 1976). From this perspective, development interests use their political power to affect the costs and benefits of growth by manipulating policy decisions. Among the benefits captured by land-based interests are higher rents and greater opportunities for investment. Moreover, many policy tools reflect businesses and affiliated organizations working closely with local elected officials on policy decisions (Stone, 1989). This model, however, can result in the targeting of benefits to specific geographic areas and narrow constituencies aligned with the urban governance regime.

Whereas residents often want a greater share of the local budget to go toward municipal and social services, the growth coalition presses for more money to go toward physical infrastructure and investments in policies that aid development (Logan and Molotch, 1988). Sustainable development policy that focuses on incentives is likely to provide direct benefits for existing businesses, because new private investment may result in greater demand for business support services (for example, construction, building materials, and so on). Sustainable development policies may also provide benefits through positive externalities to surrounding businesses when land is developed or businesses expand. We expect that cities that work closely with businesses on sustainability issues will adopt more sustainable development policies that reduce costs to businesses.

Symbolic Benefits

Closely linked with the role of local interest groups in policymaking is how governing structures influence the performance and decisions of political actors (Clingermyer and Feiock, 2001). The discretion in policy choices and the opportunities and incentives of public officials are constrained by the municipal form of government. In a council-manager system, professional administrators are responsible for managing the day-to-day affairs of city government. This governance structure is

intended to insulate centralized executive power from political influences and interest-group pressures (Sharp, 1991). Although a council-manager form of government replaces political “high-powered” incentives with “low-powered” incentives (Frant, 1996), the profession is very much political in nature and managers are highly engaged in policymaking (Nalbandian, 1999; Nelson and Svara, 2010).

For example, promoting new administrative initiatives or being seen as a leading policy reformer can enhance one’s reputation within professional networks (Feiock et al., 2001). In addition, research has suggested that cities with a full-time city manager are more receptive to innovative administrative techniques and policy than cities with a mayor-council form of government. Cities with a council-manager form of government are found to apply fiscal impact analysis to evaluate development projects more stringently than cities with a mayor, reflecting their focus on the efficient and innovative management of the local economy (Ha and Feiock, 2012). Svara, Read, and Moulder’s (2011) report indicated that cities with a council-manager form of government are generally doing more to promote sustainability than cities with alternative forms of government.

Whereas appointed managers’ tenures and careers are generally insulated from symbolic politics, mayors may not be willing to take political risks when they present little opportunity for credit claiming. Although some sustainable development policies may produce visible results, they may also be relatively new and untested. Thus, cities with a council-manager form of government are expected to adopt more sustainable development policies that reduce costs to business.

Depending on the political institutional arrangement and the activity of local interests, some development policy tools are likely to be used more or less frequently. Feiock, Tavares, and Lubell (2008) suggested that the adoption of policies that shape the benefits for business interests takes place in a “political market,” in which these private interests seek to change the policy environment. Political institutions mediate the demands of private actors and the willingness of public officials to supply policies that these interest groups desire (Clingermayer and Feiock, 2001; Jeong, 2006; Lubell, Feiock, and Ramirez, 2005).

Coupled with responding to pressures from the business community, elected officials may pursue and endorse policies to tout successful implementation. Elected officials can accrue individual benefits by supplying the policy that supports the economic interests of the business community (Sharp, Daley, and Lynch, 2011). Sustainability is a long-term agenda, however. Pursuing sustainable development can be risky because policy outcomes can be difficult to measure and may require cities to assume significant upfront costs. The use of financial incentives can be particularly costly, both in financial terms and when outcomes or results do not match expectations. Thus, we expect that more sustainable development policies that reduce costs to business will be provided under a council-manager form of government and when business interests are active in planning and the policymaking process. In the following section, we describe the data used to test these hypotheses.

Data and Method of Analysis

To collect data on local policies, we mailed a questionnaire in 2010 to the city manager (or mayor in the absence of a city manager) of every U.S. city with a population of at least 50,000. Of the 601 cities in the sampling frame, 263 responded to the survey, a 44-percent response rate. The

council-manager and mayor-council forms of government are present in 66.0 and 31.0 percent, respectively, of the responding cities. These figures are similar to the 62.0 and 35.9 percent, respectively, in all U.S. cities with populations of more than 50,000 (ICMA, 2010). Of the respondents, 40 percent identified themselves as city managers, chief executive officers, or chief administrative officers; 28 percent were sustainability managers; and 7.2 percent were planning directors. Other respondents included environmental policy directors, energy and environmental directors, economic development directors, public works directors, and solid waste directors. Tests were conducted to determine whether the responding cities are significantly different from nonresponding cities on key socioeconomic characteristics. Only the average median household incomes for responding (\$45,241) and nonresponding cities (\$42,396) were significantly different ($t = 1.961$; $p = .05$).

