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Selective vs. Collective Outcomes of Collaborative Governance: The Impacts of Federal Stimulus Programs on Local and Regional Governance Outcomes

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Abstract: A number of studies have demonstrated that local government's self-governing mechanisms can bring about positive collective outcomes for an entire region. However, less attention has been paid to different levels of collective outcomes (e.g., individual local governments vs. entire regions). Comparing such selective and collective outcomes in interlocal collaborations, this study attempts to explore which specific collaborative self-governing mechanisms can better work for which respective outcomes. Applying network approaches with time-series cross-sectional data, this study investigates how each local government's network position and the network structure as a whole influence the impact of Energy Efficiency and Conservation Block Grants on job creation in terms of the regional green economy. Empirical results demonstrate the need for separating selective and collective outcomes in developing theories of regional governance. Additionally, the results provide practitioners with advice on how to manage interlocal relationships in order to maximize collective outcomes at different levels

Keywords: selective and collective outcomes; collaborative governance; network analysis; self-governing mechanisms

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Citation: Kwak, C.-G.; Ki, N.; Hwang, S.-J. Selective vs. Collective Outcomes of Collaborative Governance: The Impacts of Federal Stimulus Programs on Local and Regional Governance Outcomes. *Sustainability* **2021**, *13*, 11941. https://doi.org/10.3390/su132111941

Academic Editor: Carmen Nadia Ciocoiu

Received: 20 September 2021
Accepted: 23 October 2021
Published: 28 October 2021

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1. Introduction

How can collective outcomes be desirable for regional governance? In fiscal federalism, collective action among fragmented local governments has emerged as an alternative mechanism to address multi-jurisdictional problems effectively [1–3]. In an urban context of service provision and delivery, collaborative mechanisms through co-production and joint delivery are supposed to enable local governments to avoid duplication in similar services, prevent tax increase associated with the services and, consequently, to achieve economies of scale [2,4–6].

While research in urban politics provides an evidentiary snapshot of the individual efficacy of collaborative mechanisms at the local level [7], less attention has been paid to looking at the collective outcomes of such a network as a whole. To put it simply, does the bigger pie make everyone happier? Although this question has been asked mostly in the normative realm of social science, some scholars have extended the debate using counterevidence for the question [8,9]. What if collective action does not bring about overall well-being in the region, even if individual local governments outperform through collaboration? What if, on the contrary, the selective benefits of collaboration are not satisfactory even if the desirable collective outcomes are achieved? How different are the moderating mechanisms of collaborative governance in terms of the selective and collective outcomes of interlocal collaborations, respectively?

To answer these questions, we must inevitably extend our focus to the evolutionary relationships between governance mechanisms and governance outcomes at different levels. Under stable and predictable circumstances, it is highly probable that self-organizing

mechanisms are as durable and sustainable as Ostrom's cases of "small-scale organizations" [10,11]. Indeed, we observe that many interlocal agreements in regional governance are signed as long-term agreements over five to ten years. The problem, however, is that circumstances around urban collective action are becoming complicated and ever-changing. In responding to the different dimensions of externalities, are collective outcomes still desirable to retain regional governance? What if collective outcomes are no longer satisfactory in existing regional collaboration? Are the rules for distributing collective benefits still agreeable for individual local governments?

In this light, the Energy Efficiency and Conservation Block Grant (EECBG) provides an opportunity for quasi-experimental design to control the impacts of exogenous events on the evolution of self-organizing mechanisms and governance outcomes in the local and regional green economy. In the following section, this paper provides theoretical frameworks for institutional collective action (ICA) dilemmas as controlled costs to maximize selective benefits via self-organizing mechanisms. Applying the network approach, the following section measures collaborative costs in accordance with structural patterns in collaboration. Analyzing time-series cross-sectional (TSCS) data on job creation in the green economy at the local and regional (i.e., metropolitan statistical area, MSA) level, this study provides empirical evidence and theoretical implications for the moderating effects of governance changes on selective and collective outcomes.

