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# Municipal Sustainability Plans and the Inclusion of Social Equity Initiatives

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This study investigates the factors that influence municipalities' decisions to include social equity in their sustainability plans. The theoretical framework commonly used to understand why municipalities pursue sustainability initiatives holds that community priority, administrative capacity, governing institutions, and social vulnerability matter. Although there is extensive literature supporting the influence of these factors in the implementation of sustainability strategies, few studies have investigated whether they explain decision-making related to the adoption of equity-oriented sustainability plans. Using logistic regression, this article tests these four theoretical explanations to determine their applicability to equity-oriented sustainability planning. Results indicate that community priorities influence decision-making. When officials perceive that their communities prioritize social equity, they are more likely to pursue equity-focused sustainability plans. Alternatively, when economic development is prioritized, equity strategies are less likely to be included in sustainability plans. The findings suggest possible policy trade-offs among economic, environmental, and equity goals.

## Introduction

Sustainability is a global concern (Svara, Watt, and Jang 2013) and local government officials are emerging as policy leaders in the advancement of related planning initiatives (Deslatte and Stokan 2019; Geary 2011; Krause et al. 2019; Kwon, Jang, and Feiock 2014). Sustainability is defined as the ability to balance economic, environmental, and social equity goals to fulfill the needs of the present generation while ensuring that future generations can do the same (Deslatte, Feiock, and Wassel 2017; Svara, Watt, and Takai 2015; Turcu 2013). Although scholars agree that the three E's—economic development, environmental protection, and social equity—are essential for achieving a sustainable future, the social equity dimension has been largely overlooked in research on sustainability in the United States (Deslatte, Feiock, and Wassel 2017; Opp 2017). Scholars have tended to focus on environmental protection (Krause 2011; Lubell, Feiock, and Handy 2009; Saha 2009; Sharp, Daley, and Lynch 2011) or economic development (Hawkins, Kwon, and Bae 2016; Kwon, Berry, and Feiock 2009).

Significant progress has been made in advancing the scholarship on the equity dimension of sustainability, and researchers have examined why communities pursue equity-centered sustainability strategies (Deslatte, Feiock, and Wassel 2017; Deslatte and Stokan 2019; Liao, Warner, and Homsy 2019, 2020; Opp and Saunders 2013). However, there has been less research on the factors that affect the adoption of equity-focused sustainability plans, which is a critical component of creating sustainable communities.

This article makes several important contributions. First, sustainability plans provide a useful benchmark for evaluating how cities are integrating equity concerns into their sustainability efforts (Hess and McKane 2021). The analysis of factors that affect plan adoption rather than implemented policies can offer a more comprehensive understanding of the decision-making processes of communities and how city administrators mobilize to prioritize and elevate the needs of their communities. Second, an examination of the planning process allows for the identification of potential barriers and challenges that may need to be

addressed to facilitate the advancement of a community's sustainability agenda. These insights can be used by policymakers to guide their decision-making process. Third, this article evaluates whether decision-making theories can be employed to explain the adoption of equity-oriented sustainability plans as effectively as they explain the implementation of sustainability policies. Researchers can build on this research to further investigate other factors affecting a municipality's decision to incorporate equity-related strategies into their sustainability plan.

Using the International City/County Management Association's 2015 sustainability survey data, our analysis reveals that municipal governments are responsive to their community priorities in decision-making on sustainability plan adoption. Specifically, they are about 11 times more likely to adopt social equity strategies when they perceive their communities prioritize social equity. When respondents indicate their community prioritizes economic development, the odds of adopting social equity strategies in the sustainability plan are 74% lower.

We structure the rest of the article as follows. The next section presents a literature review on a) the evolution of the sustainability definition and b) equity in the context of sustainability. This is followed by the theory section. The next section presents the data and methods, followed by the findings and discussion. We conclude the article with a discussion on limitations and future research.

## Literature Review

### *The Evolution of the Sustainability Concept*

Sustainability has recently become a widely accepted planning paradigm—as evidenced by its growing presence in planning curricula, scholarly works, and local government planning agendas. However, it is not an entirely new concept. Campbell (2016) notes that planners were focusing on sustainability planning before the term was considered a modern concept. Sustainability became a goal for local governments worldwide in the 20th century (Opp 2017; Purvis, Mao, and Robinson 2019) when the International Union for Conservation of Nature (IUCN) raised concerns about the depletion of the natural resources brought about by rapid industrialization (IUCN 1970).

The IUCN's interest was in ensuring "the perpetuation of wild nature and natural resources on a worldwide basis, not only for their intrinsic cultural or scientific values but also for the long-term economic and social welfare of mankind" (IUCN 1970, 3). The topic of sustainability permeated the literature during the 1960s and 1970s although the literature was largely based on environmental planning (Purvis, Mao, and Robinson 2019). *The Silent Spring* (Carson 1962), *The Population Bomb* (Ehrlich 1968), and *A Blueprint for Survival* (Goldsmith 1973) are notable examples.

The sustainability concept has evolved since the IUCN's declaration. The interpretations of the term in contemporary literature have been mainly derived from the United Nations' World Commission Report of 1987 (Boström 2012; Kuhlman and Farrington 2010; Portney 2005; Portney and Berry 2014). Despite the nuances that distinguish sustainability from sustainable development, as Purvis, Mao, and Robinson (2019) suggest, the United Nations' sustainable development goals contributed to the popularization of the sustainability concept. The United Nations' World Commission broadly defines sustainable development as development that "meets the needs of the present without compromising the ability of future generations to meet their own needs" (United Nations 1987, 6).

Following the Brundtland Report, varying interpretations of the definition emerged. These definitions omitted or overlooked certain elements, since they were focused on either ecological, cross-generational, or economic factors (United Nations 1987; Portney 2005). However, over the decades, the sustainability idea has been redefined to be more comprehensive, encompassing other aspects that were previously neglected by the environmental planning movement (Campbell 2016).

A more recent understanding of the concept is presented by Deslatte, Feiock, and Wassel (2017, 702) who define sustainability as "the ability to meet environmental, economic, and social equity needs in a community without diminishing the ability of future generations to do likewise." Similarly, Turcu (2013, 697) describes sustainability as an amalgamation of elements such as "economic security and growth, environmental quality and integrity; social cohesion and quality of life; empowerment and governance." Another view of sustainability was from Svara, Watt, and Takai (2015, 140)

who define sustainability as "measures to protect and enhance the environment, the economy, and equity for current and future generations." What these contemporary interpretations of sustainability have in common is their emphasis on balancing the three E's—economic development, environment protection, and (social) equity goals—to meet the needs of present and future generations (Hawkins and Wang 2012; Kuhlman and Farrington 2010; Portney and Berry 2016; Saha and Paterson 2008; Turcu 2013).

