Partisanship and Local Climate Policy

Elisabeth R. Gerber
University of Michigan

Abstract

This article examines the relationship between partisanship and cities' approaches to climate policy. Do partisan patterns at the local level match patterns at the national level? Whose partisanship matters: that of elected officials, citizens, or other actors? Previous research indicates that constraints created by the federal system dampen the effects of partisanship on many local policies. Given the absence of strong federal policy direction in the environmental policy arena, this article's hypothesis is that these dampening effects will be minimal and clear partisan differences are expected to emerge at the local level. Employing data from a recent survey of local government officials, the analysis provides evidence that the specific constituencies targeted by a given policy affect whose partisanship matters. These effects remain robust after accounting for the broader partisan environment. These findings have important implications for our growing understanding of the determinants of local climate policy and the influence of partisanship in local politics.

Introduction

Climate scientists have reached virtual consensus that human activity has fundamentally changed the earth's climate and that human action is needed to slow, reverse, and adapt to those changes (for example, NRC, 2011); yet the politics of climate change in the United States remain far from consensual. Sharp partisan cleavages persist in the national debate about climate policy (Shipan and Lowery, 2001), with Democrats advocating proactive approaches to reduce greenhouse gases and mandate the use of renewable energy, and Republicans pushing for more limited approaches or challenging the scientific evidence. Recently, we have seen Democrats and Republicans in Congress squaring off over such issues as regulating greenhouse gas emissions, strengthening automotive emissions standards, and limiting the Environmental Protection Agency's authority (Pew Center on Global Climate Change, 2011).

This article considers the contours of climate politics and policy at the local level. In the absence of strong and effective federal policy leadership, cities and other local governments find themselves

on the front lines of public climate policy efforts.[1] Lutsey and Sperling (2008) find dozens of states and hundreds of cities participating in voluntary efforts aimed at mitigating climate change. They estimate that full implementation of these combined efforts "could stabilize U.S. [greenhouse gas] emissions at 2010 levels by the year 2020" (Lutsey and Sperling, 2008: 673). Diverse organizations such as California's Institute for Local Government,[2] the U.S. Department of Transportation,[3] and ICLEI—Local Governments for Sustainability[4] sponsor programs at the state, national, and international levels, respectively, to provide local governments with resources to institute effective local climate-change programs.

Despite city governments' important role in creating and implementing U.S. climate policy, we know little about the ways that cities decide whether and how to deal with climate change and what political factors shape their policies. Most local climate policies are strictly voluntary—local governments are free to adopt them or not—and many can be characterized as public goods: they impose direct, concentrated costs on the producing jurisdiction and provide diffuse benefits to people in other jurisdictions. These two features mean that local decisionmakers must overcome significant barriers when they choose to adopt climate policies. Recent research has focused on a variety of determinants, including population characteristics, institutional features, and governance arrangements (see Portney and Berry, 2010, for an excellent summary of recent research that investigates the determinants of the related but arguably broader concept of sustainability).

This article examines the relationship between partisanship and cities' approaches to climate policy. Do partisan patterns at the local level match patterns at the national level? In other words, do Democratic cities pursue proactive climate policies and Republican cities pursue indirect and weaker policies or none at all?

Understanding how partisanship shapes cities' approaches to climate policy is important for several reasons. First, it informs our general understanding of the determinants of local policy, adding to the growing body of literature that seeks to understand what national political processes also apply at the local level and what processes are unique to local politics. Second, it provides insight into the distinctive politics of climate policy, which will likely become more salient as the effects of climate change manifest. Third, it provides guidance for policy entrepreneurs and advocates to more effectively direct their energy and resources toward favorable opportunities for policy leadership, experimentation and change.

This article investigates the relationship between partisanship and local climate policy by combining recently collected survey data about local government participation in a variety of climate-change programs with information on partisanship at various geographic scales. The current

[1] A substantial body of scholarship considers states' roles in climate policy (for example, Rabe, 2004). For the purposes of this article, we consider city policies as distinct from those of their state governments.

[2] http://www.ca-ilg.org/.

[3] http://climate.dot.gov/state-local/index.html.

[4] http://www.iclei.org/our-activities/programs-initiatives.html.

article's focus is on climate-change policies intended to reduce carbon emissions and greenhouse gases and to increase reliance on renewable energy; future research will consider other aspects of climate-change policy as well.[5]

Partisanship and Local Policy Outcomes

Political science research has clearly demonstrated that partisanship is a key determinant of political behavior and policy outcomes at the national level. Among the mass public, partisanship hugely dominates voting decisions (Green, Palmquist, and Schickler, 2002), policy positions (Carmines and Stimson, 1989), core values (Goren, 2005), and political evaluations (Popkin, 1991). Among political elites, party organizations are key sources of information and resources (Aldrich, 1995), and party effects are strong and consistent determinants of roll-call voting (Snyder and Groseclose, 2000). Many of the congressional roll call votes on major legislation in recent years, including the stimulus plan (Calmes, 2009), healthcare reform (Hitt and Adamy, 2010), and the debt ceiling (Pear, 2012), have split along party lines.

Given the dominance of partisanship in the national-level political process, it is natural to ask whether the same holds true at the local level. Does partisanship play a similar role in local-level political processes? Does it play a key role in structuring the political behavior of the mass citizenry and political elites? After all, many of the same people vote in national and local elections, and the same party organizations and labels provide resources and cues to candidates and voters.

