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Home Rule and Environmentalism: The Adoption of Green Initiatives in U.S. Municipalities

By

Luke Eastin

Introduction

In recent years there has been a movement in academia from studying environmental policy on the national level to a much narrower examination of local municipalities and their respective green initiatives. The implications of this research reach well beyond the borders of academics and hit squarely municipalities and their corresponding local policy makers. We, as political scientists, must ask what particular characteristics of municipalities play the most significant role in green initiative adoption. Recent urban scholarship has suggested several variables that influence the adoption of environmental policies, but one specific variable, municipality home rule status, has had little to no scholarly consideration.

I posit that home rule municipalities are more likely to embrace green initiatives than their non-home rule counterparts. Through the design and analysis of my own original dataset, this research will contribute to urban scholarship through the exploration of a relatively new variable in comparison to more commonly used variables in environmental policy analysis at the local level. This study adds an innovative assessment of green initiative adoption from a perspective that is neither widely held nor examined within urban studies. In more practical terms, this research can be used as a guide for local governments to further decipher the remaining mystery that surrounds green initiative adoption. I hope to also reasonably outline the

scenarios in which green initiative adoption is feasible as well as effective, and under what conditions it may be difficult to achieve. An overall evaluation of the opportunities for green policy will certainly aid local governments in understanding what green initiatives are, when and where adoption should occur, and the circumstances that make green policy implementation an effective way to positively affect both the local and national environment.

The essential underpinnings of environmental policy adoption have already been laid out by previous scholars. However, this fundamentally unique research presents a tangible contribution to urban politics, and the broader field of political science, by creating an opportunity for further research focusing on how home rule status impacts green policy initiatives. This research should also develop a renewed interest in green initiatives on the municipal level for scholars and local policy makers alike, as well as promote a comprehensive description of how and when the implementation of green initiatives will be successful.

Home Rule and Independent Variable Selection

As noted previously, there is expansive research addressing environmental policy and sustainability on the local municipal level. The variance among urban scholars regarding green policy adoption pertains most closely to the predicting variable selection. Prior to discussing the variable differences however, a brief introduction to the concept of home rule needs to be provided for contextual purposes.

Home rule specifications vary depending on the state, but each of the states examined in this study fits a basic definition. The definition of home rule at a rudimentary level is local government autonomy bestowed upon local governments based on particular conditions that vary from state to state. Richardson's (2011) definition fits this mold as he describes home rule as "actual grants of authority given to local governments...found in local and state statutes, both

initiated by the state legislature.” As a general rule home rule municipalities have more policy making independence from the state government than do non-home rule municipalities, who must follow a more stringent set of state constitutional guidelines.

Home rule is believed to be a critical variable to consider when examining local level policy making by numerous scholars (Bluestein 2006, Krane et al. 2001, Richardson et al. 2003). Whether home rule status correlates with increased local policy autonomy or not has been a strongly debated topic throughout urban scholarship and this research expects to contribute more evidence regarding home rule and local government autonomy.

Variable choice among urban scholars represents the widest discrepancy in current green initiative research. One of the variables considered by urban scholars is the wealth and resources of a municipality that in turn can be applied toward green initiatives. According to many scholars, higher levels of environmentalism within municipalities correlate significantly with the wealth and overall resource availability of a municipality (Kahn 2006, Lubell et al. 2009, Press and Balch 2002). Through Lubell, Feiock and Handy’s (2009) creation and examination of their sustainability index, they discovered that although a municipality’s wealth and available resources are key contributors to eco-friendly policy, multiple variables have a significant impact including population, socioeconomic status, among others.

A second predicting variable that has been studied extensively is the style of government through which the city is structured. Lubell, Feiock, and Edgar Ramirez de la Cruz (2009) proposed that land use regulations vary depending on the power structure of mayors, city managers, and local interests. On a similar note, Jepson (2004) found that community planners and developers have a substantial impact on local level environmentalism. Each of the above

authors found that the local governmental structure plays a critical role in environmental regulation and policy, albeit through different facets of sustainability and governance.

Multilevel governance has also been found to have a significant impact on environmental initiatives on the local level according to some scholars (Betsill and Rabe 2009, Rabe 2008, Betsill and Bulkeley 2006). Betsill and Bulkeley (2006) performed an analysis of the multilevel governance body entitled Cities for Climate Protection (CCP). The authors used evidence from this case study to explain the variance among local environmental initiatives, and argued that their research shows that multilevel governance explains local environmental policy adoption better than any other variable or model. The authors argued that dividing up the levels of governance prior to research both limits, and predisposes the potential outcomes. For this reason the authors believe an examination of both local and state governance should be considered in order to achieve an accurate and complete understanding of environmental policy adoption.