The "three E's," or the three-pillar conceptualization of sustainability, bears some resemblance to the planner's triangle (Purvis, Mao, and Robinson 2019), indicating that the idea is not new. Campbell's (1996) triangular model shows that while social justice, economic growth, and environmental protection are the main urban planning goals, conflicts arise between these competing priorities. The center of the triangular model represents the ideal balance for cities striving to be green, growing, and just. Similarly, the three-pillar model highlights the trade-offs between the three goals, while aiming for the integration of the environmental, economic, and social elements (Hess and McKane 2021; Liao, Warner, and Homsy 2019, 2020; Schrock, Bassett, and Green 2015; Svara, Watt, and Takai 2015). Both the planner's triangle and the three-pillar model portray the aspirational sustainable city at the center.

The three-pillar approach remains the dominant framework of sustainability, although it has been criticized for not including other important pillars such as culture (Hawkes 2001; Soini and Birkeland 2014) or livability (Godschalk 2004). Notwithstanding the model's ubiquity, social equity has not been emphasized as much as the economic and environmental dimensions in local sustainability planning and literature in the United States (Opp 2017). The marginalization of the social equity dimension is concerning, since its inclusion in sustainability planning is essential for creating livable, viable, and resilient cities (Svara, Watt, and Takai 2015).

### *Equity in the Context of Sustainability*

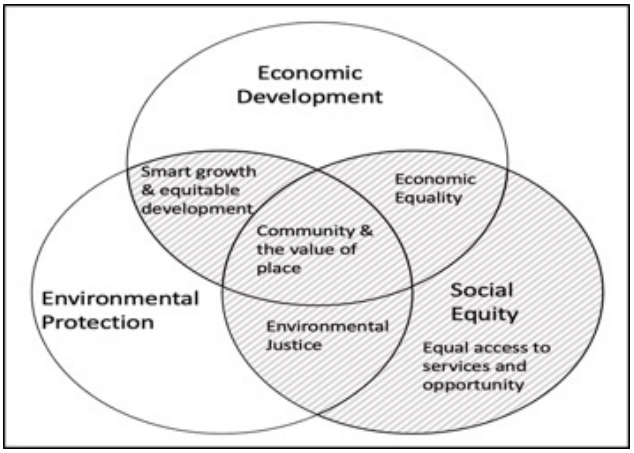
Equity has emerged as a core value in public administration following the Minnowbrook Conference of 1968. Frederickson (1971) advanced social equity as the fourth pillar of public administration, alongside economy, efficiency, and effectiveness. But as a central tenet of public administration, equity has not been adequately integrated into sustainability scholarship and practice to achieve parity with economic and environmental dimensions in the United States (Finn and McCormick 2011; Hess and McKane 2021; Liao, Warner, and Homsy 2019, 2020; Opp 2017; Saha and Paterson 2008). Finn and McCormick (2011) suggest that one of the reasons for the equity deficit is that there is no consensus on what equity means in the context of sustainability.

Several definitions of equity in the sustainability context have been proposed in the literature, and scholars refer to this dimension as social sustainability (Opp 2017; Shirazi and Keivani 2017; Weingaertner and Moberg 2014). Boström (2012) views social sustainability as comprising (a) procedural aspects – concerning democratic representation and participation and (b) substantive aspects – concerning basic needs, equal rights, access to services, and social cohesion and inclusion. Social sustainability can also be defined as the equal distribution of public services, opportunities, resources, and rights as well as safeguards against economic and environmental threats (Liao, Warner, and Homsy 2019). It can also be understood as how policy benefits and costs are distributed within a jurisdiction (Burton 2000; Svara, Watt, and Takai 2014).

Recognizing the fuzziness of the social sustainability concept, some scholars outline the key features rather than define the term. For example, McKenzie (2004) lists several life-enhancing conditions and processes that constitute social sustainability. These include access to public services, equity between generations, protection of different cultures, and widespread political participation of citizens. Bramley et al. (2009) use two themes to conceptualize social sustainability: (a) social equity which involves access to services such as schools, health centers, public transportation, and open spaces, and access to opportunities such as affordable housing and jobs; and (2) sustainability of community which involves attachment to neighborhood, plus safety, security, and participation in a collective group. Weingaertner and Moberg (2014) suggest that the main themes of social sustainability are social capital, human capital, and well-being. Based on a quantitative meta-analysis, Shirazi and Keivani (2017) organized conceptualizations into seven key principles that include social inclusion, social networking, quality of life, as well as other themes.

Notable among the various conceptualizations is the social sustainability framework developed by Opp (2017). Opp's (2017) framework offers a comprehensive approach to understanding social sustainability. By identifying several key indicators, the framework enables researchers to define and operationalize the concept. These indicators can be used to measure and assess the progress toward social sustainability in cities across the United States. Equal access and opportunity, health and environmental justice, community and the value of place, and basic human needs are the four key dimensions of Opp's (2017) framework. The approach presented by Opp (2017) appears promising because it recognizes that social sustainability encompasses not only the standalone pillar of social equity but also the areas where the three pillars intersect. By adopting this framework, we graphically present our understanding of social sustainability in Figure 1.

**Figure 1. Social Sustainability Defined**




The shaded region of Figure 1 represents equity in the sustainability context. Economic equality falls at the intersection of economic development and social equity. This includes facets such as equitable income distribution and fair employment. Environmental justice lies between environmental protection and social equity, focusing on protection from environmental hazards, and the promotion of health and well-being. At the intersection of economic development and environmental protection lies smart growth and equitable development, which is concerned with community design and planning for mixed land use that creates a clean environment and strong economy.

The standalone dimension of social equity requires equal access and opportunity, including accessibility to a range of public services (education, recreation, affordable housing, safety, etc.) and procedural fairness (widespread public participation in the decision-making process). At the center point, where the three dimensions of sustainability intersect, is the value of place. This is where community goals of wealth, health, safety, and social belonging are achieved. When these goals are met, communities garner a sense of pride in their accomplishments and work together to sustain the economic, environmental, and social balance of their communities. Taking the features of the framework together, social sustainability can be defined as a state in which all individuals have equal access to the benefits of public investments, can satisfy their basic human needs, and are protected from environmental harm (Opp 2017). Equity-focused sustainability planning, therefore, is centered on devising strategies that promote economic equality, environmental justice, equitable development, value of place, and social equity.