Of the 263 cities in the final sample, 57 (21 percent) are in California. The sample includes some of the largest cities in the state, such as Los Angeles, Anaheim, and Riverside, and 25 (nearly one-half) have populations greater than 100,000. Another one-fourth of the respondents are from four states: 27 (10 percent) from Florida, 18 (7 percent) from Texas, 14 (5 percent) from Illinois, and 11 (4 percent) from North Carolina. Our sample also includes large cities, such as Austin, Texas; Denver; Portland, Oregon; and San Francisco, and smaller cities such as Grand Rapids, Michigan, that are considered the most serious in terms of their commitment to sustainability (Karlenzig, 2007; Portney, 2003). Some cities that Portney notes are taking sustainability seriously, such as Chicago and Seattle, are not included in the sample, however. In addition, no cities responded in Louisiana, Mississippi, and Wyoming, which previous research has suggested tend to lag behind other states in their commitment and capacity to environmental protection (Rabe, 2006).

Survey respondents were asked to identify if the policies listed in exhibit 1 are used by their city. We specifically asked: “To practice economic sustainability, our city has...” After this question, we provided a list of policies. In exhibit 1, the number in parentheses indicates the percentage of cities in the sample that use the policy. The policies emphasize integrating traditional development incentives (for example, financial incentives, expedited permit process, tax credits, loans, and fee waivers) with efforts to reduce energy consumption and minimize environmental effects.

Exhibit 1

Sustainable Development Policies Adopted by Cities in the Sample

To practice economic sustainability, our city has...	Percent Yes
Linked environmental goals to publicly financed development projects	74
Established a brownfield redevelopment fund	73
Zoning or regulations that allow for onsite renewable energy systems	67
Low-interest loans for energy efficiency measures and building materials	60
Priority permitting and fee waivers for installing green technologies	43
Designated locations for alternative energy generation, R&D, and manufacturing	41
Incentives that lower financial barriers to energy-efficiency gains	35
Density bonus for buildings achieving LEED certification	28
Fee reductions to cover costs of LEED certification	20
Expedited application and permit process for alternative energy facilities	20
Property tax credit to commercial building achieving LEED certification	12

LEED = Leadership in Energy and Environmental Design. R&D = research and development.

Note: One hundred-eighty five cities have adopted at least one policy.

Most cities in the sample have adopted linking environmental goals to publicly financed development projects (74 percent) and establishing a brownfield redevelopment fund (73 percent). As in the survey results reported by Feiock and Francis (2011), fewer cities in the sample offer financial incentives, including property tax credit to commercial building achieving LEED certification (12 percent). Of course, many types of development policies excluded from this analysis also provide incentives to land developers and businesses and incorporate energy issues and other environmental objectives (for example, incentives for open space protection in a residential development). This study represents only a narrow set of policies that focus on achieving the overarching goals of sustainability by reducing resource use and mitigating environmental degradation while maintaining economic and social outputs (Betsill and Bulkeley, 2007).

We are interested primarily in explaining the number of policies adopted by cities in our sample. We expect that local business interests are likely to have a positive effect on the adoption of those policies that tend to align with their demands for reducing costs. To measure this variable, we first provided the following statement to the survey respondent: “To implement sustainability initiatives, our city has...” We then provided a binary (yes or no) choice: “... involved business groups in developing a sustainable vision of the city.” We also expect that cities operating under a reformed governing institution will have a positive effect on the number of policies adopted. Cities with a council-manager form of government are measured with a binary variable. We include an interaction term between the interest group variable and the local form of government variable. This interaction term is used to test whether the effect of the business interest group variable is conditional on the local political institution.

A locality experiencing the effects of economic stagnation, higher unemployment, or increasing poverty often prompts policymakers to consider an array of policies to address these structural issues. Previous research on development policy has used a variety of local characteristics as indicators of economic need, including population size and population growth rate (Johnson and Neiman, 2004; Mills and Lubuele, 2000). Other indicators of need include the size of the minority population, personal income level, and fiscal conditions (Clingermyer and Feiock, 2001; Hawkins, 2011; Portney, 2003). Portney (2005) identified the local employment base as potentially affecting sustainability initiatives. The variables used in this study to account for these factors include population size (log), median household income, percent African American, and the percentage of total jobs in manufacturing.