Despite these similarities, several factors prompt skepticism of partisanship's role in local political processes. Many local elections are officially nonpartisan (that is, party labels are not listed on the ballots), although even in those elections, partisan cues are often available (Gerber and Hopkins, 2011). Voters in local elections may consider numerous other factors besides partisanship, such as incumbency or nonpolicy attributes (Shaffner, Streb, and Wright, 2001). Local government decision-makers may be more constrained than national decisionmakers in their ability to institute partisan policies because of market (Ferreira and Gyourko, 2009; Tiebout, 1956) and political (Gerber and Hopkins, 2011) factors. Finally, policies pursued by local governments may not align with the same partisan cleavages as most national issues, and different cleavages may exist and be more important.

Partisanship and Environmental Policy Preferences

As interest in climate policy has increased in recent years, numerous scholars have begun to study the contours of public opinion toward climate and the environment. Precious few studies focus on partisanship and other political factors explicitly, however. Those studies that do include measures of individual partisanship in their surveys and models indicate clear partisan differences in attitudes

[5] One area of growing local involvement is in efforts to adapt to the consequences of climate change. Adaptation policies include, for example, emergency preparedness planning, increasing drainage and sewage capacity, strengthening coastal and waterfront infrastructure, changing landscaping practices, public education efforts, and so on. These policies are in contrast to most current efforts, including those that are the focus of this article, which focus on mitigating the causes of climate change rather than adapting to its consequences.

toward the environment in general (for example, Egan and Mullin, 2012; Krosnick and MacInnis, 2011) and in preferences toward climate policies at the national and local levels in particular (Curry, Ansolabehere, and Herzog, 2007; Leiserowitz et al., 2011). These differences are often striking: for example, in a national survey, only half as many Republicans strongly supported local regulations requiring residential energy efficiency as Democrats (17 to 35 percent); 70 percent of Democrats and only 48 percent of Republicans felt it was extremely or very important for their communities to protect local water supplies from the effects of global warming (Leiserowitz et al., 2011).

Hypotheses

These results clearly indicate that strong partisan differences in environmental and climate policy preferences exist among the general public. We might therefore expect to see clear partisan differences in the climate policies pursued at the local level, with Democratic cities more likely to adopt proactive climate policies and Republican cities less likely to adopt such policies. These differences, however, may not be so simple. As discussed previously, city actors may be constrained in their ability to pursue policies that coincide with their partisan policy preferences. In addition, citizen and elite partisanship may differ. A citizenry dominated by one party may elect a city council with a different partisan majority, or they may elect a mayor with a different partisan affiliation.[6] When this disconnect occurs, it is not clear whose partisanship will have a greater effect.

This analysis focuses on who is the primary target of a particular climate policy. Some climate policies provide direct benefits to residents—for example, recycling programs, refunds or rebates for purchases of certain environmentally friendly products, and programs that publically recognize individual efforts. Others are more focused on the internal operations of government. These operations include planning initiatives, green municipal purchasing programs, environmentally friendly workplace practices, and so on. These internally focused programs clearly provide benefits to residents and others who care about the environment; however, their primary targets, in terms of influencing behavior, are the governments (and government employees) themselves. In the former case, where programs directly target residents, we expect the partisanship and policy preferences of residents and citizens to be the more important determinants of a city's policy choices. In the latter case, where programs target government practices, we expect government officials' partisanship and policy preferences to be the more important determinants.[7] These expectations are captured in the following hypotheses.

- **H_1.** For policies that provide direct benefits, programs, or services to residents and local businesses, citizen partisanship will affect whether a city adopts the policy. Cities with a higher percentage of Democratic residents will be more likely to adopt, and cities with a lower percentage of Democratic residents will be less likely to adopt, such policies.

[6] In the Michigan data that I analyze in this article, this partisan mismatch occurs in 38 percent of the 1,000 cities and townships in the sample.

[7] Daley, Sharp, and Bae (2012) and Feiock and Bae (2011) similarly distinguish between internal and external policies and between inhouse and community-focused policies.

- **H_2.** For policies that provide indirect benefits, programs, or services to residents, elected officials' partisanship will affect whether a city adopts the policy. Cities with Democratic elected officials will be more likely to pursue, and cities with Republican elected officials will be less likely to pursue, such policies.
- **H_0.** No differences will exist in the policies pursued by cities with Democratic and Republican elected officials and with Democratic and Republican citizens.

In addition, partisan actors outside a jurisdiction's boundaries may influence a city's climate policies. These actors may include, for example, citizens or elites in neighboring jurisdictions, or party officials at the county or state levels. Outside partisan actors could affect local policy choices in several ways. Partisan actors outside a local government's boundaries may directly affect policy choices by providing resources, information, or policy leadership to local government officials. For example, like-minded county government officials may directly assist local governments in adopting programs or joining ongoing county efforts. In other words, they may encourage cooperation between jurisdictions in working toward common environmental and climate-related goals. Partisan actors outside a local government's boundaries may also indirectly affect local policy choices. For example, county government officials may initiate climate policies at the county level, effectively satisfying some of the local need and demand for climate policies and allowing for local government officials to devote resources to other activities. In effect, outside actors may enable or encourage free riding off existing climate policies in other jurisdictions. The regional partisan political environment may also predispose residents in a given jurisdiction to be more or less receptive to climate policies within their city or township, or they may provide political cover for policymakers to pursue policies that are unpopular with their own constituents.