Increased civic participation has also been shown to have a positive relationship with environmentally sustainable policies on the municipal level (Krause 2012, Portney and Berry 2010, Portney 2005). Portney and Berry (2010) specifically found that those cities that take sustainability more seriously have a positive correlation between high levels of participation and pursuit of environmentally sustainable policies. However, the authors did acknowledge that civic participation alone does not explain the wide variance in local environmental policy adoption. This suggests that urban scholarship must continue to study and search for original variables that are relative to environmental, sustainable, or green policy adoption.

A municipality's mean education attainment has also been shown to correlate with the adoption of green policy initiatives (O'Connell 2008, Portney 2008). O'Connell (2008) used OLS regression of survey data to show that a city's smart growth policy is significantly linked to

their corresponding percentage of college level graduates. This finding may indicate that the knowledge attained from higher education directly influences feelings towards environmental policy adoption. So, as O'Connell suggests, "cities with more college graduates may contain more people who support smart growth" (2008).

One variable in particular has obviously been overlooked within recent scholarly literature as it pertains to green policy. Home rule is disregarded almost wholly from scholarly discussion, which in turn prompted me to further examine the influence that it may have on green initiative adoption. The municipality's status of home rule or non-home rule, as Richardson (2011) suggests, does have at least a minor effect on local government autonomy, and therefore would also affect the possibilities of and opportunities for green policy adoption and implementation. Not only does this research analyze a relatively ignored variable, but it also examines this variable through original data analysis to help provide an additional lens to view municipality green policy adoption through. An original dataset was created and evaluated for this research study, with the specific purpose of defining green policy initiatives in a unique way.

Methodology and Data

I address my hypothesis that home rule municipalities will have higher levels of environmentalism through both quantitative and qualitative analysis. Initially my supposition is tested using binary logistic regression to explain the probability of this premise being due to random error. These quantitative methods will provide conclusions that are empirical and generalizable in nature, providing the most complete and efficient findings possible, which can in turn be functional for both academic scholarship enhancement and local government policy analysis. Quantitative analysis can misrepresent data by not accounting for contextual information that other methodologies could, and because of this a brief qualitative section

including case studies of two chosen municipalities from the developed dataset will provide that missing contextual link to the logistic regression analysis.

The quantitative methodology is only as strong as the data selection however, and since there is no prevailing uniform dataset for this particular research, I developed an original dataset based on the evaluation of city and state governmental websites. The accuracy of this dataset is reliant upon municipality self-reporting which many scholars may deem unpredictable, but even so, this dataset is not meant to be a perfect creation. I attempt to only provide a new perspective to be applied toward the adoption of green initiatives not yet represented in urban scholarship.

The dataset itself examines 50 municipalities deriving from five states, California, Michigan, Illinois, Texas, and Pennsylvania. These municipalities and their corresponding central characteristics can be found on Table 1. The states were chosen to represent each region of the United States, North, South, East, West, and Midwest with the specific purpose of eliminating regional predispositions toward green policy adoption. As mentioned previously, home rule is defined similarly among each of the five states. One specific commonality is that in each state home rule status can be enacted through voter referendum, offering a generally equal platform for this research.

On another note, each municipality was chosen at random, with the only control, other than region, being the intentional collection of both 25 home rule and 25 non-home rule municipalities in order to provide an equal stage upon which to conduct analysis. The variables indicated and developed include: educational attainment defined as the percent of the population with a bachelor's degree or higher, population, mean income (all three derived from 2010 Census Bureau data), form of government defined as the most closely linked government structure to the

following; (1) mayor/council and (2) council/manager, home rule status, and overall environmentalism.

Overall environmentalism was determined through the combination of three separate variables that originate from the Smarter Cities Project conducted by the Natural Resources Defense Council. The variables include (1) whether or not the municipality offers a recycling program, (2) the amount of green space in acres, and (3) whether or not green building techniques are commonly used within the municipality. Green space was demarcated as park and recreation total acreage, and green building techniques were defined using the standards provided by the Leadership in Energy and Environmental Design (LEED). The combination of these three variables ultimately equated a score from zero to five, with five being the highest amount of environmentalism and zero being the lowest. For the purposes of this study's implementation of logistic regression, the environmentalism scale of zero to five was reduced into two categories. Those municipalities that scored three or below on the original environmentalism score were coded as one for low environmentalism, and those scoring four and five were coded as two for high environmentalism. This was done not only to create a two category dependent variable for accurate logistic regression, but also because the variable recycling was nearly unanimously adopted by all municipalities, and therefore it was unfeasible to include this variable in the final environmentalism assessment as exceptionally significant.

This dataset provides a new combination of determinants of environmentalism within a municipality, but of course these determinants can be criticized because there are many other indicators of an eco-friendly city. Including every variable would create a dataset too complex, possibly resulting in a loss of parsimony that keeps the findings easy to comprehend for practical purposes. This original dataset also provides an N of 50, providing an excellent foundation for

generalizable findings, and eliminating partially the bias of a single case study. Most urban scholarship studies highly populated and prestigious cities, but this dataset, on the contrary, includes municipalities of all populations and sizes further extending the scope of urban studies to smaller normally ignored towns and villages. In sum, my methodology and data should lead to generalizable findings that will further urban scholarship while simultaneously providing practical information necessary for local level policy makers.