We also expect that political pressure from highly educated and younger citizens, who tend to support environmentalism and a propensity to think green, may shape local actions (Portney, 2003). These factors are measured with median age and percentage with a bachelor degree. Because competition for private investment tends to drive policy decisions, we expect that communities that are experiencing less growth than the region as a whole will be more active in pursuing business investment. Pursuant to this hypothesis, we measure development competition as the difference between local population change and metropolitan-area population change between 2000 and 2010. Exhibit 2 provides a description along with the mean, standard deviation, and minimum and maximum values for the independent variables.

Exhibit 2

Descriptive Statistics of the Independent Variables

Independent Variables	Mean	Standard Deviation	Minimum	Maximum	Description
Metropolitan growth difference	- 1.91	13.00	- 95.07	66.99	Difference between local population growth and population growth of the metropolitan area between 2000 and 2010.
Population (log)	5.090	0.342	4.67	6.58	Total population (log).
Percent African American	69.62	15.86	16.7	94.4	Percentage of the total population that is African American.
Household income	53,052	17,910	24,525	119,483	Median household income.
Education	32.11	13.89	9.7	78.7	Percentage of the total population with a bachelor degree.
Percent manufacturing	9.78	5.10	1.5	41.1	Percentage of total employment in manufacturing.
Age	34.82	4.44	22.1	52.9	Median age of the population.
Business involvement	0.34	0.47	0	1	1 if businesses are actively engaged in crafting a sustainable development vision for the city; else 0.
Form of government	0.67	0.46	0	1	1 if the city operates under a council-manager form of government; else 0.

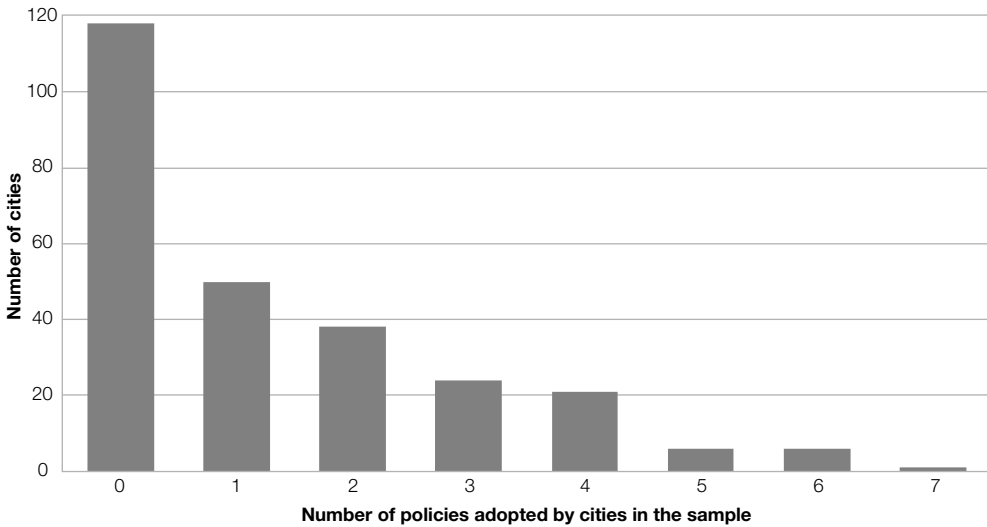
Exhibit 3 displays the count of the sustainable development policies adopted by cities in the final sample. Because not every city in the sample has adopted one or more of the policies in exhibit 1, zeros comprise a large proportion of counts in the data. To address this issue, we use a zero-inflated Poisson regression model as the method of analysis. The Poisson process includes first fitting a logit model that determines membership of the city in a latent or unobserved group with an outcome of 0. The probability of each count (including zeros of the number of policies) is then determined by a Poisson regression.

From a theoretical perspective, we specify a model in which the structural characteristics of a city belong in the logit model. The use of incentives and other sustainable development policies may not be an issue in some communities that have little demand for a progrowth agenda because of a sound fiscal base or robust employment. In other communities, local economic need can be an obstacle to a city’s adoption of sustainable development policy because adoption requires high startup costs. In this study, local conditions create the need for a city to pursue the types of sustainable development policies listed in exhibit 1.