As these examples suggest, outside partisan actors may affect a jurisdiction's decisions about adopting either internal or external policies, and their effects may be in either the same or the opposite direction of internal party actors. This expectation implies the following alternative hypotheses.

- **H_{3a}.** Partisan actors in surrounding communities will reinforce the effects of local partisanship on internal and external policies. That is, the likelihood of adopting local climate policies will be greater for Democratic cities with Democratic neighbors than for Democratic cities with Republic neighbors. The likelihood of adopting local climate policies will be less for Republican cities with Republican neighbors than for Republican cities with Democratic neighbors.
- **H_{3b}.** Partisan actors in surrounding communities will offset the effects of local partisanship on internal and external policies. That is, the likelihood of adopting local climate policies will be less for Democratic cities with Democratic neighbors than for Democratic cities with Republic neighbors. The likelihood of adopting local climate policies will be greater for Republican cities with Republican neighbors than for Republican cities with Democratic neighbors.
- **H_0.** No differences will exist in the policies pursued by cities with Democratic and Republican elected officials and with Democratic and Republican citizens.

Data

Testing these hypotheses requires data about the climate policies being pursued by cities and other local governments and about the partisanship of citizens, elected officials, and neighboring jurisdictions. This article uses a unique dataset that contains these elements.

The core of the dataset is a recent survey of Michigan local government officials: The Michigan Public Policy Survey (MPPS).[8] MPPS is a semiannual survey of local government officials from each of the 1,859 general-purpose local governments in Michigan, including cities, villages, townships, and counties.[9] E-mail invitations are sent to the top appointed official and the top elected official in each jurisdiction; both groups of officials are invited to complete the approximately 30-minute survey on line or to request a hard copy. The Fall 2010 MPPS (CLOSUP, 2010) contained a number of questions about local climate change-mitigation policies and about the respondent's partisan identification and personal beliefs about a number of climate-related issues. Of the 1,859 local governments included in the sampling frame, 1,459 completed surveys were received from 1,189 unique jurisdictions. Because one of the key hypotheses concerns the effect of elected officials' partisanship, the sample is limited to the 1,000 responses from city or township elected officials.[10, 11]

The Fall 2010 MPPS asked the following battery of questions about local climate-change policies in the respondent's jurisdiction.

> Q25. Some local governments are adopting policies and practices to meet their jurisdictions' energy demands while reducing the costs and environmental impacts of energy use. In your opinion, in the next 12 months, how likely or unlikely is it that your jurisdiction will adopt the following types of policies and practices?
>
> - Improving energy efficiency in your government facilities (such as lighting, insulation, or HVAC upgrades, anti-idling policies for municipal fleets, and so on).
> - Changing your jurisdiction's work practices (such as water conservation, thermostat regulation, and so on).

[8] The University of Michigan's Center for Local, State, and Urban Policy and a number of other sponsors conduct the MPPS (http://www.closup.umich.edu/mpps.php). Any opinions, findings, and conclusions or recommendations expressed in this article are those of the author and do not necessarily reflect the views of the funding organizations.

[9] Cities, villages, and townships are all considered incorporated places in Michigan.

[10] The analysis is also limited to cities and townships, excluding responses from village and county officials. In Michigan, village boundaries overlap township boundaries, and so vote returns, the basis of our key citizen partisanship variable, are not reported at the village level. Counties are excluded because they have less fiscal autonomy from the state than do other local governments and the county-level respondents who completed our survey were all appointed officials.

[11] The subset of 1,000 cities and townships from which we have responses from elected officials differs from the full sample of Michigan cities and townships in several ways. The average total population in the subsample is 5,922; in the full sample, the average total population is 6,897. In the subsample, cities are underrepresented (8 versus 18 percent in the full sample) and townships are overrepresented (93 versus 82 percent in the full sample). On other observable characteristics, such as racial and ethnic composition, median household income, educational attainment, and partisan composition, the sample and subsample are indistinguishable. Notably, the mean Democratic vote percentage in 2008 was 48.7 percent for all cities and townships and 48.8 percent for the MPPS subsample.

- Programs targeted at residents (such as recycling programs, promoting home weatherization, and so on).
- Programs targeted at local businesses (such as rebates to businesses that cut consumption, commercial recycling, formal recognition of green practices, and so on).
- Developing or purchasing alternative energy sources (such as employing solar panels or wind turbines). (CLOSUP, 2010: 4).

The response options were Already Adopted, Very Likely to Adopt, Somewhat Likely, Neither Likely Nor Unlikely, Somewhat Unlikely, Very Unlikely to Adopt, and Don't Know. Exhibit 1 reports the raw responses to this question.

It is interesting to note several patterns in the raw data. First, some of these programs are much more popular than others. More than 20 percent of respondents report that their cities or townships have already adopted the first three policies (energy efficiency in public facilities, municipal workplace practices, and programs targeting residents), and one-fourth report being very or somewhat likely to adopt them in the near future. By contrast, only a very few respondents have programs targeting businesses and alternative energy purchasing programs in their jurisdictions. Second, a wide range of responses exists regarding the likelihood of adopting each of the policies in the future. This wide variation suggests a high degree of heterogeneity across jurisdictions in terms of their preferences for various climate policies. Our empirical analyses test whether some of this variation can be attributed to the jurisdiction's partisan context.