## Theories of Local Decision-Making in Sustainability Planning

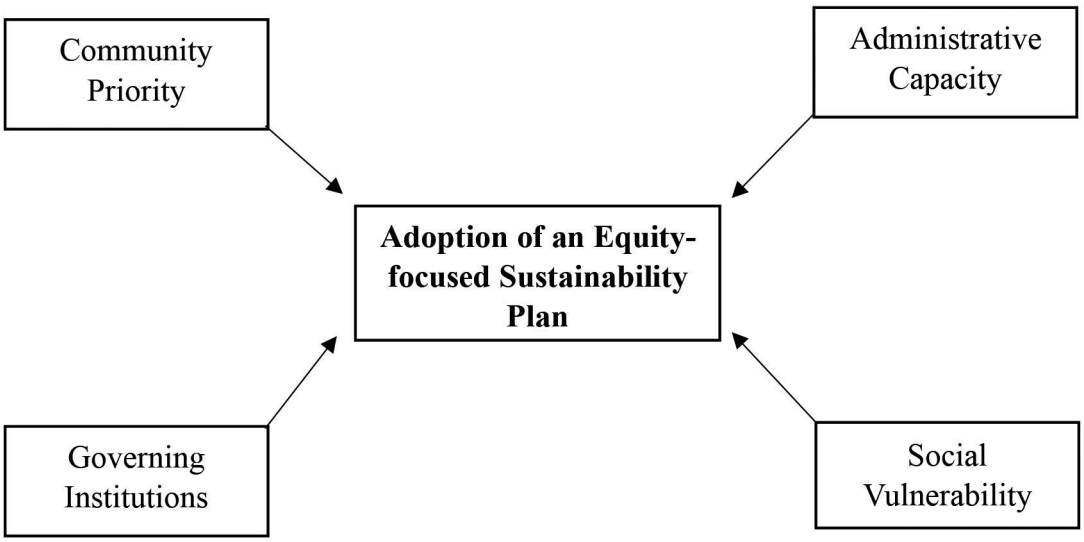
Several theoretical explanations have been advanced to understand the dynamics of local decision-making in sustainability policy adoption (Feiock and West 1993; Hawkins et al. 2016; Krause 2012; Liao, Warner, and Homsy 2020). Four key concepts stand out and relate to whether a municipality includes equity initiatives in its sustainability plans. The theoretical model is presented in Figure 2.

### *Community Priority*

A comprehensive sustainability plan provides a balanced approach to addressing local economic, environmental, and equity issues (Hawkins et al. 2016). However, municipalities do not equally pursue each dimension since government officials are torn between balancing their resources and capacity (Hawkins et al. 2016). Hawkins et al. (2016) explain that a city that is more concerned with economic prosperity may subordinate equity and environmental concerns to economic concerns. Similarly, a city that pursues economic goals, such as employment creation, would prioritize the economic dimension over environmental concerns.

Cities in which one of the dimensions has been historically undervalued may place more emphasis on that dimension in their sustainability planning (Hawkins et

**Figure 2. Factors Affecting the Adoption of an Equity-focused Sustainability Plan**




al. 2016). For example, the city of Santa Monica, California has long experienced a shortage of affordable housing (Harter 2021), and this poses a significant challenge for its residents. Accordingly, this aspect of social equity has been included in the city's sustainability plan (City of Santa Monica 2022; Connelly 2022).

Decisions to engage in the creation and implementation of sustainability with equity in mind are contingent on many factors. For instance, local officials encounter constant challenges in the decision-making process; they are constrained by limited capacity and resources but have many programs and initiatives from which to choose (Hawkins et al. 2016; Zeemering 2009). However, local officials do not work in isolation from other segments of the community since they have a duty to be responsive to the community's wants and needs. As Portney and Berry (2010, 121) note, "If a city is to develop and implement a sustainability initiative it must do so with the confidence and cooperation of its residents. It is not something that can simply be orchestrated from the top, even if some sustainability experts would wish it so." Hence, local officials are tasked with articulating the community's priorities in their municipality's sustainability plans.

Local officials act as "ambassadors of the local sustainability agenda" who are in close contact with residents, businesses, nonprofits, and other actors within their community (Zeemering 2009, 248). In addition, Zeemering (2009) notes that local officials plan, implement, and evaluate sustainability initiatives. Since sustainability takes on a localized meaning, the dimension that is more salient to a community may differ across jurisdictions (Zeemering 2009), and municipalities are more likely to pursue the dimension that local officials perceive has been designated a community priority.

The following hypotheses were derived based on the foregoing discussion concerning the sustainability trade-offs and local officials' perceptions about community priorities.

> H1a: A municipality is less likely to adopt an equity-focused sustainability plan when city officials perceive that environmental protection is a community priority.
>
> H1b: A municipality is less likely to adopt an equity-focused sustainability plan when city officials perceive that economic development is a community priority.
>
> H1c: A municipality is more likely to adopt an equity-focused sustainability plan when city officials perceive that social equity is a community priority.

***Administrative Capacity***

The administrative capacity of local governments plays a crucial role in the implementation of sustainability pol-

icies (Homsy and Warner 2015; Kwon, Tang, and Kim 2018; Wang et al. 2012). In line with Betsill's (2001) study, we define administrative capacity as a jurisdiction's ability to assign dedicated personnel to planning and implementation of the sustainability agenda. Municipalities with dedicated staff to perform sustainability-related tasks are considered to possess administrative capacity, while those without such staff are considered to lack that capacity.

Betsill (2001) suggests that municipalities should designate personnel specifically for handling sustainability-related tasks, rather than assigning such tasks to other officials who have an extensive portfolio. Hawkins et al. (2016, 2) add that "communities that have staff dedicated to sustainability issues tend to have broader and more expansive sustainability efforts in place."

Researchers have expressed statements similar to Hawkin's observation (Krause 2012; Schrock, Bassett, and Green 2015; Svara, Watt, and Takai 2015). Analyzing the sustainability policies of local governments, Svara, Watt, and Takai (2015) categorize jurisdictions based on their social equity activities. High-equity governments are those that undertake the most social equity programs, while low-equity governments are those that provide their citizens with the least social equity programs. Svara, Watt, and Takai (2015) find that high-equity governments are more likely to have staff assigned to administer their sustainability plans. Similarly, the findings of Schrock's, Bassett's, and Green's (2015) study demonstrate that government capacity is a determinant of equity planning. Having capacity "to facilitate dialogue and action about the equity dimensions of climate and sustainability planning was an important factor in making equity goals real and tangible, rather than vague and aspirational" (Schrock, Bassett, and Green 2015, 291). Based on the findings of Svara, Watt, and Takai (2015) and Schrock, Bassett, and Green (2015), we derived the following hypothesis.

> H2: A municipality is more likely to adopt an equity-focused sustainability plan when the city has dedicated staff for sustainability.