The interest group and governing institution characteristics, on the other hand, determine the outcome. Local interest groups and governing institutions create the conditions through which policies are then adopted and shape the benefits that are expected to accrue. The dependent variable in the Poisson model is the number of policies adopted by a city, which ranges from 0 to 7.

Exhibit 3

Distribution of Sustainable Development Policies Adopted by Cities in the Sample



Results

Exhibit 4 presents the estimated regression model. The second column presents the results without interaction terms. The bottom rows of the table include the variables in the logit model. Substantively, the sign of the coefficient in the binary process is predicting membership in the group that must have a zero count. The negative and significant effect of age, for example, suggests that older populations negatively affect the chances of the city being in the group where zero counts are

Exhibit 4

Zero-Inflated Poisson Model for Sustainable Development Policies

Independent Variables	Coefficient	Standard Error	p Value
Poisson model			
Business involvement	.461	.105	.000
Form of government	-.103	.107	.336
Population (log)	.326	.141	.021
Metropolitan growth difference	-.004	.004	.246
Logit model			
Percent manufacturing	-.114	.057	.047
Percent African American	.016	.017	.348
Household income	.00003	.00001	.092
Education	-.049	.023	.037
Age	-.124	.058	.031
Population (log)	-2.088	1.095	.057
Constant	14.101	6.309	.025

Notes: Sample size = 263. Nonzero observations = 185. Zero observations = 78. Model statistics: LR $\chi^2 = 36.53$. Probability = .000.

possible. In other words, an increase in the age of the population increases the odds of pursuing sustainable development policies. The percentages of total employment in manufacturing and with a bachelor degree have similar effects.

The top rows in the table present the coefficients for the Poisson model. The results indicate that business interests have a positive and significant effect on the number policies adopted. This finding provides support for the notion that more development policies that integrate environmental and energy issues, of which the benefits are mainly oriented toward businesses, are likely to be adopted when businesses are involved in developing a sustainable vision of the city. Also of theoretical interest is whether the variation in the number of policies adopted by jurisdictions in our sample can be attributed to the structure of local political institutions. The results suggest that form of government does not have a significant effect on the number of policies adopted.

In exhibit 5, we report only the Poisson results for the model with the interaction term and include percentage change for ease of interpretation. This analysis tests the hypothesis that local institutions mediate the demands of business interests on the number of policies adopted. Underlying this hypothesis is that the incentives of local officials operating under different governing arrangements will affect the supply of policy (and thus the associated benefits) to various interests. The positive effect of the interaction term indicates that when cities operate under a council-manager form of government, and when business interests are engaged in planning for sustainable development with the city, the expected number of sustainable development policies adopted increases 48.4 percent.

The results indicate the important role of the structure of political institutions, consistent with the findings of other research that has suggested that managers are not less favorable than mayors to growth. Feiock, Tavares, and Lubell (2008), for example, found that managers work closely with prodevelopment interests to provide the conditions for economic development. Similarly, analysis by Lubell, Feiock, and Ramirez (2005) suggested that professional administrators become vulnerable to development interests, especially when rapid growth is occurring.

Exhibit 5

Percent Change for Sustainable Development Policies (Poisson Results)

Independent Variables	b	z-Score	p Value	Percent Change
Business involvement	.199	1.114	.265	22.1
Form of government	-.291	-1.986	.047	-25.3
Form of government x business involvement	.394	1.843	.065	48.4
Population (log)	.390	2.551	.011	47.8
Metropolitan growth difference	-.004	-1.135	.257	-0.5

Discussion

One surprising finding of our analysis presented in exhibit 5 is the negative and significant effect a council-manager form of government has on the number of polices adopted. Kwon, Berry, and Feiock (2009) found, for example, that having a council-manager form of government has a strong positive effect on cities' early adoption of policy. One explanation they suggested is that green

incentive strategies are new, and thus pushing for investments in these more specialized development areas is risky. Managers tend to be less risk averse and are likely to push for policy adoption earlier than elected officials such as mayors. Their results point to the pursuit of efficiency and effective management rather than touting policy success.