To test hypotheses H_1 and H_2, policies are clustered according to their primary direct beneficiaries. The first, second, and fifth options all represent policies that are aimed at internal governmental and organizational behaviors; these policies are clustered into one group of *internal* policies. The third and fourth options represent policies that provide benefits or services directly to local residents and businesses; these policies are clustered into a second group of *external* policies. The hypotheses are that residents' partisanship will affect the probability of a city adopting external policies and that elected officials' partisanship will affect the probability of a city adopting internal policies.

In addition to these two sets of policies, the dataset is supplemented with information about each city's participation in two national programs: The United States Conference of Mayors' Climate Protection Agreement and the Sierra Club's Cool Cities Program. Both programs ask signatories to

Exhibit 1

Local Climate Policies, Michigan Cities and Townships (percent)

	Energy Efficiency in Facilities	Changing Workplace Practices	Programs Targeting Residents	Programs Targeting Businesses	Purchasing Alternative Energy
Already Adopted	20.9	20.8	22.9	2.4	3.7
Very Likely to Adopt	9.3	8.1	7.1	4.8	3.6
Somewhat Likely	19.2	14.3	17.4	11.4	11.9
Neither Likely Nor Unlikely	11.7	17.7	15.0	20.9	20.7
Somewhat Unlikely	6.9	7.8	6.7	12.8	15.1
Very Unlikely to Adopt	15.6	14.8	14.3	25.9	24.9
Don't Know	16.4	16.5	16.6	21.8	20.1
N	1,000	1,000	1,000	1,000	1,000

Source: CLOSUP (2010)

take concrete steps to reduce carbon emissions and implement clean energy solutions; both have more than 1,000 participating cities and other local governments. In Michigan, 31 local governments are currently participants in the Climate Protection Agreement and 28 are participants in the Cool Cities Program. These programs share many similarities with the internal policies included in the MPPS survey; that is, they involve activities such as implementing green planning processes and adopting smart energy solutions at the municipal level. As such, the hypothesis is that elected officials' partisanship will affect the probability of a city's participating in these programs.

Results

Exhibit 2 reports the results of a preliminary analysis of the relationship between local partisanship and local climate policies. Each column reports the results of a separate regression-type estimation. The dependent variable in each case is a binary variable coded 1 if the city or township has at least one of the policies (for external and internal policies) or is a participant in the program (for the Climate Protection Agreement and the Cool Cities Program) and coded 0 otherwise. Given the binary dependent variables, logistic regression is employed.[12]

The key independent variables in each logit analysis are three measures of local partisanship: the percentage of voters from that jurisdiction who voted for Barack Obama in the 2008 Presidential election (Dem percent),[13] the respondent's party identification (PID),[14] and a dummy variable indicating whether the jurisdiction's partisan majority and the respondent's party identification are the same (Party match).[15] Dem percent measures citizens' partisanship, whereas PID measures elected officials' partisanship. Party match captures situations where these two measures of partisanship are consistent. The remaining independent variables are intended as controls; they include a dummy variable indicating whether the local government is a city (City), the natural log of median household income (lnIncome), the percentage of adults with a bachelor degree (Bachelor percent), the percentage of the population older than 65 years (Over 65 percent), and the natural log of total population (lnPop). Data on jurisdiction type come from the Michigan Secretary of State (2008); income, education, age, and population data are all from the U.S. Census Bureau's 2005–2009 American Community Survey 5-year Estimates.[16]

[12] I ran additional analyses in which the dependent variable is the number of external and internal policies (rather than a simple binary variable) and the empirical model is a Poisson regression. In both cases, the main partisanship results are essentially the same, although more than 100 cases are lost in the additional analyses because of missing data.

[13] Several minor-party candidates were on the ballot (Michigan Secretary of State, 2008).

[14] Data for this variable come from the Fall 2010 MPPS. PID is measured on a standard 7-point scale with 7 = Strong Democrat.

[15] Party match is scored 1 if Dem percent > 0.55 and PID = 6 or 7. Party match is also scored 1 if Dem percent < 0.45 and PID = 1 or 2. It is scored 0 otherwise. Additional analyses (available from the author) find that the results reported in exhibit 2 are robust to small changes in the cutoff values for this variable.

[16] The Fall 2010 MPPS also included questions measuring the respondent's attitudes on a number of climate-related issues, such as whether promoting sustainability is an important element of local leadership; the severity of global warming as a public-policy problem; and the responsibilities of local, state, and federal governments in reducing global warming. In supplemental analyses, responses to these questions were included as additional regressors in the logit analyses. None were statistically significant, and given the potential that these attitudes and the respondent's partisanship are jointly determined they are excluded from the final model specifications.