2. Theoretical Framework

2.1. Selective and Collective Outcomes of Evolutionary Self-Organizing Mechanisms

In the sense that collective action aims to resolve common problems which usually lie beyond the capacity of local jurisdiction, the selective and collective outcomes of collaborative governance are inherently reliant on the control mechanisms of its externalities [7]. On the one hand, anticipated selective outcomes from collaboration at the local level depend on individual relationships with credible and reliable partners. Thus, finding and building reliable partnerships is crucial in order to deploy resources and information efficiently as well as to motivate committed efforts addressing externalities embedded in the partnership [12,13]. At the regional level, on the other hand, anticipated collective outcomes from collaboration are highly associated with a set of institutional rules concerning regional governance, as regional structures are constantly shaped and reproduced by social institutions during societal development [14]. Such a set of institutional rules can enhance or impede the effectiveness of the self-organizing mechanism as a whole [8,15]. Reflecting regional patterns of institutional arrangements such as population size, income level, racial diversity, and other socio-economic properties of the region, the institutional set of rules shapes the structural patterns of self-organizing mechanisms in repeated games [2,10,16].

With respect to the control mechanisms of externalities, the institutional collective action (ICA) framework provides insightful cues for how to manage collaboration effectively [16]. Focusing on the rule-making mechanisms of collaborative governance, the framework explains how local governments overcome the institutional barriers in order to reach collectively preferred rules of collaboration [2,16,17]. The set of institutional rules let local governments anticipate the collective outcomes of collaboration. More importantly, however, even though there are shared rules governing collaboration, the level of individual commitment to the rules is not coherent among local governments, generating dilemma situations when taking collective action [2,16]. In order to mitigate dilemmas when coordinating, enforcing, monitoring, and detecting risks at the individual level, local governments choose the most plausible collaborative mechanism that enables them to keep risks low in the exchange of information and resources [2]. In this light, the level of the dilemma influences the selective outcomes from collaborative governance.

More importantly, the collaborative mechanism is a temporal resolution for existing common problems, although in many cases of regional governance the mechanism seems durable and stable over time [10]. More precisely, the self-organizing mechanism is a resolution conditional on the existing institutional set of rules. If the rules are no longer

suitable for addressing emerging dilemmas then the rules change, either drastically or incrementally [18–20]. Meanwhile, in order to maximize selective benefits, individual choices in collaboration evolve to adapt to the rules or coevolve to influence the set of rules [21].

As the external environments in regional governance are not fully controllable, following adaptive changes of collaboration develops the problem of externalities. Environmental changes, which are exogenously added to existing externalities from relational risks, detract from the efficacy of endogenously developed collaborative mechanisms [22]. When the emerging risks from environments overwhelm the dilemmatic situation in the collaboration, actors resume the bargaining process bearing additional relational risks. At the same time, even when the environmental externalities positively overwhelm the dilemma, exogenously driven network changes emerge to address a new heterogeneous set of institutional arrangements [21].

While the evolution of collaborative mechanisms is hypothesized to influence governance outcomes, identifying the critical point of change is challenging. In this light, the financial crisis that began in 2007 and the responding federal stimulus programs in 2009 provide an interesting avenue to investigate the impacts of environmental change on the evolution of collaborative governance at the local and regional level. This global crisis shifted the ecology of regional governance into a new phase of resource scarcity, whereas the American Recovery and Reinvestment Act (ARRA) of 2009 generated an instant and intensive rally point against that phase. In this study of green economic collaboration, the EECBG program under the ARRA is hypothesized to be a designated treatment in order to investigate the impacts of environmental changes on change in collaborative mechanisms and in the collective and selective outcomes of regional governance.

2.2. Managing Interlocal Collaboration Effectively

In matching the level of a dilemma with specific types of self-organizing mechanisms, the network approach and analytic techniques contribute to measuring structural patterns of collaboration. Presented by Berardo and Scholz [13], the risk hypothesis considers relational risk as a barrier to forming an efficient network. In partner selection, individual actors assess the risks of forming a new relationship with potential partners, through which specific structural patterns emerge as a mechanism to guard against risks imposed on individual actors [13]. On the one hand, the coordinative structures are loosely coupled in order to enhance the efficiency of information exchange [22,23], which is a mechanism to mitigate low-level relational risks. This type of network features a bridging structure of weak ties in which a few centralized actors coordinate information exchange efficiently with peripheral actors. As ties in the network are managed efficiently by the core actors, the costs of maintaining relationships can be kept relatively low. In terms of dilemmas in the ICA framework, coordination dilemmas primarily involve a lack of information and a need to access information in a reliable and stable manner [21].