Our analysis focuses on integrating environmental objectives into development policy through incentives that promote energy conservation by reducing development costs to businesses. In mayor-council governments, in which shorter time horizons from ongoing election cycles pushes elected officials to become risk adverse, political leaders tend to be more attentive to political rather than economic incentives for policy adoption (Steinacker, 2004). Although the policies in our analysis focus on economic incentives, they emphasize LEED certification and expedited permitting and fee waivers for incorporating energy efficiency into buildings. As Lubell, Feiock, and Ramirez (2009: 662) suggested, however, “there remain many doubts about whether green building truly delivers environmental benefits rather than being a symbolic marketing label.” Thus, this result may be a function of the incentives targeting these relatively narrow environmental objectives, which are more symbolic than having a relatively significant effect on sustainability. The findings point to the high-powered political incentives of mayors leading to policies that reflect “getting on the bandwagon” rather than actually addressing a real need (Kwon, Berry, and Feiock, 2009: 16).

The results also support the hypothesis that the structure of local political institutions determines the number of policies when it combines with local interests (Clingermayer and Feiock, 2001; Feiock, Tavares, and Lubell, 2008). In this case, the analysis provides evidence of the mediating effect a council-manager form of government has on business interests. The results may indicate that cities are likely to respond favorably to the demands and expectations of businesses because they generate revenue that enables cities to supply adequate public services without imposing high taxes on business (Wolman and Spitzley, 1996). It is also important for local governments to generate support from businesses on sustainable development because these local interests can help to address resource constraints that present significant challenges for policy implementation (Feiock and Francis, 2011). When businesses are engaged in the planning process of crafting a vision of sustainability, cities with a council-manager form of government can effectively negotiate with these interests and supply policy that aligns with their demands. The results of this analysis also point to the argument that, for cities to be successful in achieving goals of sustainability, local officials must establish partnership initiatives with local businesses to improve resource efficiency (Bulkeley and Betsill, 2003).

It is certainly possible that the results reflect city leaders taking the initiative to engage business leaders in their sustainability policymaking or vision simply because they want to build this economic sector. A collaborative and participatory approach to planning and policymaking increases the chances that sustainability programs and policies are implemented (Hawkins and Wang, 2011). Moreover, a collaborative framework for developing local sustainability efforts can build stronger consensus on long-term sustainable development actions by raising the awareness of local issues and diffusing conflict and controversy (Innes and Booher, 2001). It can also lead to “an alliance of key players and leaders” (Innes, 1992: 450) who can become advocates for program implementation.

Given the evidence presented in this study, one challenge for local officials is to highlight the benefits some groups may receive from sustainable development policy while negating threats posed by other interests (Sharp, Daley, and Lynch, 2011). Research on the involvement of cities in climate protection networks, for example, has emphasized the importance of cost savings as a co-benefit of participation (Kousky and Schneider, 2003; Krause, 2011). Framing the issue and the resultant benefits thus become essential with competing claims to what sustainability entails and how best to achieve it (Betsill and Bulkeley, 2007). If an inclusive and collaborative process is undertaken, a greater share of the benefits can be distributed to more groups. This process may also reduce conflict and build consensus on what sustainability may look like and how best to achieve local goals.

Conclusion

This study sought to answer two questions. First: Are cities integrating environmentalism into economic development? Generally speaking, the results provide a qualified yes. Among the types of policies that cities in our sample adopted are linking environmental goals to publicly financed development projects, low-interest loans for energy efficiency, funding brownfield redevelopment, and crafting zoning or regulations that allow for onsite renewable energy systems.

Pursuing development without conditioning the resultant effects on the environment can undermine sustainability practices. Most of the literature on development policy at the local level, however, has treated the specific tools in isolation from environmentalism and the broader framework of sustainable development. The descriptive results reported in this study suggest environmentalism and development are not an either/or proposition. Rather, through a variety of incentives, cities can integrate environmental objectives into their pursuit of economic growth. The results of this study may, in fact, reflect how some suggest sustainable development ought to be framed; that is, becoming more sustainable is strongly tied to a city's competitive advantage for economic development (Portney, 2003).

The second question this study sought to answer: What explains the adoption of these policies? Sustainable development undoubtedly requires public investments, but some mechanisms yield quicker returns and more visible results. Policy decisions are made when local officials respond to the demands of interests that seek to alter policies and enact policies that provide benefits that align with their economic or other interests. Depending on the type of governing structure, the demands translate into policy that distributes benefits to some interests over others. The objectives of the sustainable development policies analyzed in this study are meant primarily to reduce business costs, with the assumption that resultant private investment occurs within the locality.