***Governing Institutions***

Local governing institutions play an integral role in sustainability policy adoption (Krause 2013; Kwon, Tang, and Kim 2018; Opp, Osgood, and Rugeley 2014; Svara, Watt, and Jang 2013). Cities vary in their form of governance, and the two most common are the mayor-council and the council-manager forms of government. In the mayor-council form, the mayor functions as the chief executive, whereas in the council-manager form, a professional city manager is the chief administrator (Krause et al. 2019).

The form of government affects decision-making because professional managers and elected officials vary in their motivations, values, and career interests (Feiock and Kim 2001). For example, council-managers are guided by professional norms, such as those that govern professional organizations (Hawkins and Feiock 2011). In contrast, elected executives are full-time politicians who are prone to credit-claiming opportunities, and thus may make decisions that cultivate political support from residents and businesses (Clingermayer and Feiock 2001).

Since elected officials are concerned with electoral support, cities with the mayor-council form of government are more likely to adopt policies that provide visible benefits to residents (Krause et al. 2019). For example, after assuming office, Mayor Nutter instituted the Mayor's Office of Sustainability which developed the *Greenworks Philadelphia* plan in 2009 (Schrock, Bassett, and Green 2015). Considering that Philadelphia has a history of racial segregation and pockets of concentrated poverty, the *Greenworks* plan focused heavily on the social equity dimension of sustainability (Schrock, Bassett, and Green 2015). Based on this, we theorize that the mayor-council form of government influences a municipality's decision to include equity in its sustainability plan. Thus, the following hypothesis is derived.

> H3: A municipality is more likely to adopt an equity-focused sustainability plan when the city has a mayor-council form of government.

***Social Vulnerability***

Equity concerns receive attention in sustainability planning when social vulnerability within a jurisdiction is most apparent (Schrock, Bassett, and Green 2015). Social vulnerability refers to demographic and socioeconomic elements that may affect a community's capacity to sustain itself under the auspice of local government policy. Many socially vulnerable communities were es-

tablished as a consequence of local government policies and decisions such as redlining.

Individuals within socially vulnerable communities are disproportionately affected by a host of factors such as poverty, low-socioeconomic status, poor housing conditions, low-level educational attainment, and inadequate public infrastructure, all of which serve as proxies for social inequality (Schrock, Bassett, and Green 2015; Zoll 2021). Schrock, Bassett, and Green (2015) suggest that income inequality, poverty rate, and the percentage of minority population are indicators of social vulnerability. Therefore, we use these key indicators to theorize the relationship between social vulnerability and the adoption of an equity-focused sustainability plan.

Presenting an argument that jurisdictions with a higher level of income inequality have greater social needs, Schrock, Bassett, and Green (2015) theorize that local actors in these jurisdictions may be more supportive of redistributive policies. The notion is that the demand for redistribution is contingent on policymakers engaging with the community to better understand their needs and, upon assessment, creating and implementing policies aimed at thwarting social vulnerability. Following the logic of Schrock, Bassett, and Green (2015), we expect that cities with higher income inequality are more likely to adopt a sustainability plan that emphasizes equity.

Also interested in understanding the impact of poverty on equity orientation, Schrock, Bassett, and Green (2015) further hypothesize that municipalities with higher levels of poverty are more likely to pursue equity-oriented policies. Supporting this view, Svara, Watt, and Takai (2015) construct a similar hypothesis, and their analysis provides evidence that governments with greater rates of poverty are more likely to adopt equity-focused sustainability plans.

Equity-minded concerns that affect racial and ethnic minorities may receive greater attention when minority populations constitute a greater share of the electorate (Schrock, Bassett, and Green 2015). Equity-mindedness refers to a policymaker's stance when they have moved from merely being culturally competent about the histories and traditions of minorities to a greater proficiency in calling attention to patterns of inequality in minority outcomes.

The literature on sustainability planning highlights that minorities experience more negative outcomes in terms of anticipating, responding, resisting, and recovering from a disaster—natural and otherwise (Díaz McConnell 2017; Stafford and Abramowitz 2017; Vanzandt et al. 2020; Zahran et al. 2008). In their response to such an emergency, some municipalities with large minority representation may be more likely to adopt equity-focused initiatives (Schrock, Bassett, and Green 2015). Svara, Watt, and Takai (2015) agree and suggest that jurisdictions with a larger share of minority populations are more likely to address equity concerns in their sustainability planning. Based on the foregoing we derived the following hypotheses:

> H4a: A municipality is more likely to adopt an equity-focused sustainability plan when there is greater income inequality.
>
> H4b: A municipality is more likely to adopt an equity-focused sustainability plan when there is a greater level of poverty.
>
> H4c: A municipality is more likely to adopt an equity-focused sustainability plan when there is a larger share minority population.

## Methodology

### *Data*

The 2015 International City/County Management Association's (ICMA) Local Government Sustainability Practices Survey is a major data source for our analysis. It is a joint survey project among ICMA, the Sustainability Communities, Small Town and Rural Planning Divisions of the American Planning Association, Binghamton University, Cornell University, and the U.S. Department of Agriculture (ICMA, 2016). The survey was sent to 8,562 local governments via direct mail, and 1,899 total responses were received, which represents a response rate of 22.2%.

Since the unit of analysis is a municipality, we chose to only include municipalities that adopted a sustainability plan and have either the council-manager or mayor-council form of government. We selected municipalities with these two forms since they are the most common. The original dataset contained two additional types of government forms—"commission" ($n$ = 4) and "0" ($n$ = 1). We excluded municipalities with these two forms from the analysis. We believe that "0" is a coding error. The adoption was determined by survey respondents' answers to Question 2, which asked whether

a local government adopted a sustainability plan (see Appendix A). Only cities that responded "Yes" were selected. This process reduced the sample size to 358. We then collected data for our control variables from the 2014 American Community Survey 5-Year Estimates.

### *Dependent Variable*

The dependent variable for this study is the existence of social equity strategies in a sustainability plan. It is measured by Question 2a in the survey which asked respondents to identify whether their sustainability plan contains goals or strategies for a list of activities including social equity (see Appendix A). Thus, the dependent variable is coded as "1" if a municipality had any goals or strategies for social equity in their sustainability plan and "0" otherwise.

### *Independent Variables*

Our first set of independent variables is the perceived community priorities. Community priority is measured using Question 1 in the survey. Respondents were asked to select which of the three sustainability dimensions (environmental protection, economic development, and social equity) were priorities in their jurisdiction. Respondents were also allowed to provide any other dimension that they considered a community priority. The survey question is listed in Appendix A. We coded the variable as "1" if a dimension was selected. Otherwise, we coded it as "0."