Logit Analysis

The findings are represented through logistic regression tables displaying the outcome of the hypothesis, as well as the other conditional variables selected from the dataset. The regression equation used multiple independent variables (predictors) evaluating each variables' statistical significance relative to the dependent variable (overall environmentalism). The Pseudo R Square value, as the endnote under table 2 shows, represents the amount of variance explained by the regression equation, and is equal to .592. Therefore, 59% of the variance in municipality adoption of green initiatives is explained through this regression equation, while leaving open a window for other variables to have significance such as, multilevel governance, community social capital, civic participation, among others. This gap however, is not a wide one, and ultimately this regression equation explains a greater part of the variance. On another note, table 2 also displays the model Chi-Square, measured at 28.992, with a significance of .000. This high Chi-Square value and corresponding significance level allows the rejection of the null hypothesis, and demonstrates that this regression model fits the observed data quite well. The proportional reduction of error (PRE) for this logistic regression equation calculates as .52 translated as a 52% reduction in error when predicting the dependent variable based on the inclusion of the independent variables used in this logistic regression equation. These three

critical statistical measures indicate the high level of accuracy and worth of this regression equation in explaining the variance associated with green initiative adoption on the municipal level.

Table 2 also represents each of the independent variables that were included in the logistic regression equation and signifies their correlative significance in relationship to each municipality overall environmentalism. The statistical significance of each predictor shows the impacts that they have on the overall environmentalism dependent variable. Through this regression analysis we can see that three of the five predicting variables do not play significant role in explaining any of the variance. The mean income, education attainment, and form of government variables do not appear to have a significant impact on green initiative adoption with each the corresponding significance levels rising well above the needed .05 significance level. These findings do indeed have implications for both academic scholars and local level policy makers, in that these variables may not need to be valued heavily when considering green initiative adoption. Two of the independent variables, home rule status and population, are both statistically significant with a 95% certainty that their significance is not due to random error.

In sum, the logistic regression analysis supports the original hypothesis. The significance of the home rule status predictor is equal to .029, confirming that municipalities that have enacted home rule are more likely to adopt green initiatives. Even though home rule status does explain a portion of the variance, the population variable appears to play an even larger role. The statistical significance found for the predictor population equates to .001, which is substantially larger than the home rule predictor. Green initiative adoption has a positive correlation with the population predictor meaning that higher populated municipalities are shown to be more likely to adopt green initiatives. So, although my hypothesis was shown to be

accurate, municipality population, according to this regression analysis, seems to have a stronger connection to green policy initiative adoption on the local level.

Slightly different outcomes occurred when the overall environmentalism variable was separated out into its three original variable forms, recycling, green space, and green building. Each of these variables is represented through three separate logistic regression equations detailed below on Tables 3, 4, and 5. During this analysis we find that none of the tested independent variables are significant relative to the adoption of a recycling program by municipalities. Nearly all of the municipalities in the study, barring only three, have adopted a recycling program and therefore this result further supports an earlier claim that the recycling variable is relatively useless in explaining green initiative adoption overall. Another variable, form of government, was found to be a partially significant variable relative to green space with its significance level reaching .056, just nearly missing the .05 significance level. Continued research, and the addition of more cases may prove that the form of government variable is significant relative to the establishment of green space.

The more fascinating and thought-provoking discovery, as it pertains to this research, is found through the analysis of the green building technique variable. Home rule status, as expected, plays a significant role in explaining green building techniques, but interestingly, home rule status plays a larger role than municipality population in this regression equation. Rather than population explaining the most variance, as shown in the original logit equation, it is home rule status that explains the greatest variance of green building adoption. Home rule status has a positive relationship with this environmental variable meaning that home rule municipalities are more to likely to adopt green building techniques than non-home rule municipalities. This insight is especially fascinating in that no other independent variable was as significant as home

rule status in predicting green building adoption, making this logistic regression equation critical to the home rule variable's possible future inclusion as an important policy predictor.

Case Study Analysis

The following case studies represent two of the municipalities included in the dataset, both measured as highly environmental, but with the one distinct difference being home rule status. Examining these two municipalities more closely should support the previously discovered quantitative results by specifically studying the environmental paths of these two different cities, and searching for both their commonalities and discords regarding green initiative adoption.

Allen, Texas

Allen is located in Collin County, Texas on the Northeastern side of the state about 25 miles North of Dallas. The city's population reached 84,246 in 2010 according to Census Bureau data (2012), and currently the city covers about 27 square miles with a relatively humid climate due in part to the lack of a large water source within the city. Allen was built upon the railroad industry which really began to flourish in the late 1800s, and was incorporated as a city officially in 1953 with only four to five hundred in population. It has since grown dramatically due to the construction of a US highway, an international airport, and being so close in proximity to the constantly developing Dallas, Texas (Allen 2012).