Regarding local interest groups, business involvement in crafting a sustainable development vision for the city has a positive effect on the number of policies adopted. Although business interests can influence a reduction in resource use while maintaining economic and social outputs, the policies developed with their participation are mediated through governing arrangements. The evidence in this study supports this hypothesis: when business interests are involved in the planning and policy development process and when cities have a reformed governing arrangement, the local governments in our sample tend to adopt more sustainable development policies. This

study provides evidence to complement findings from previous research that managers assume a pronounced leadership role and take on the position of a broker or negotiator in policymaking (Nalbandian, 1999). In particular, managers may play an essential entrepreneurial role in crafting sustainable development policy (Feiock and Francis, 2011; Svava, Read, and Moulder, 2011).

Systematic evidence is needed regarding how cities will minimize environmental effects while maintaining a strong fiscal base and employment opportunities for residents. The results of this study provide some evidence of how local governments are responding to these seemingly conflicting objectives and identify factors that may influence these decisions. More research, however, is undoubtedly needed. When fiscal or employment issues become more pressing, will cities abandon an environmentalist approach with the hope that the abandonment will contribute to growth? If cities perceive greater competition for private investment from surrounding communities, will they respond by engaging in more economic development activities that are inconsistent with the policies presented in this study? To what extent would this response undermine a sustainable development agenda that is needed to demonstrate meaningful and measurable results? A longitudinal study may help answer these questions.

Acknowledgments

This study was previously presented at the Florida State University (FSU) Local Benefits of Sustainability Symposium. The authors thank the FSU DeVoe L. Moore Center for sponsoring and hosting this event.

Authors

Christopher V. Hawkins is an assistant professor in the School of Public Administration at the University of Central Florida.

XiaoHu Wang is a professor at the City University of Hong Kong.

References

- Bartik, Timothy J. 2005. "Solving the Problem of Economic Development Incentives," *Growth and Change* 36: 139–166.
- Betsill, Michele M., and Harriet Bulkeley. 2007. "Looking Back and Thinking Ahead: A Decade of Cities and Climate Change Research," *Local Environment* 12 (5): 447–456.
- Blakely, Edward J., and Nancy Green Leigh. 2010. *Planning Local Economic Development: Theory and Practice*, 4th ed. Thousand Oaks, CA: SAGE Publications.
- Bulkeley, Harriet, and Michele M. Betsill. 2003. *Cities and Climate Change: Urban Sustainability and Global Environmental Governance*. New York: Routledge.
- Campbell, Scott. 1996. "Green Cities, Growing Cities, Just Cities? Urban Planning and the Contradictions of Sustainable Development," *Journal of the American Planning Association* 62 (3): 296–313.

Clingermayer, James C., and Richard C. Feiock. 2001. *Institutional Constraints and Policy Choices: An Exploration of Local Governance*. Albany, NY: SUNY Press.

Eisinger, Peter K. 1988. *The Rise of the Entrepreneurial State*. Madison, WI: University of Wisconsin Press.

Feiock, Richard C., James C. Clingermayer, Christopher Stream, Barbara Coyle McCabe, and Shamima Ahmed. 2001. "Political Conflict, Fiscal Stress, and Administrative Turnover in American Cities," *State and Local Government Review* 33 (2): 101–108.

Feiock, Richard C., and Nathan Francis. 2011. *A Guide for Local Government Executives on Energy Efficiency and Sustainability*. Washington, DC: IBM Center for the Business of Government.

Feiock, Richard C., and Christopher Stream. 2001. "Environmental Protection and Economic Development: A False Trade-off?" *Public Administration Review* 61 (3): 313–321.

Feiock, Richard C., Antonio Tavares, and Mark Lubell. 2008. "Policy Instrument Choices for Growth Management and Land Use Regulation," *Policy Studies Journal* 36 (3): 461–480.

Fiorino, Daniel. 2010. "Sustainability As a Conceptual Focus for Public Administration," *Public Administration Review* 70 (Supplemental): 578–588.

Frant, Howard. 1996. "High-Powered and Low-Powered Incentives in the Public Sector," *Journal of Public Administration Research and Theory* 6: 365–381.

Ha, Hyunsang, and Richard C. Feiock. 2012. "Bargaining, Networks, and Management of Municipal Development Subsidies," *American Review of Public Administration* 42 (4): 481–497.