Staffing capacity is measured using Question 11 of the survey. The staffing capacity is a dummy variable coded "1" if the city has dedicated staffing and "0" otherwise (see Appendix A). If the respondent selected any of the options listed in the survey, they are considered to exhibit staffing capacity. We assigned a value of "1" to cities with a mayor-council form of government and "0" to cities with a council-manager form. To operationalize social vulnerability, we included three variables—the Gini index, poverty rate, and percentage of the white population in 2014. The Gini index is a measure of income inequality in a community. The value of the index ranges from zero to one. The higher the index, the greater the income inequality.

### *Control Variables*

Social equity needs and priorities may vary by demographic and socioeconomic status in different communities. We controlled for this by including total population, median household income, and percentage of the population that obtained a bachelor's degree in the analysis. All these data were collected from the 2014 American Community Survey 5-Year Estimates. Table 1 presents summary statistics for all variables.

### *Empirical Strategy*

Logistic regression models were estimated to assess the likelihood that the four explanations would influence municipalities' decisions to include social equity in their sustainability plans. To demonstrate the robustness of our results, we estimated a base model that excluded all control variables and a full model containing all the variables. Before building the full model, we checked for multicollinearity for all variables. The Variance Inflation Factors (VIF) were below 5, indicating there is no multicollinearity issue in the model.

During our analysis, we encountered several econometric challenges. To address these, we employed alternative modeling techniques. First, following previous studies, we employed a Heckman Selection Model to deal with potential sample selection bias (Heckman 1976, 1979; Kwon and Feiock 2010). Our dependent variable is only observable when survey respondents indicate the adoption of a sustainability plan. This could potentially imply a nonrandom selection process. Cities lacking social equity strategies may be less likely to have a sustainability plan, and the existence of social equity strategies could be biased without explicitly modeling the selection process. Therefore, we estimated the Heckman probit model to address this issue (see Appendix B). Since $\rho$ is not significantly different from zero, the error terms in the two models are not correlated. Hence, the application of the Heckman probit model is not justified.

The second concern relates to simultaneity between perceived social equity priority and existence of social equity strategies in the sustainability plan. We estimated a Seemingly Unrelated Bivariate Probit (SUBP) model (see Appendix C) that is a standard approach used to address simultaneity when estimating a bivariate dependent variable (see Monfardini and Radice 2008, and Torres et al. 2017). The SUBP model does not show a significant $\rho$ ($p < .05$) when testing for endogeneity, which indicates there is no correlation between unobserved factors affecting perceived social equity priority and the adoption of a social equity-focused sustainability plan. Considering its parsimony and the results of the Heckman and the SUBP models, the logit model was selected as our main model. The results of the Heckman and the SUBP models do not change the sign and significance of our independent variables, demonstrating that the logit model is stable.

**Table 1. Descriptive Statistics**

| Variable | Obs. | Mean | S.D. | Min. | Max. |
|---|---|---|---|---|---|
| Social Equity Strategies | 358 | 0.235 | 0.424 | 0 | 1 |
| Environmental Protection Priorities | 358 | 0.640 | 0.481 | 0 | 1 |
| Social Equity Priorities | 358 | 0.455 | 0.499 | 0 | 1 |
| Economic Development Priorities | 358 | 0.933 | 0.250 | 0 | 1 |
| Staffing Capacity | 299 | 0.532 | 0.500 | 0 | 1 |
| Form of Government | 358 | 0.310 | 0.463 | 0 | 1 |
| Gini Index | 358 | 0.444 | 0.054 | 0.301 | 0.606 |
| Poverty Rate | 358 | 26.435 | 6.863 | 7.300 | 51.400 |
| Percentage of White Population | 358 | 77.357 | 17.443 | 4.500 | 99.900 |
| Total Population (Log) | 358 | 10.148 | 1.401 | 7.753 | 15.149 |
| Median Household Income (Log) | 358 | 10.921 | 0.370 | 10.030 | 12.333 |
| Percentage of Bachelor's Degree | 358 | 34.279 | 17.891 | 1.900 | 87.600 |

## Findings and Discussion

Table 2 presents results from the logistic regression models. Our major predictors of an equity-focused sustainability plan as specified in Hypotheses 1-4 are community priorities, staffing capacity, form of government, and social vulnerability. The results in both the base and full models show strong evidence of social equity priorities' effects on the inclusion of social equity strategies in sustainability plans (Hypothesis 1b). Specifically, when local officials perceive the existence of social equity priorities in their community, the odds of adopting an equity-focused sustainability plan are about 11 times (14 times in base model) higher compared to when no social equity priorities are identified.

Our findings further indicate that if economic development is deemed to be a community priority by local officials, the odds of having social equity strategies included is about 74% lower (70% lower in base model). This shows moderate evidence of the trade-off effect of economic development priorities as specified in Hypothesis 1c. In addition to our focus variables, total population is also a significant predictor of social equity strategies. Doubling total population is associated with

**Table 2. Logistic Regression on Social Equity Strategies**

| | Base Model | Full Model | | |
|---|---|---|---|---|
| Environmental Protection Priorities | 0.816 | (0.535) | 0.894 | (0.549) |
| Social Equity Priorities | 14.191*** | (0.497) | 10.917*** | (0.505) |
| Economic Development Priorities | 0.303* | (0.601) | 0.263 * | (0.631) |
| Staffing Capacity | 1.082 | (0.338) | 0.957 | (0.348) |
| Form of Government | 1.248 | (0.343) | 1.468 | (0.370) |
| Gini Index | 253.141 | (2.884) | 10.507 | (4.349) |
| Poverty Rate | 0.977 | (0.025) | 0.977 | (0.027) |
| Percentage of White Population | 0.995 | (0.010) | 1.002 | (0.011) |
| Total Population (Log) | | | 1.321* | (0.137) |
| Median Household Income (Log) | | | 0.502 | (0.847) |
| Percentage of Bachelor's Degree | | | 1.007 | (0.018) |
| Constant | 0.051 | (1.879) | 11.886 | (10.145) |
| N | 299 | | 299 | |
| Log Likelihood | –130.380 | | –127.866 | |
| AIC | 278.759 | | 279.731 | |

*Note*: Odds ratios were reported. Standard errors in parentheses. ***p < 0.001; **p < 0.01; *p < 0.05.

about a 1.3 times increase in the odds of social equity strategies being included. Table 2 demonstrates these findings.

To further understand the impacts of community priorities on the adoption of social equity strategies, we constructed marginal plots based on the full model. These plots show how the probability of adoption changes as local officials perceive different community priorities (Figure 3). According to Figure 3, the probability of adoption varies across different community priorities. Holistically, when local officials perceive environmental protection or economic development priorities in their communities, the probabilities of adoption decrease by 2% and 31%, respectively. In Figure 3(a), the probability of having an equity-focused sustainability plan is barely influenced by local officials' perceptions of environmental protection priorities (given only a 2% percentage point drop). This finding is consistent with the logistic regression results, in which perceptions of environmental priorities are not a significant predictor of having an equity-focused sustainability plan. As shown in Figure 3(c), a much larger decline from 56% to 25% occurs when their perceptions change from not identifying economic development priorities to identifying them. This result also supports what we found in the logistic regression. When examining Figure 3(b), the probability changes when local officials perceive social equity priorities, which are both statistically significant and substantive. In particular, the probability of adoption increases from 16% to 68% when local officials view social equity as a priority. That is, the probability of adopting an equity-focused sustainability plan is about four times higher when local officials perceive social equity priorities.