Following the city's declaration as a home rule chartered city in 1979 under the council/manager form of government, there was a population spike that had not been seen at any time prior. From 1980 to 1990 there was about an eleven thousand population increase, in part of course due to the surrounding growth of the nation, but also possibly in part due to the home rule charter adoption (US Census). As the population increased, so did local businesses

culminating in the retail and local business center it is today. The dramatic increases in population, local business, and economic growth Allen has today may also be in part due to the 19 straight years of lowered taxes producing quite the incentive for more commercial and private business growth to continue (Allen 2012).

As the city thrived into the 2000s, an enormous growth in environmental initiatives became obvious as the continued development of recreational parks and hiking trails grew to over 800 acres of park land, and 50 miles of hiking trails. The thriving business community has become critical in employing green building technologies, specifically LEED certified projects of many kinds. These green initiatives have been advanced through numerous environmental groups and clubs including the Allen Garden Club, the Keep Allen Beautiful program, along with many water conservation opportunities for the public (Allen 2013). These group opportunities have encouraged further education of and more public support for green initiatives within the city of Allen. Prior to all of these advancements and green initiatives was the adoption of a city wide recycling program collecting numerous recyclable goods, and for the items Allen does not collect, nearby locations for recycling drop off are offered (Allen 2012).

At what exact point was Allen on its way to green initiative adoption is hard to pin point, and proving even more difficult is what particular variable was the key contributor to such an increase in local environmentalism. It may have been the exponentially growing wealth that allowed for environmental projects to begin taking shape, and of course the wealth derived from the increase in business and industry due to considerable population growth. It appears Allen is a city that fits the multiple variable effect seamlessly, with everything from population, wealth and resources, and local industry playing a role in the adoption of green initiatives. However, what can be said is that home rule enactment in 1979 opened the door to a population increase,

as well as new, less constrictive ways to conduct local economic business, and in turn growing so rapidly. The adoption of a home rule charter, in the case of Allen, Texas, does seem to have played a role over the long run, although an arguably indirect role, in their high levels of green initiative adoption.

Geneva, Illinois

Geneva is located on the western edge of the Chicago suburbs and as of 2010 had a population of 21,495 (US Census). Geneva has been the county seat of Kane County since its inception in the early 1800s, and therefore has had many prominent county leaders including both lawmakers and businessmen, among others, supervising and encouraging its growth. The city began as a predominantly agricultural village producing such goods as butter and cheese specifically. After officially becoming a city in 1887 and adopting the mayor/council form of government, the railroad industry became a key component of local economic growth and business. The city has benefitted in more recent times from US highways connecting the city to Chicago, along with the relative closeness of international airports bringing in tourist traffic, and many types of private and commercial business (Geneva 2001).

Important though is the fact that Geneva has not enacted a home rule charter since its incorporation as a city in the late 1800s. Home rule has been discussed and considered throughout the 2000s in city wide meetings, but nothing tangible has come from those considerations to believe that home rule adoption will occur any time in the near future (Geneva 2012). Even so, Geneva has been growing in terms of environmental initiative enactment, including about 30 city sponsored parks, a recycling program, and the use of green building techniques. Geneva is measured on the low end of high environmentalism being measured as a four instead of five on the original overall environmentalism scale. It may be that critical

difference between those cities coded as four and those coded as five is directly related to the enactment of a home rule charter. Home rule status could open up the possibility for further growth in environmental policy and initiative adoption (Geneva 2012).

Similar to Allen, Texas, Geneva's population grew due to its proximity to a larger commercial city, and the nearby railroad industry critical for the transportation of both agricultural and manufactured goods. However, Geneva's population is currently only one third the size of Allen, Texas, and since total population has been found to be a significant predictor of green initiative adoption, this population difference cannot be ignored. It may be that geographical luck played a part in the successfulness of the city, as it indirectly caused an increase in population and wealth, but are those the key contributing factors to Geneva's green initiative adoption? Again, it appears we have a case in which multiple factors played a role in the development and implementation of green initiatives, but Geneva's smaller population and lack of a home rule charter may have created a metaphorical glass ceiling for green policy adoption. If the recent discussion of a home rule charter in Geneva becomes a reality, time will tell whether this city may benefit environmentally from the additional local autonomy.

Implications of the Findings

With the analysis completed, and the findings presented, it is time to examine the practical inferences that can be drawn from this research in regards to both academic scholarship and local government policy makers. As my hypothesis suggested, disregarding the home rule variable, which urban scholars have for the most part done, whether it be intentional or not, is without a doubt a major error. Ignoring the home rule variable is discounting an important piece to the environmentalism puzzle, and without it, the mystery of green policy initiative adoption will never be fully understood. Further research using the home rule variable will change some

of the popular environment policy adoption belief systems within urban studies, and simultaneously alter how urban scholars examine policy adoption in general. More extensive research on the relationship between home rule status and green policy adoption will show an undeniable positive relationship between the two. If this is the case, then many previous urban scholars need to take notice as this would contradict many of their findings.