Hawkins, Christopher V. 2011. "Smart Growth Policy Choice: A Resource Dependency and Local Governance Explanation," *Policy Studies Journal* 39 (4): 679–707.

Hawkins, Christopher V., and XiaoHu Wang. 2011. "Sustainable Development Governance: Citizen Participation and Support Networks in Local Sustainability Initiatives," *Public Works and Management Policy* 17 (1): 7–29.

Innes, Judith E. 1992. "Group Processes and the Social Construction of Growth Management in Florida, Vermont, and New Jersey," *Journal of the American Planning Association* 58 (4): 440–453.

Innes, Judith E., and David E. Booher. 2001. "Metropolitan Development As a Complex System: A New Approach to Sustainability." In *The Governance of Place: Space and Planning Processes*, edited by Ali Madanipour, Angela Hull, and Patsy Healey. Aldershot, United Kingdom: Ashgate: 239–264.

International City/County Management Association (ICMA). 2010. *The Municipal Year Book 2010*. Washington DC: International City/County Management Association.

Jeong, Moon-Gi. 2006. "Local Choices for Development Impact Fees," *Urban Affairs Review* 41: 338–357.

Jepson, Edward J. 2004. "The Adoption of Sustainable Development Policies and Techniques in U.S. Cities: How Wide, How Deep, and What Role for Planners?" *Journal of Planning Education and Research* 23 (2): 229–241.

- Johnson, Martin, and Max Neiman. 2004. "Courting Business: Competition for Economic Development Among Cities." In *Metropolitan Governance: Conflict, Competition and Cooperation*, edited by Richard C. Feiock. Washington, DC: Georgetown University Press: 124–146.
- Judd, Dennis R., and Todd Swanstrom. 1994. *City Politics: Private Power and Public Policy*. New York: Harper Collins.
- Karlenzig, Warren. 2007. *How Green Is Your City? The Sustainable U.S. City Rankings*. Gabriola Island, Canada: New Society Publishers.
- Kousky, Carolyn, and Stephen H. Schneider. 2003. "Global Climate Policy: Will Cities Lead the Way?" *Climate Policy* 3 (4): 359–372.
- Krause, Rachel M. 2011. "Policy Innovation, Intergovernmental Relations, and the Adoption of Climate Protection Initiatives by U.S. Cities," *Journal of Urban Affairs* 33 (1): 45–60.
- Kwon, Myungjung, Frances S. Berry, and Richard C. Feiock. 2009. "Understanding the Adoption and Timing of Economic Development Strategies in U.S. Cities Using Innovation and Institutional Analysis," *Journal of Public Administration Research and Theory* 19 (4): 967–988.
- Leuenberger, Deniz Z., and John R. Bartle. 2009. *Sustainable Development for Public Administration*. Armonk, NY: M.E. Sharp.
- Lewis, Paul G., and Max Neiman. 2009. *Custodians of Place: Governing the Growth and Development of Cities*. Washington, DC: Georgetown University Press.
- Logan, John R., and Harvey L. Molotch. 1988. *Urban Fortunes: The Political Economy of Place*. Berkeley, CA: University of California Press.
- Lubell, Mark, Richard C. Feiock, and Edgar E. Ramirez. 2009. "Local Institutions and the Politics of Urban Growth," *American Journal of Political Science* 53 (3): 649–665.
- . 2005. "Political Institutions and Conservation by Local Governments," *Urban Affairs Review* 40 (6): 706–729.
- Mazmanian, Daniel A., and Michael E. Kraft. 2009. *Toward Sustainable Communities: Transitions and Transformation in Environmental Policy*, 2nd ed. Cambridge, MA: MIT Press.
- Mills, Edwin, and Luan S. Lubuele. 2000. "Projecting Growth of Metropolitan Areas." In *Readings in Urban Economics: Issues and Public Policy*, edited by Robert Wassmer. Malden, MA: Blackwell: 36–55.
- Molotch, Harvey L. 1976. "The City As a Growth Machine: Toward a Political Economy of Place," *American Journal of Sociology* 82 (2): 309–330.
- Nalbandian, John. 1999. "Facilitating Community, Enabling Democracy: New Roles for Local Government Managers," *Public Administration Review* 59: 187–197.
- Nelson, Arthur. 2004. *Toward a New Metropolis: The Opportunity To Rebuild America*. Metropolitan Policy Program. Washington, DC: The Brookings Institution.