Figure 4 illustrates the pattern of equity-focused planning across municipalities with sustainability plans. Two main insights can be drawn from the figure. First, most municipalities do not include social equity in their sustainability planning efforts (Panel D), which demonstrates the equity deficit documented in the literature (Finn and McCormick 2011; Liao, Warner, and Homsy 2019; Saha and Paterson 2008). Second, the figure provides visual clues that there is a relationship between perceived social equity priority and the inclusion of social equity strategies in sustainability plans. Most municipalities that address social equity in their plans are those in which city officials perceive social equity to be a community priority (Panel A). Only a few cities would include social equity

**Figure 3. Marginal Effects of Community Priorities on the Adoption of Social Equity Strategies**

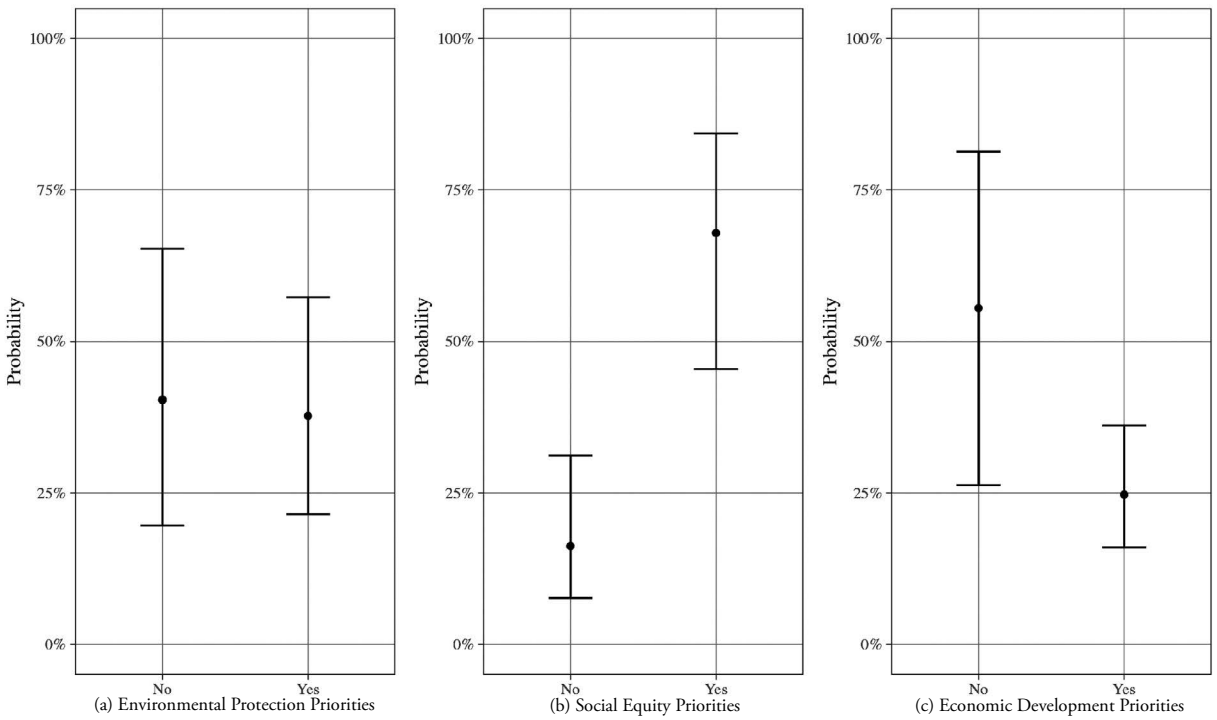
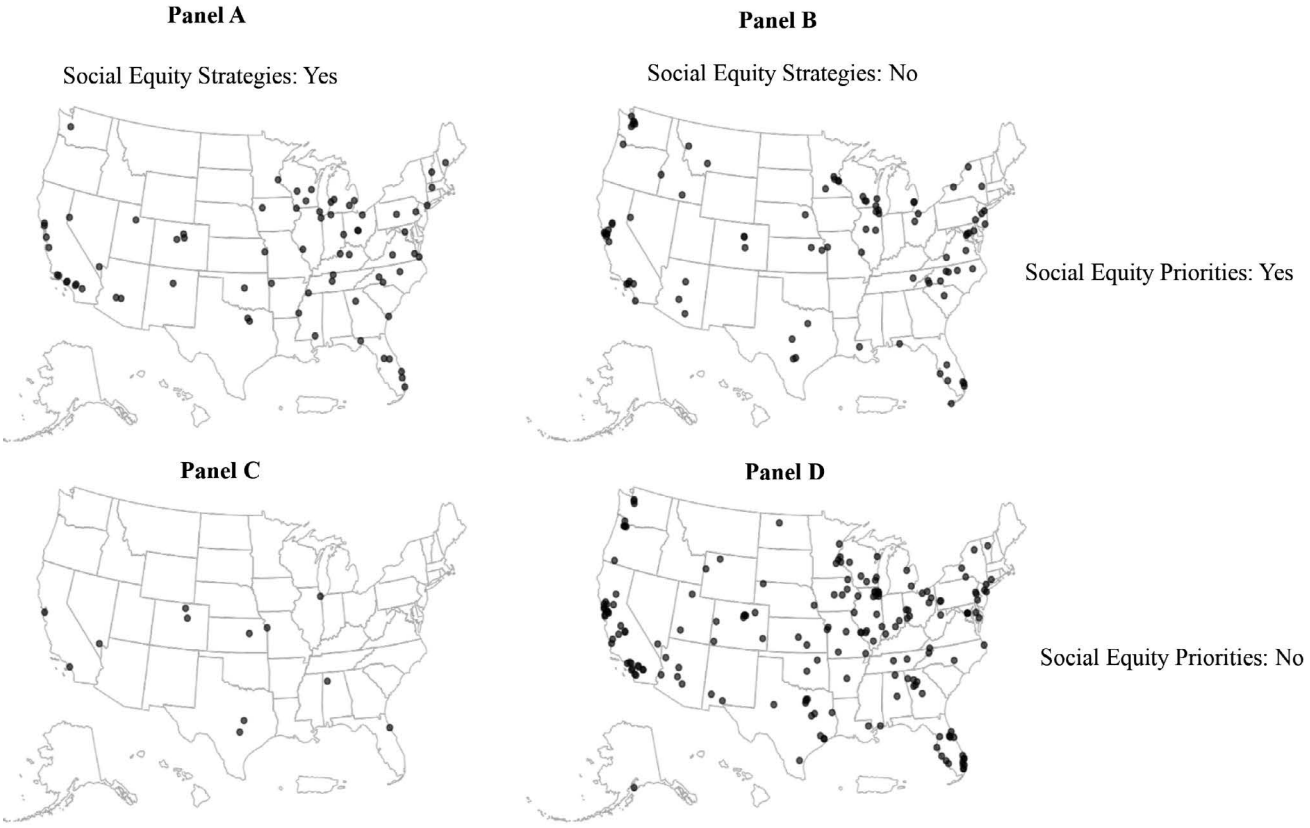