Local government policy makers should also take notice of the results of this research, as it can be of practical use on many levels. If a non-home rule municipality desires to develop green initiatives, then local officials should certainly study the adoption of a home rule charter, especially if there is local public support for environmental policy initiatives. Although every state has different home rule charter regulations, local level policy makers should definitely consider lobbying their local constituents for the change.

The conditional variable analysis has shown that three particular variables do not show any relative significance to green initiative policy adoption on the municipal level. The mean income, education attainment, and form of government variables may not play as significant of a role as some scholars suggest. Scholars such as Lubell, Feiock, Ramirez de la Cruz, and Jepson, may need to re-evaluate the impacts that form and structure of government have on green policy adoption. The same goes for those scholars that suggest municipality wealth and municipality education are significant predictors of green initiative adoption. All of these scholars must further examine the possible impacts of home rule status along with population in order to get a more complete picture of green initiative adoption.

The predictor, population, was found through this analysis to have a strong significant impact on green initiative adoption. These results illustrate that urban scholarship needs to dig deeper into research examining why a larger population equates higher levels of green initiatives

or overall environmentalism as this research suggests. It may be that civic participation is more common in larger populated municipalities, or wealth and resources may be more abundant in larger municipalities. No matter which particular variable is the key contributor to green initiative adoption, more expansive research in these specific areas is the only way to further explain and understand this discovery.

Unfortunately for the local governmental leaders and policy makers of lower population municipalities this finding may be damaging to their opportunity for green initiative development. It is not feasible for a small municipality with a small population to increase their population in order to attain green initiatives. Since exponentially increasing population is not a realistic goal of smaller municipalities, the significance of population relative to green initiative adoption may only be a conditional relationship dependent upon other variables such as civic participation, municipality wealth, or the mean education attainment of its population.

Another inference that can be drawn exclusive from the actual output that the regression analysis produced lies within the original dataset created for the quantitative research. Included in the N portion of the dataset were 50 cities ranging from villages to cities. The contribution that this dataset analysis provides is an evaluation of overwhelmingly disregarded municipalities that are generally thought of in urban studies as insignificant to the overall scheme of urban politics. Examining smaller, less populated municipalities provides a new view of urban politics that prior to this research has, for the most part, been omitted. Continued research on less considered municipalities will create either contributions to current urban scholarship, or original conclusions that apply to the aforementioned smaller municipalities.

As for the case study analysis, we see that in two cities separated by population, geography, and home rule status, successful green initiative adoption has occurred, but to

different degrees. Allen, Texas was more successful at green initiative adoption than Geneva, Illinois even though they share so many common historical landmarks. Each city was built upon the railroad and transportation industry, resulting in a spike in population, wealth, and resources. The key differences include home rule status, total population, and possibly the environmental programs and clubs offered.

It appears that home rule status and total population are both significant predictors of green initiative adoption in both of these cities. Following the enactment of home rule the city of Allen grew tremendously and in turn developed the nationally recognized environmental initiatives they are known for. Allen's population has increased dramatically since home rule charter adoption accumulating to 84, 246 in 2010, and as the logit analysis has suggested, the larger the population of a municipality the more likely they are to adopt green initiatives. Geneva has not produced nearly as many green initiatives as Allen, and it appears that their lack of a home rule charter and smaller population, are at least in part, predictors of their lower environmentalism level.

On a another note, the city of Allen offers many environmental groups and programs for the public to join, while Geneva on the other hand has not. This finding may have some validity, however, because the logit analysis did not include civic participation as an independent variable, further analysis may show that civic participation may significantly affect the presence of municipality green initiative adoption.

Conclusion and Discussion

In sum, through the creation and development of an original dataset, applying logistic regression, and the inclusion of contextual case study analysis, this research has contributed to urban scholarship in numerous ways. Of course, this research has not been completed without

flaw, and continued research using the both similar and dissimilar variables, a new definition of environmentalism, a larger N study, and a different case study selection could prove to contribute even further to urban scholarship.

With the addition of variables such as civic participation, the amount of social capital, and possibly the extent of multilevel governance, a clearer and more complete picture of green initiative adoption at the municipal level might be established. As the case study analysis briefly noted, the environmental programs offered for the public in Allen, Texas may have impacted the overall environmentalism of the city as a whole. Therefore, civic participation would be an excellent addition to further research. Social capital and multilevel governance have not been examined thoroughly enough up to this point, so the inclusion of these two variables is also necessary in further policy research. The accumulation of these variables along with the two statistically significant variables in this research, home rule status and municipality population, may provide a greater R Square value and explain a higher percentage of the variance associated with green policy adoption.