Exhibit 2

Partisanship and Local Climate Policy, Michigan Cities and Townships (logistic regression coefficients)

	External	Internal	Climate Protection Agreement	Cool Cities Program
Dem percent	2.83**	– 0.33	– 6.25	– 10.76**
	(1.22)	(1.12)	(4.48)	(5.29)
PID	0.035	0.093**	0.94**	1.045**
	(0.050)	(0.046)	(0.33)	(0.40)
Party match	0.42**	0.37**	– 1.50	– 3.53**
	(0.19)	(0.18)	(1.19)	(1.68)
City	0.71**	0.48	3.25**	3.85**
	(0.32)	(0.31)	(1.16)	(1.51)
lnIncome	1.54**	0.24	1.28	– 0.92
	(0.56)	(0.51)	(2.25)	(2.74)
Bachelor percent	0.59	4.72**	5.95	16.61
	(2.24)	(2.072)	(8.91)	(10.87)
Over 65 percent	8.32***	– 1.38	– 1.52	– 22.12
	(2.34)	(2.23)	(12.14)	(16.83)
lnPop	0.26**	0.24**	2.14***	1.93***
	(0.10)	(0.091)	(0.53)	(0.56)
Constant	– 24.57***	– 5.99	– 40.30**	– 11.76
	(6.028)	(5.40)	(0.55)	(30.50)
R^2	0.12	0.08	0.60	0.59
N	754	754	754	754

***p < 0.05. ***p < 0.01.*

Source: CLOSUP (2010)

The first column of exhibit 2 reports the results of a logistic regression in which the dependent variable is whether or not the jurisdiction has adopted any of the external policies included in the MPPS. As hypothesized, Dem percent is positive and significant; jurisdictions that have a more Democratic citizenry are more likely to adopt climate policies targeted at residents or local businesses compared with jurisdictions that have a more Republican citizenry. Party match is positive and significant as well, indicating that when citizens' partisanship and elected officials' partisanship align, the probability of adopting external policies is even greater. The independent effect of elected officials' party identification (PID) is insignificant, as hypothesized. In addition, several of the controls are significant, including City, lnIncome, and Over 65 percent.

The second column of exhibit 2 reports the results of a logistic regression in which the dependent variable is whether or not the jurisdiction has any of the MPPS's internal policies in place. Here we see the opposite pattern in the partisanship variables: the elected official's party identification is positive and significant (jurisdictions whose elected officials identify as stronger Democrats are more likely to have internal climate policies) and the citizenry's partisanship is insignificant. When citizens and elected officials share the same partisanship (that is, Party match = 1), the probability of adopting internal policies is greater. Larger jurisdictions and cities or townships with a more educated citizenry are more likely to adopt internal climate policies as well.

The third and fourth columns of exhibit 2 report two more logistic regressions, with participation in the Climate Protection Agreement and the Cool Cities Program as the binary dependent variables, respectively. As with the internal policies, PID is positive and significant, with Democratic elected officials more likely to participate in these programs. Unlike with the internal policies, however, Dem percent is negative and, in the case of the Climate Protection Agreement, significant: cities with higher percentages of Democratic voters are less likely to participate in these programs. Party match also plays a different role here: it is negative in both regressions (and significant in the Cool Cities Program model), indicating that when citizens' and local officials' partisanship diverges, participation in both of these programs is more likely. Cities (as compared with townships) and larger jurisdictions (as compared with smaller ones) are more likely to participate.

The partisan effects reported in exhibit 2 suggest the effects of citizens' partisanship and elected officials' partisanship have both separate and interactive effects on a jurisdiction's climate policies. Indeed, an interesting and important question is what occurs when elected leaders of a city or township have partisan affiliations that directly conflict with the affiliation of their constituents. Exhibit 3 further investigates these multiple partisanship effects by reporting the percentage of jurisdictions in the survey that have external and internal policies, depending on whether they have a strong Democratic electorate and a strong Democratic elected official (N = 78 in our survey subsample); a strong Republican electorate and a strong Republican elected official (N = 159); a strong Democratic electorate and a strong Republican elected official (N = 12); and strong Republican electorate and a strong Democratic elected official (N = 22).[17]

The left two columns of exhibit 3 report the percentage of jurisdictions that have adopted external policies. We see that when the electorate votes solidly Republican (in the top row), moving from a strong Republican elected official to a strong Democratic elected official barely changes the percentage of jurisdictions that adopt the policies (from 21 to 23 percent). By contrast, when the electorate votes solidly Democratic, moving from a strong Republican elected official to a strong Democratic elected official is associated with more than doubling the percentage of jurisdictions that adopt the external policies. In other words, the effect of variation in the elected official's partisanship is only great when the electorate is strongly Democratic.

Exhibit 3

Michigan Cities and Townships Adopting External and Internal Policies, by Citizens' and Elected Officials' Partisanship (percent of survey sample)

	External		Internal	
	PID = 1 or 2 (Republican)	PID = 6 or 7 (Democrat)	PID = 1 or 2 (Republican)	PID = 6 or 7 (Democrat)
Dem percent < 0.45	21	23	29	32
Dem percent > 0.55	22	56	37	56

Sources: CLOSUP (2010); Michigan Secretary of State (2008)

[17] Exhibit 3 reports these results only for external and internal policies, because the percentages of cities and townships participating in the Climate Protection Agreement and the Cool Cities Program are prohibitively small.

The right two columns of exhibit 3 report comparable percentages for internal policies. Here we see that jurisdictions with Democratic electorates are more likely to adopt internal policies than are jurisdictions with Republican electorates, regardless of the partisan identification of the elected official. This difference is substantially greater, however, when the elected official is a Democrat. Thus, the effect of variation in the electorate's partisanship matters most when the elected official is a strong Democrat.