**Figure 4. Status of Social Equity Priorities and Adoption of Social Equity Strategies Among Municipalities**




goals in their plans when city officials perceive social equity as not a community priority (Panel C).

Consequently, these findings suggest that local policymakers are very responsive to community priorities. Previous studies have provided evidence of city policy adoption as a response to the demands of residents especially for new program implementation with high upfront costs, which is often the case with sustainability plans (Krause 2011; Lubell, Feiock, and Handy 2009; Saha 2009; Sharp, Daley, and Lynch 2011; Svara, Watt, and Jang 2013; Wang et al. 2012). Our study extends these findings to equity-focused sustainability plans. The adoption of an equity-focused sustainability plan is an active response to social equity priorities in the community. When local officials perceive that social equity is a community priority, they do not hesitate to employ their policy tools to address the issue.

On the other hand, community priorities are not singular and sequential, for each community may have different priorities at the same time. Our model suggests that the adoption of an equity-focused sustainability plan decreases when the community priority is economic development. Although there is consensus that sustainability is comprised of three pillars, its pursuit usually results in trade-offs (Liao, Warner, and Homsy 2019) because each dimension may not receive equal attention. The element that receives immediate attention depends on the community's priorities. For instance, cities that are preoccupied with economic goals such as job creation may prioritize the economic dimension over the environment and equity dimensions (Hawkins et al. 2016). Consequently, there is variation in the emphasis cities place on different dimensions. How to manage the trade-offs among different sustainability dimensions when responding to multiple and concurrent community priorities is key for public managers to ponder.

We also estimated models to determine how the various factors would affect local decision-making for the environmental and economic dimensions of sustainability (see Appendix D). The results reveal that the form of government and social vulnerability affect a municipality's decision to pursue economic and environmentally focused plans.

## Conclusion

Holistic sustainability planning requires strategies that protect the environment, advance the economy, and enhance equity for residents. However, local governments within the United States are slow to include equity strategies in their sustainability plans. This raises the important question of why some cities engage in equity-focused sustainability planning while others do not.

The purpose of our quantitative analysis is to provide empirical evidence about the factors that explain a municipality's decision to adopt an equity-focused sustainability plan. We tested four theoretical explanations that researchers agree are predictors of local decision-making related to the implementation of sustainability policies. These include community priority, administrative capacity, governing institutions, and social vulnerability. Using the 2015 ICMA Sustainability survey, we analyzed whether the four theories can also explain a locality's decision to adopt a sustainability plan that includes social equity strategies.

The results of the logistic regression indicate that community priority is an influential factor in motivating local governments to prioritize social equity. When local officials perceive the existence of social equity priorities in their community, the odds of including social equity strategies in their sustainability plan are about 11 times higher compared to when no social equity priorities are identified. In contrast, the results indicate that when local officials perceive that the priority within their community is economic development, they are less likely to include social equity in their plans. If economic development is deemed to be the priority by local officials, the odds of incorporating social equity strategies are about 74% lower.

The findings provide evidence of the documented trade-offs among the three sustainability dimensions (Boström 2012; Liao, Warner, and Homsy 2019). Scholars maintain that the three dimensions do not receive the same level of focus, and localities concentrate their efforts on the dimension that is considered a community priority. The results of this study lend support to that argument. The implication is that an ongoing need to mitigate the tension among the three pillars persists. We echo the conclusions made by Liao, Warner, and Homsy (2019) that social equity should not be sidelined; instead, all three sustainability dimensions should be incorporated into the local sustainability planning agenda. Local officials should strive for an integrated sustainability planning framework that seeks to achieve synchronized improvements across the economic, environmental, and equity pillars.

Another implication of the findings is that the theoretical framework that has been advanced to understand the dynamics of local decision-making in implementing sustainability policies is not well-suited to investigate the adoption of equity-oriented sustainability plans. Researchers have consistently found that the following factors explain a municipality's decision to implement sustainability strategies: (a) community priority (Hawkins et al. 2016; Svara, Watt, and Jang 2013); (b) administrative capacity (Schrock, Bassett, and Green 2015; Svara, Watt, and Takai 2015); (c) governing institutions (Hawkins and Feiock 2011; Kwon, Tang, and Kim 2018), and (d) social vulnerability (Schrock, Bassett, and Green 2015; Svara, Watt, and Takai 2015). But in our analysis, the theoretical framework only partially holds.

Of the four theories we tested, only community priority was found to be statistically significant in predicting a municipality's decision to adopt an equity-focused sustainability plan. This finding underscores the role of city administrators in incorporating the concerns of their jurisdictions into sustainability plans to ensure that these plans cater to community members' needs. The results further indicate that social vulnerability factors did not attain statistical significance. This suggests an opportunity for municipalities to refine their policies to better address the needs of vulnerable populations. While some communities may have the capacity to express their needs and concerns, others may lack that capacity. Less vocal communities may be neglected if public administrators base their decisions solely on their perceptions, without considering the unique challenges and needs of their constituents. By examining factors such as income inequality, poverty, and racial diversity, public administrators can enhance their responsiveness by ensuring that the populations most in need receive the resources necessary for their well-being and growth. Identifying distressed areas can lead to a more comprehensive understanding of their communities that can enable municipalities to adopt more inclusive sustainability plans.

Considering that the theoretical framework does not adequately explain the dynamics of decision-mak-

ing in equity-focused sustainability planning, future research should develop a framework that extends beyond the one established. The scope of our analysis is limited in that we only analyze cities that have sustainability plans, which may exclude cities pursuing equity-related strategies not framed under the sustainability agenda. Future studies should address this limitation. Researchers should also examine the impact of several other variables, not included in this analysis, that may affect a city's decisions in sustainability planning. For example, municipalities with greater financial resources may be able to engage in more sustainability strategies (Krause 2012). Acting as partners in sustainability actions, nonprofits spearhead sustainability activities related to affordable housing, transportation, and environmental justice (Wheeler 2000). Therefore, municipalities with a robust nonprofit sector that rallies local support for equity-focused policies can influence local sustainability planning. Consequently, future studies should assess the impact of the nonprofit sector. Despite the limitations identified, the study's findings offer key insights into the dynamics of municipalities' adoption of equity-focused sustainability plans.