Applying a different definition of environmentalism to this research study could also alter the findings and implications. Adding variables such as air quality or energy production as supplementary variables to the environmentalism calculation would provide a more comprehensive definition of environmentalism as it pertains to municipalities. Green building techniques, measures of green space, and recycling programs are only initial estimates of a sustainable or eco-friendly municipality, and supplementary variables, including the two aforementioned, would measure more wholly environmentalism on the local level.

Another third alteration in the research could be changing the N either in number or in case selection. A larger N study may support the findings of this paper, or provide new

significance for a variable or variables that have been overlooked or found to not have an impact in this research. The overall random selection of cases, as for the most part this study implemented, does produce an overall unbiased case selection, but controlling the N for some variables, such as population, would provide a slightly different output of findings.

Lastly, choosing different specific municipalities for the qualitative case study section would provide new and useful insights that the current research does not. Examining home rule municipalities that were not successful in their green initiative endeavors would show under what conditions these municipalities were unsuccessful, and whether certain decisions made by local government negatively affected the possibility of green initiative adoption. If particular business or economic decisions were made differently, would there have been a greater opportunity for green policy? The only way to answer these types of questions completely is to continue the case study analysis including more municipality variation.

The concluding results show that although home rule status is a significant predictor of green initiative adoption, municipality population plays a somewhat stronger role in green policy adoption. This research study confirms my hypothesis, while also suggesting that municipality population plays a critical role in understanding municipality green initiative adoption. In sum, this article has provided contributions to urban scholarship through examining an original dataset and a new definition of municipality environmentalism. On a practical level, this research provides a fractional guideline explaining the factors that need to be assessed by local municipal governments when attempting to initiate green policy. Analysis has shown that even those communities without tremendous economic resources can apply green initiatives, especially when the municipality is home rule or chartered. Urban scholarship can learn from and expand upon this research in many abovementioned ways, but more specifically; this research provides

an additional element, upon which improved arguments for municipality green policy adoption can be formulated.

Appendices

Table 1

Municipality ID	Population	Mean Income	Home Rule	Form of Government
Ada MI	13,142	83,357	No	council/manager
Addison IL	36,942	76,269	Yes	mayor/council
Allen TX	84,246	107,006	Yes	council/manager
Arvin CA	19,304	38,212	No	council/manager
Bedford MI	31,085	74,651	No	council/manager
Birch Run MI	1,555	53,761	No	mayor/council
Carbondale IL	25,902	62,357	Yes	council/manager
Carlisle PA	18,682	79,913	No	mayor/council
Chambersburg PA	20,268	49,632	No	council/manager
Charleston IL	21,838	74,889	No	council/manager
Corona CA	152,374	92,698	No	council/manager
Crandall TX	2,858	81,903	No	council/manager
Crowley TX	12,838	72,658	No	mayor/council
Dubois PA	7,794	43,945	No	mayor/council
Easton PA	26,800	53,310	Yes	mayor/council
Elk Grove CA	153,015	96,972	No	council/manager
Exeter CA	10,334	57,763	Yes	council/manager
Galveston TX	47,734	67,510	Yes	council/manager
Geneva IL	21,495	118,672	No	mayor/council
Greensburg PA	14,892	68,727	No	mayor/council
Greenville IL	7,000	54,551	No	mayor/council
Groveland MI	5,476	72,188	No	council/manager
Hamburg MI	21,165	97,203	No	mayor/council
Hanover PA	1,571	54,490	Yes	mayor/council
Hutto TX	14,698	71,814	No	council/manager

Table 1 Continued

Municipality ID	Population	Mean Income	Home Rule	Form of Government
Johnstown PA	20,798	32,931	Yes	mayor/council
Kalamazoo MI	74,262	45,107	Yes	council/manager
Kentwood MI	48,707	58,148	Yes	council/manager
La Quinta CA	37,467	112,188	Yes	council/manager
Lansing MI	114,297	45,671	Yes	mayor/council
Lebanon PA	25,477	42,408	Yes	council/manager
Lincoln CA	42,819	83,159	No	council/manager
Marina CA	19,718	64,711	Yes	council/manager
Marquette MI	21,355	53,479	Yes	council/manager
Midland MI	41,863	72,886	Yes	council/manager
New Castle PA	23,273	39,791	No	mayor/council
Palo Alto CA	64,403	170,096	Yes	council/manager
Pecos TX	8,780	47,504	Yes	council/manager
Peoria IL	115,007	84,400	Yes	council/manager
Plymouth PA	16,525	87,918	Yes	council/manager
Rantoul IL	12,941	49,930	Yes	mayor/council
Richmond CA	103,701	77,584	Yes	Council/manager
Rio Grande City TX	13,834	43,085	No	council/manager
Rockford IL	152,871	59,827	No	mayor/council
Springfield IL	116,250	64,345	Yes	mayor/council
Stanton TX	2,492	49,469	No	mayor/council
Tulare CA	59,278	57,155	No	council/manager
Vandalia IL	7,042	48,117	No	mayor/council
Victoria TX	62,592	67,893	Yes	council/manager
White Settlement TX	16,116	51,611	Yes	council/manager