Exhibit 4 investigates hypotheses H_{3a} and H_{3b}. It reports selected results from a series of logistic regressions that begin with the analyses reported in exhibit 2 and add several elements to account for the partisanship of actors in surrounding jurisdictions. The exhibit reports the significance level of various measures of partisanship (note that each set of results is from a multivariate logistic regression that also includes the controls reported in exhibit 2). The first panel of exhibit 4 exactly replicates the exhibit 2 analyses that include only Dem percent, PID, Party match, and controls. Model 2 includes a measure that captures whether the jurisdiction is part of a partisan cluster, or *hot spot*, specifically the jurisdiction's estimated Z-score for the Getis-Ord Gi* statistic for Dem percent (Dem hot spot).[18] As exhibit 5 illustrates, Dem percent shows a high degree of clustering, with

Exhibit 4

Partisanship, Context, and Local Climate Policies (significance of logistic regression coefficients on partisanship variables)

	External	Internal
Model 1		
Dem percent	+**	–
PID	+	+**
Party match	+**	+**
Model 2 (with Dem hot spot)		
Dem percent	+	–*
PID	+	+*
Party match	+**	+**
Dem hot spot	+**	+**
Model 3 (with Dem percent N)		
Dem percent	+**	–
PID	+	+**
Party match	+**	+**
Dem percent N	–*	+
Model 4 (with Dem percent Co)		
Dem percent	+	–
PID	+	+*
Party match	+**	+**
Dem percent Co	–	+

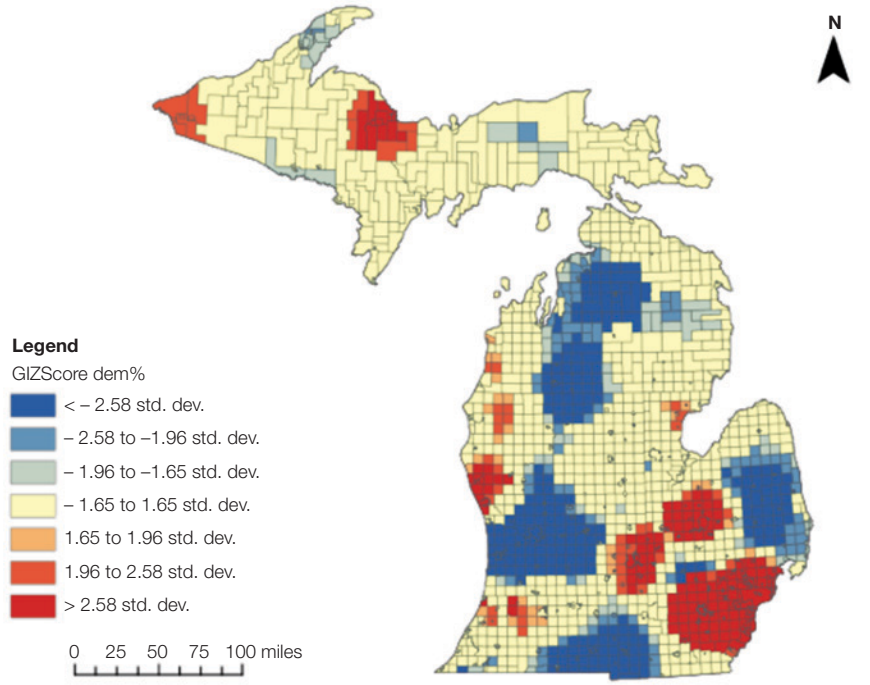
*$p < 0.10$. **$p < 0.05$.

Sources: CLOSUP (2010); Michigan Secretary of State (2008); U.S. Census Bureau (2009)

[18] Gi* uses GIS to compute the average value for one spatial unit (jurisdiction) and its immediate neighbors on the variable of interest (in this case, Dem percent), and compares that local average with the global average. If the cluster's average value is statistically different from the global average, the unit is considered to be part of a hot spot (for high values) or a cold spot (for low values). See Ord and Getis (1995).

Exhibit 5

Democratic Share of the Two-Party Vote for President, 2008 (Getis-Ord Gi*)



std. dev. = standard deviations.

Notes: Jurisdictions indicated in red have values of Gi significantly greater (Z > 1.96) than the state average. Jurisdictions indicated in blue have values of Gi* significantly less (Z < –1.96) than the state average.*

Democratic hot spots and cold spots throughout the state. Model 3 adds a measure of partisanship in the jurisdiction's immediate neighbors (Dem percent N).[19] Finally, model 4 adds a measure of county partisanship, which is the countywide percentage of the 2008 Presidential vote that went to Obama (Dem percent Co).

The results in exhibit 4 indicate that the partisanship effects observed in exhibit 2 are quite robust. The effect of the electorate's partisanship remains positive in all the external policy model specifications (although its significance is less than $p < 0.10$ in two cases). The effect of elected officials' party identification remains positive and significant in all the specifications for internal policies. The effect of Party match remains of the same sign and significance level as in the baseline models. In other words, even after we account for the effect of local partisan environment, partisan clustering, and county partisanship, the elected officials' party identification remains a strong and significant determinant of whether a city chooses to adopt internal climate policies. The electorate's

[19] This measure is constructed by creating a spatial weights matrix in ArcGIS 9.3 to identify each jurisdiction's immediate neighbors (sharing edges and corners), and then taking the mean of Dem percent for those neighbors.

partisanship remains a positive determinant of whether a city chooses to adopt external climate policies, although the precision with which these effects are estimated drops. The reinforcing effects of consistent partisanship on external and internal policies remain as well.