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## Appendix A. Survey Instruments

| Variable | Question |
|---|---|
| Social Equity Strategies | • 2. Has your jurisdiction adopted a sustainability plan? ☐ Yes ☐ No<br>• 2a. If yes, please indicate if the plan contains goals or strategies for any of the following. (Check all that apply.) a. Social Equity (Coding 1 if the city adopted a sustainability plan and included social equity strategies in the plan) |
| Environmental Protection Priorities<br>Social Equity Priorities<br>Economic Development Priorities | • 1. Indicate which of the following are a priority in your jurisdiction. (Check all that apply.)<br>☐ a. Environmental protection<br>☐ b. Social equity<br>☐ c. Economic development<br>☐ d. Other (Coded 1 if the city has any one of the priorities) |
| Staffing Capacity | • 11. Which scenario best describes your jurisdiction's staffing on sustainability?<br>☐ a. Dedicated staffing in chief elected/appointed official's office<br>☐ b. Dedicated staffing across multiple departments<br>☐ c. No dedicated staffing, but goals recognized across departments<br>☐ d. Dedicated staffing within a single department<br>☐ e. No dedicated staffing, but a task force / committee<br>☐ f. No staffing, goal recognition, or task force / committee<br>• (Coded 1 if the city has any type of dedicated staffing on sustainability) |

## Appendix B: Heckman Selection Model

| | **Selection Model (DV: Social Equity Priorities)** | |
|---|---|---|
| Social Vulnerability Index Score | –0.058 | (0.204) |
| Environmental Protection Priorities | 0.198 | (0.112) |
| Social Equity Priorities | 0.210 | (0.132) |
| Economic Development Priorities | 0.077 | (0.216) |
| Dedicated Staffing | 0.994*** | (0.106) |
| Form of Government | 0.197 | (0.103) |
| Percentage of White Population | –0.001 | (0.003) |
| Total Population (Log) | 0.156*** | (0.042) |
| Median Household Income (Log) | 0.170 | (0.207) |
| Percentage of Bachelor's Degree | 0.006 | (0.005) |
| Constant | –4.536* | (2.084) |
| | **Outcome Model (DV: Social Equity Strategies)** | |
| Environmental Protection Priorities | –0.040 | (0.315) |
| Social Equity Priorities | 1.353*** | (0.281) |
| Economic Development Priorities | –0.829* | (0.346) |
| Form of Government | 0.243 | (0.245) |

| | | |
|---|---|---|
| Gini Index | 1.338 | (3.036) |
| Poverty Rate | –0.013 | (0.013) |
| Percentage of White Population | –0.000 | (0.005) |
| Total Population (Log) | 0.161 | (0.087) |
| Median Household Income (Log) | –0.440 | (0.620) |
| Percentage of Bachelor's Degree | 0.004 | (0.013) |
| Constant | 2.024 | (7.402) |
| N (uncensored) | 972 (299) | |
| Log Likelihood | –622.492 | |
| rho | 0.006 | (0.349) |

*Note:* Standard errors in parentheses. ***p < 0.001; **p < 0.01; *p < 0.05.

## Appendix C: Seemingly Unrelated Bivariate Probit Model

| | **DV: Social Equity Priorities** | |
|---|---|---|
| Social Vulnerability Index Score | 0.381 | (0.374) |
| Form of Government | 0.248 | (0.189) |
| Gini Index | –3.795 | (2.120) |
| Poverty Rate | –0.022 | (0.013) |
| Percentage of White Population | –0.001 | (0.006) |
| Total Population (Log) | 0.410*** | (0.072) |
| Median Household Income (Log) | –1.005* | (0.415) |
| Percentage of Bachelor's Degree | 0.028** | (0.010) |
| Constant | 7.798 | (4.858) |
| | **DV: Social Equity Strategies** | |
| Environmental Protection Priorities | –0.044 | (0.272) |
| Social Equity Priorities | 2.096** | (0.734) |
| Economic Development Priorities | –0.746* | (0.369) |
| Staffing Capacity | –0.008 | (0.187) |
| Form of Government | 0.173 | (0.225) |
| Gini Index | 2.149 | (2.478) |
| Poverty Rate | –0.007 | (0.016) |
| Percentage of White Population | 0.001 | (0.006) |
| Total Population (Log) | 0.041 | (0.152) |
| Median Household Income (Log) | –0.122 | (0.602) |
| Percentage of Bachelor's Degree | –0.003 | (0.013) |
| Constant | –0.890 | (6.543) |
| N | 299 | |
| Log Likelihood | –299.239 | |
| rho | –0.502 | (0.534) |

*Note 1:* Standard errors in parentheses. ***p < 0.001; **p < 0.01; *p < 0.05.
*Note 2:* Social Equity Priorities was instrumented using the CDC/ATSDR Social Vulnerability Index (SVI).

## Appendix D: Logistic Regressions on Environmental Protection and Economic Development Strategies

| | Environmental Protection Strategies Model | | Economic Development Strategies Model | |
|---|---|---|---|---|
| Environmental Protection Priorities | 2.115 | (0.410) | 0.730 | (0.376) |
| Social Equity Priorities | 1.535 | (0.379) | 1.532 | (0.368) |
| Economic Development Priorities | 0.730 | (0.546) | 1.858 | (0.526) |
| Staffing Capacity | 1.095 | (0.315) | 1.367 | (0.296) |
| Form of Government | 0.373** | (0.372) | 3.038** | (0.358) |
| Gini Index | 1680.327 | (4.037) | 0.234 | (3.492) |
| Poverty Rate | 1.009 | (0.025) | 0.947* | (0.023) |
| Percentage of White Population | 0.980* | (0.009) | 1.010 | (0.009) |
| Total Population (Log) | 1.585*** | (0.131) | 1.168 | (0.126) |
| Median Household Income (Log) | 2.204 | (0.744) | 0.914 | (0.698) |
| Percentage of Bachelor's Degree | 1.012 | (0.017) | 0.967* | (0.016) |
| Constant | 0.000 | (8.923) | 5.001 | (8.195) |
| N | 299 | | 299 | |
| Log Likelihood | –143.786 | | –162.416 | |
| AIC | 311.572 | | 348.832 | |

*Note:* Odds ratios were reported. Standard errors in parentheses. ***p < 0.001; **p < 0.01; *p < 0.05.

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