Nelson, Kimberly L., and James H. Svara. 2010. "Adaptation of Models Versus Variations in Form: Classifying Structures of City Government," *Urban Affairs Review* 45 (4): 544–562.

O'Connell, Lenahan. 2009. "The Impact of Local Supporters on Smart Growth Policy Adoption," *Journal of the American Planning Association* 75 (3): 281–291.

Pagano, Michael, and Ann Bowman. 1998. *Cityscapes and Capital: The Politics of Urban Development*. Baltimore: Johns Hopkins University Press.

Peters, Alan H., and Peter Fisher. 2004. "The Failures of Economic Development Incentives," *Journal of the American Planning Association* 70 (1): 27–37.

Pierre, Jon. 1999. "Models of Urban Governance: The Institutional Dimension," *Urban Affairs Review* 34 (3): 372–396.

Portney, Kent E. 2005. "Civic Engagement and Sustainable Cities in the United States," *Public Administration Review* 65 (5): 579–591.

———. 2003. *Taking Sustainable Cities Seriously: Economic Development, the Environment, and Quality of Life in American Cities*. Cambridge, MA: MIT Press.

Rabe, Barry G. 2006. "Power to the States: The Promise and Pitfalls of Decentralization." In *Environmental Policy: New Directions for the Twenty-First Century*, 6th ed., edited by Norman J. Vig and Michael E. Kraft. Washington, DC: CQ Press: 34–56.

Rainwater, Brooks. 2007. *Local Leaders in Sustainability: A Study of Green Building Programs in Our Nation's Communities*. Washington, DC: American Institute of Architects.

Ramirez, Edgar E. 2009. "Local Political Institutions and Smart Growth: An Empirical Study of the Politics of Compact Development," *Urban Affairs Review* 45 (2): 218–246.

Reese, Laura A. 2006. "Do We Really Need Another Typology? Clusters of Local Economic Development Strategies," *Economic Development Quarterly* 20 (4): 368–376.

Reese, Laura A., and Raymond A. Rosenfeld. 2004. "Local Economic Development in the U.S. and Canada: Institutionalizing Policy Approaches," *American Review of Public Administration* 34 (3): 277–292.

Retzlaff, Rebecca C. 2008. "Green Building Assessment Systems: A Framework and Comparison for Planners," *Journal of the American Planning Association* 74 (4): 505–519.

Saha, Devashree, and Robert G. Paterson. 2008. "Local Government Efforts To Promote the 'Three Es' of Sustainable Development: Survey in Medium to Large Cities in the United States," *Journal of Planning Education and Research* 28 (1): 21–37.

Sharp, Elaine B. 1991. "Institutional Manifestations of Accessibility and Urban Economic Development Policy," *The Western Political Quarterly* 44 (1): 129–147.

Sharp, Elaine B., Dorothy M. Daley, and Michael S. Lynch. 2011. "Understanding Local Adoption and Implementation of Climate Change Mitigation Policy," *Urban Affairs Review* 47 (3): 433–457.

- Steinacker, Annette. 2004. "Game-Theoretic Models of Metropolitan Cooperation." In *Metropolitan Governance: Conflict, Competition, and Cooperation*, edited by Richard C. Feiock. Washington, DC: Georgetown University Press: 46–66.
- Stone, Clarence. 1989. *Regime Politics: Governing Atlanta 1946–1988*. Lawrence, KS: University of Kansas.
- Svara, James H., Anna Read, and Evelina Moulder. 2011. *Breaking New Ground: Promoting Environmental and Energy Programs in Local Government*. Washington, DC: IBM Center for the Business of Government.
- U.S. Green Building Council (USGBC). 2007. "Green Building, USGBC, and LEED." Available at <http://www.usgbc.org> (accessed July 17, 2012).
- Wang, XiaoHu, Christopher Hawkins, Nick Lebrado, and Evan Berman. 2012. "Capacity To Sustain Sustainability: A Study of U.S. Cities," *Public Administration Review* 72 (6): 841–853.
- Wheeler, Stephen. 1998. "Planning Sustainable and Livable Cities." In *The City Reader*, edited by Richard LeGates and Frederick Stout. London, United Kingdom: Routledge: 434–445.
- Wolman, Harold, and David Spitzley. 1996. "The Politics of Local Economic Development," *Economic Development Quarterly* 10 (2): 115–150.