The exhibit 4 results also indicate that the broader partisan context has a direct effect on adoption of climate policies, above and beyond a jurisdiction's internal partisan dynamics. Inclusion in a partisan cluster (as indicated by the Dem hot spot variable in model 2) has a strong, positive, and significant effect on the probability that a jurisdiction adopts external and internal policies. In other words, cities that are part of a Democratic partisan cluster are significantly more likely to adopt local climate policies (and cities that are part of a Democratic cold spot are significantly less likely to adopt local climate policies) than one would expect considering only the partisanship of citizens and elected officials within their jurisdictional boundaries. In fact, the results in model 2 indicate that the effects of the broader partisan context may be more important than the partisan pressures that come from within the jurisdiction; the effects of Dem percent and PID become weaker and less significant when Dem hot spot is included in the model.

By contrast, the effects of Dem percent N and Dem percent Co are much less evident. In model 3, Dem percent N has a weakly negative effect on external policies, suggesting a slight offsetting effect, whereas it has a weakly positive (reinforcing) effect on internal policies. Similarly, Dem percent Co has a weakly negative effect on external policies and a weakly positive effect on internal policies, although in this case, neither effect is statistically significant. A possible explanation for the difference between the various partisan context factors is that the regional partisan cluster, captured by the Dem hot spot analysis, is, in fact, the spatial scale at which external partisan pressures have the greatest effect on the internal policy dynamics of a local government.[20] Future analyses will further explore the notion of how the effects of partisan context vary with spatial scale.

So far, the analysis has been limited to understanding the factors that lead cities and townships to adopt various local climate policies or to participate in two national climate action programs. The data collected in the MPPS are much richer, however; they also contain information about respondents' perceptions of their jurisdictions' intent to adopt additional policies. The final analyses consider these responses in more detail. Exhibit 6 reports the correlations between intentions to adopt each of the five MPPS policies. This analysis is limited to jurisdictions that have not already adopted each of the policies. We see that, although all the correlations are greater than 0.5, the correlations that are between the most similar policies (for example, facilities and workplace practices, residential programs and business programs, and business programs and alternative energy) reveal the largest correlations (0.73, 0.71, and 0.74, respectively). In other words, in the minds of the MPPS respondents, cities and townships with the greatest intention to adopt one of these policies also have the greatest intention to adopt the other most similar policies.

Exhibit 7 reports a series of ordinary least squares (OLS) regressions that are designed to identify the factors that are related to a jurisdiction's intention to adopt a particular local climate policy,

[20] Another possibility is that the Getis-Ord routine in ArcGIS creates a less noisy measure of spatial context than the spatial weights matrix approach. The Gi* tool effectively imputes values for missing units and jurisdictions, whereas the spatial weights matrix approach treats missing values as missing. As such, the Dem hot spot measure of spatial context may have artificially low levels of measurement error.

Exhibit 6

Correlations Between Reported Likelihood of Adopting Local Climate Policies (correlations)

	Facilities	Workplace Practices	Residential Programs	Business Programs	Alternative Energy
Facilities	1.00				
Workplace practices	0.73	1.00			
Residential programs	0.51	0.58	1.00		
Business programs	0.56	0.58	0.71	1.00	
Alternative energy	0.55	0.56	0.58	0.74	1.00

Source: CLOSUP (2010)

Exhibit 7

Determinants of Intentions To Adopt Local Climate Policies, Michigan Cities and Townships (ordinary least squares regression coefficients)

	Facilities	Workplace Practices	Residential Programs	Business Programs	Alternative Energy
Dem percent	– 0.26	– 0.45	– 0.087	– 1.22	– 0.80
	(1.00)	(0.93)	(1.046)	(0.81)	(0.76)
PID	0.030	0.044	0.062*	0.082***	0.052**
	(0.032)	(0.029)	(0.031)	(0.027)	(0.026)
Party match	0.036	– 0.040	– 0.19	– 0.012	0.052
	(0.13)	(0.12)	(0.13)	(0.10)	(0.10)
Z(Gi*)	– 0.014	– 0.010	– 0.021	– 0.024	– 0.026
	(0.022)	(0.021)	(0.024)	(0.018)	(0.018)
City	0.75***	0.30	0.65**	0.58**	0.025
	(0.26)	(0.24)	(0.27)	(0.21)	(0.20)
lnIncome	– 0.74*	– 1.11***	– 0.46	– 0.70**	– 0.46
	(0.39)	(0.36)	(0.40)	(0.31)	(0.31)
Bachelor percent	3.44**	2.81**	1.42	1.66	0.23
	(1.44)	(1.37)	(1.45)	(1.19)	(1.20)
Over 65 percent	2.27	0.84	0.15	0.041	2.00
	(1.52)	(1.43)	(1.59)	(1.29)	(1.22)
lnPop	0.33***	0.41***	0.29***	0.30***	0.33***
	(0.069)	(0.064)	(0.069)	(0.054)	(0.053)
Num programs	0.40***	0.33***	0.11	0.20***	0.12**
	(0.098)	(0.10)	(0.093)	(0.049)	(0.047)
Constant	7.57*	11.23***	5.29	7.48**	4.57
	(4.29)	(3.90)	(4.36)	(3.41)	(3.42)
R^2	0.14	0.14	0.08	0.12	0.07
N	518	527	496	635	644