Table 2

**Logit Analysis of Determinants of Overall Municipality
Environmentalism**

Independent Variables	B Term	S.E.	Sig
Population*	2.335	.721	.001
Home Rule Status**	1.845	.848	.029
Form of Government	1.043	.917	.255
Education Attainment	.286	.728	.695
Mean Income	-.626	.828	.450

Note: The dependent variable is coded "1" for low environmentalism and "2" for high environmentalism. * $p \leq .01$; ** $p \leq .05$

$X^2 = .000$

Pseudo $R^2 = .59$

PRE = .52

Table 3

Logit Analysis of Determinants of Municipality Recycling

Independent Variables	B Term	S.E.	Sig.
Population	18.450	4965.468	.997
Home Rule Status	-.883	1.786	.621
Form of Government	1.826	2.004	.830
Education Attainment	18.120	4607.097	.997
Mean Income	.991	1.410	.482

Note: The dependent variable is coded "0" for no recycling program and "1" if the municipality has a recycling program. No significant independent variables.

$X^2 = .068$

Pseudo $R^2 = .51$

PRE = 0

Table 4**Logit Analysis of Determinants of Municipality Green Space**

Independent Variables	B Term	S.E.	Sig.
Population*	4.578	1.853	.014
Home Rule Status*	3.567	1.630	.029
Form of Government	3.626	1.897	.056
Education Attainment	1.728	1.346	.199
Mean Income	-2.687	1.579	.089

Note: The dependent variable is coded "1" for green space acreage of 1-999 and "2" for green space acreage 1000 and above. *p ≤ .05

X²=.000

Pseudo R²=.80

PRE=.60

Table 5**Logit Analysis of Determinants of Green Building Techniques**

Independent Variables	B Term	S.E.	Sig.
Population*	.878	.650	.025
Home Rule Status*	2.136	.840	.011
Form of Government	.266	.820	.727
Education Attainment	-.457	.645	.131
Mean Income	.873	.745	.241

Note: The dependent variable is coded "0" for no green building techniques and "1" for green building techniques being utilized. *p ≤ .05

X²=.001

Pseudo R²=.49

PRE=.41

Annotated Bibliography

Allen, Texas. 2012. <http://www.cityofallen.org/index.aspx?NID=882>

The Allen, Texas official website provided me with the basic historical foundations of the city's creation necessary for the case study portion of this research. This historical knowledge allowed me to compare and contrast the backgrounds of Allen, Texas and Geneva, Illinois

Allen, Texas. 2013. <http://www.cityofallen.org/index.aspx?NID=1234>

This portion of the Allen, Texas official website afforded me information regarding the environmental groups and organizations available to the public in the city of Allen. This allowed me to further generalize that the provision of environmental groups within a city accurately predicts higher levels of environmentalism within the city.

Betsill, Michele and Harriet Bulkeley. 2006. "Cities and Multilevel Governance of Global Climate Change." *Global Governance* 12 (2): 141-159.

This article was used in the literature review portion of the research to further analyze how the multilevel governance variable has been used previously in environmental policy research. This source was necessary for the foundations of the literature review in this research.

Betsill, Michele, and Barry Rabe. 2009. "Climate Change and Multilevel Governance: The Evolving State and Local Roles." In *Toward sustainable communities: Transition and transformations in environmental policy*, 2nd ed., Ed by Daniel Mazmanian and Michael Kraft, 201-225. Cambridge, MA: MIT Press.

This book chapter is another scholarly source dedicated to multilevel governance research used in the literature review. This book chapter was simply used as another source to further provide evidence of the importance of the variable multilevel governance.

Bluestein, Frayda. 2006. "Do North Carolina local governments need home rule?." *North Carolina Law Review* 84 (6): 1983-2029.

This law review article by Bluestein was used in the early part of the literature review to denote the importance of the home rule variable in policy research. Since home rule is my most essential variable, this article further provided evidence for the inclusion of home rule as a significant variable.

Geneva, Illinois. 2012. http://www.geneva.il.us/bulletinboard/home_rule.htm

This website provided me with some specific information regarding Geneva, Illinois possible adoption of home rule in the future. This page

also produced other background information on the city used in the case study portion of this research project.

Geneva, Illinois. 2001. "History of Geneva." <http://www.geneva.il.us/history2.htm>

Similar to the Allen, Texas official website, this page provided the historical background of Geneva, Illinois necessary for the case study portion of the research. This website made it possible to compare and contrast the cities of Allen and Geneva in turn furthering the generalizability of the quantitative findings in this research.

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

This article was used in the literature review portion of this research. Jepson found that a municipality's form of government was a significant predictor of a municipality's level of environmentalism. This research supported my inclusion of the form of government variable in my logistic regression analysis.

Kahn, Matthew E. 2006. *Green cities: Urban growth and the environment*. Washington, DC: Brookings Institution.