Z(Gi) = estimated Z-score for the Getis-Ord Gi* statistic.*

**p < 0.10. **p < 0.05. ***p < 0.01.*

Sources: CLOSUP (2010); Michigan Secretary of State (2008); U.S. Census Bureau (2009)

and specifically whether these factors are the same as those factors related to a jurisdiction ultimately adopting those policies. Each column reports the results of a separate OLS regression in which the dependent variable is a jurisdiction's perceived likelihood of adopting a given policy, scored from 1 (very unlikely) to 5 (very likely). These analyses, like the analyses in exhibit 6, are limited to jurisdictions that have not already adopted a given policy.

We see from exhibit 7 that, in fact, the factors that explain intentions are quite different than the factors that explain ultimate policy adoptions. The partisanship variables that were significant and robust in the previous analyses are nearly always insignificant. The two structural variables (city and population) are positive and typically significant, suggesting that cities and large jurisdictions report a greater likelihood of adopting each of the policies than townships and smaller jurisdictions. Cities and townships with more educated and older populations also report a greater likelihood of adoption, whereas cities and townships with higher median household incomes are less likely to adopt local climate policies. Finally, the number of existing programs is a strong and positive indicator of whether a jurisdiction is likely to pursue additional policies. Together, these results suggest that jurisdictions do not view local climate policies in isolation, but rather pursue multiple policies that address similar needs and goals. Cities, larger jurisdictions, those local governments with more educated and older citizens, and those cities and townships with fewer resources are all more likely to pursue local climate policies, although whether they are actually adopted has more to do with the local partisan political climate.

Implications

To summarize, analysis of the Fall 2010 MPPS data suggests that partisanship affects local climate policy in ways that are consistent with this article's characterization of a given policy's direct targets or beneficiaries: when a policy targets residents or businesses, the partisanship of the jurisdiction's electorate significantly influences the probability of that jurisdiction adopting such a policy. When a policy seeks to influence the behavior of government employees or decisionmakers, it is the partisanship of the jurisdiction's elected officials that matters. Further, local policy decisions are made within a broader partisan political environment, and the effects of regional partisanship affect local climate policy decisions as well.

These findings have important implications for our understanding of the influence of partisanship on local policy processes and outcomes. Recent studies of the effect of partisanship at the local level tend to focus on fiscal policy outcomes and the effect of the mayor's partisanship on those outcomes. Given that most fiscal policies (1) result from a political interaction between the mayor and the city council (who might have different partisan affiliations); (2) are constrained by mandates, contracts, and ongoing obligations; and (3) provide direct benefits and services to residents and businesses (rather than target the behavior of government actors), it is not surprising that they find limited (Gerber and Hopkins, 2011) or null (Ferreira and Gyourko, 2009) results. This article focuses on policies that differ in all three respects: they often result from unilateral executive action; they are less constrained by other levels of government; and they vary in terms of whose behavior they target. By more directly linking characteristics of a policy with relevant measures of partisanship, this article provides evidence of the conditional effects of local partisanship.

These findings are also important for how we think about climate policy, specifically voluntary policies that aim to mitigate climate change by reducing carbon emissions and energy consumption. The analysis encourages us to consider the complex interplay between local partisanship and the broader partisan environment. Local forces clearly matter, especially on policies that involve targeting the behavior of municipal government employees and participation in the programs of national organizations such as the United States Conference of Mayors and the Sierra Club. These forces include partisanship and features of the local government such as population size and capacity (that is, whether they are full-service cities as opposed to townships). At the same time, evidence shows that partisan actors outside a jurisdiction may also influence a jurisdiction's climate policy decisions. These outside actors may be especially important in helping local government officials overcome the potentially formidable barriers inherent in voluntary climate change-mitigation policies, such as the policies included in the current analyses.

Future research will expand the set of climate policies to include policies focused on adaptation to the consequences of climate change. In contrast to the mitigation policies analyzed in this article, adaptation policies lend more naturally to intergovernmental collaborative approaches, because the effects they seek to combat—storms, droughts, flooding, rising or falling water levels, heat events—tend to occur at a regional scale. A preliminary hypothesis is that these features of adaptation policies will result in a more important role for actors outside a given jurisdiction and will demonstrate greater spatial interdependencies.

Finally, these results have implications for how policy advocates target their resources. Many of the policies studied here—especially internal mitigation policies and participation in national organizations' programs—appear to be driven less by local (or regional) citizen demand than by the personal decisions of local government officials, whose own partisanship and preferences may be at odds with the preferences of the citizens they represent. These officials, who are in most cases big-city mayors, play leadership roles as policy entrepreneurs, setting the local agenda and creating a green culture within the organizations of their city governments. These findings suggest that advocates may be well served to pursue a top-down strategy, targeting elected officials, rather than a bottom-up public education strategy. Future research will more closely consider the role of local elected officials as climate policy entrepreneurs.

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Author

Elisabeth R. Gerber is the Jack L. Walker, Jr. Professor of Public Policy at the University of Michigan.

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