This book, authored by Kahn, further supported the variable mean income used specifically in this research. Kahn found that the wealth of a municipality is positively correlated with the adoption of green initiatives and higher levels of environmentalism. This book supported my inclusion of the mean income variable in the logistic regression equation.

Krane, Dale, Platon Rigos and Melvin Hill Jr. 2001. *Home Rule in America: A fifty-state handbook*. Washington D.C: Congressional Quarterly Press.

This book by Krane et al., like Bluestein, provides evidence that verifies my study of a municipalities home rule status and its effect on local government policy making. Included in the literature review, this book was an additional work that was used to display the importance of home rule in research.

Krause, R. M. 2012. "An Assessment of the Impact that Participation in Local Climate Networks Has on Cities' Implementation of Climate, Energy, and Transportation Policies." *Review of Policy Research* 29 (5): 585-604.

This article was included in the literature review to show the importance of the civic participation variable. Although I did not include this variable in my analysis because of coding problems, this article shows that this

variable can be important in determining local policy making, especially environmental policy.

Lubell, Mark, Richard Feiock, and Susan Handy. 2009. "City Adoption of Environmentally Sustainable Policies in California's Central Valley." *Journal of the American Planning Association* 75 (3): 293-308.

Lubell et al found through this article that the wealth of a municipality is an important predictor of environmental policy. This served the purpose of more evidence for my inclusion of the mean income, and was used in the literature review.

Lubell, Mark, Richard Feiock, and Edgar Ramirez de la Cruz. 2009. "Local Institutions and the Politics of Urban Growth." *American Journal of Political Science* 53 (3): 649-665.

Lubell et al. found in this article that the style or form of government variable is strongly correlated with land use policy. Again, this was used in the literature review, and was used to support my inclusion of the form of government variable in my logistic regression equation.

O'Connell, Lenahan. 2008. "Exploring the Roots of Smart Growth Policy Adoption by Cities." *Social Science Quarterly* 89 (5): 1356-72.

In this article O'Connell found that a municipality's education attainment was an important factor in the development of smart growth policy. So used in my literature review, this article verified my inclusion of educational attainment in logistic regression equation.

Portney, Kent E. 2005. "Civic Engagement and Sustainable Cities in the United States." *Public Administration Review* 65 (5): 577-89.

This article was used in my literature review to further support the importance of civic participation as a policy factor. Portney's article gave stronger support to my discussion of this variable as important in further research.

Portney, Kent E. 2008. "Education and Smart Growth Policies in U.S.: A Response to Lenahan O'Connell." *Social Science Quarterly* 89 (5): 1378-83.

Another article authored by Kent Portney, focusing on education attainment, was used in my literature view. This article gave further support to my addition of educational attainment in my logit analysis.

Portney, Kent E. and Jeffrey M. Berry. 2010. "Participation and Pursuit of Sustainability in U.S. Cities." *Urban Affairs Review* 46: 119.

Portney and Berry's research was used in my literature review also to provide evidence to support the importance of the civic participation variable. Although I was unable to measure this variable for this research, it is important to understand that this variable could be an important predictor of environment policy.

Press, Daniel, and Alan Balch. 2002. "Community Environmental Policy Capacity and Effective Environmental Protection." In *New tools for environmental protection*, Ed. by Thomas Dietz and Paul Stern, 183–200. Washington, DC: National Academies Press.

This book by Press and Balch found that one particular variable that predicts accurately environment policy outcomes is the wealth and resources of a municipality. This was used in my literature review to discuss the importance of my mean income variable used in the research analysis.

Rabe, Barry. 2008. "Revisiting Regionalism and the Case of Multi-level Climate Governance." In *Intergovernmental management for the 21st century*, Ed. by Timothy Conlan and Paul Posner, 176-205. Washington, DC: Brookings Institute.

Rabe's findings here in this article indicated that multiple levels of government need to be analyzed when looking at environmental policy adoption. This article was used in the literature review to show the importance of including this variable in future research.

Richardson, Jesse J., Meghan Zimmerman and Robert Puentes. 2003. *Is home rule the answer? Clarifying the impact of Dillon's Rule on growth management*. Washington, D.C.: Brookings Institute.

Richardson et al. found that home rule is an important policy predictor in local government. I used this article in my literature review to support my study of the home rule variable.

Richardson, Jesse J. 2011. "Dillon's Rule is From Mars, Home Rule is From Venus: Local Government Autonomy and the Rules of Statutory Construction." *Publius: The Journal of Federalism* 41 (4): 662-685.

This article not only provided support for my inclusion of home rule as an important local policy predictor, but also provided me with a relatively

simple definition of home rule necessary to set the foundations of this research.

U.S. Census Bureau. 2012. "American Fact Finder."

http://factfinder2.census.gov/faces/nav/jsf/pages/community_facts.xhtml

This U.S. Census Bureau website provided me with much of the information necessary for this research project. The variables population, mean income, and education attainment were all collected through this website. So without this U.S. Census Bureau data I would not have been able to complete this project.