On the other hand, cooperative structures are tightly clustered in order to secure the credible commitment of partners [21,22], which is a mechanism to address high-level relational risks. This type of network features a bonding structure of strong ties, in which most actors are connected with each other in order to secure reliable partnerships effectively. As ties form a dense and reciprocal structure, the costs of maintaining the relationships are relatively high. Cooperation dilemmas in the ICA framework come with potential risk of defection and the need to secure reliable monitoring mechanisms.

At the regional level the mechanisms are more latent, and are influential on rulemaking for collaboration. For a given environment such as organizational culture, the institutional set of rules is embedded in regional governance as the accumulated results of repeated interactions under specific institutional arrangements [11], which guides the way for collaboration [24]. As extended from the risk hypothesis at the individual level, the level of relational risks at the regional level imposes additional costs to the network as a whole. For instance, in a high-risk society such as the United States after the 9/11 terror attacks,

widespread distrust and anxiety throughout the society made the exchange of information highly costly. In this light, cooperative structures emerge in regional governance to reflect highly prevalent risks to collaboration in the region which impose high transaction costs on any new actor in the collaboration. At the same time, coordination structures are developed through a low level of relational risk throughout the region, which guides new actors in the collaboration and keeps transaction costs low.

In summary, the extent to which the collaboration contributes to achieving the desired outcomes depends on how the selective and collective outcomes are maximized through the self-organizing mechanisms, that is, the way in which individual actors effectively manage ICA dilemmas at the selective and collective levels. Furthermore, as additional costs are incurred at the regional level, in maximizing the selective benefits, local governments are assumed to be opportunistic in imposing collective costs on others through network structures.

3. Data and Measurement

3.1. Unit of Analysis

This study tests the hypothesized causal relationship between the evolution of governance mechanisms and their efficacy with regard to governance outcomes for green economic development in the metropolitan areas of Florida. To do so, this study employs two different levels as units of analysis: local government and region. In this study, the local government as a unit on the individual level refers to a city and county government as authorized to exercise political sovereignty over its jurisdiction and to create various types of collaborative mechanisms with other local governmental units. In addition, this study identifies the metropolitan statistical areas (MSAs) as a unit at the regional level, which follows the definition given by the Office of Management and Budget (OMB). Although the MSA is not a legal entity in federalism [25], the definition (i.e., a geographical region with a relatively high population density) provides a statistically consistent boundary of substantive use for regional governance.

Among 365 cities and counties in 19 MSAs in Florida, this study refines the sampling measurement to build a reliable model. As 68% of federal subsidies through the EECBG are formula-based (the formula of the EECBG being based on the population size of the local government, with every city with a population of 35,000 or more and every county with a population of 200,000 or more able to apply for this formula-based EECBG), non-eligible local governments are excluded from the direct impacts of the EECBG on the outcomes of green economic development. As a result, 111 local governments were selected as sample, among which 91 local governments (82%) were beneficiaries of the program in 2009 and 20 local governments (18.02%) did not apply for the program even though they were eligible.

At the regional level, the refined sample size at the local level affects the boundaries of MSAs. After excluding the non-treatable local governments, 16 MSAs in Florida remained in the sample population at the regional level. In addition, it should be noted that the boundaries of MSAs as defined in this study shrink to the size of aggregation of the EECBG-eligible local governments.

3.2. Green Job Creation as an Outcome of Green Economic Collaboration

Employing the definition of the green economy given by the US Bureau of Labor Statistics (BLS) (a job-based definition identified as Green Goods and Services (GGS) jobs associated with environmental benefits, BLS 2010), two elements of GGS jobs can be identified: product-based and process-based. Product-based jobs are those in which goods or services with environmental benefits are produced, while process-based jobs are jobs in which workers are involved in making products more environmentally friendly., This study measures green job creation as the outcome of green economic development. The number of full-time employees (FTE) in the green industry was collected at the establishment level and aggregated for the local and MSA levels. In order to identify a green job, we employed

the six-digit NAICS industry classification codes as defined by the BLS. The data were collected from the National Establishment Time-Series Database 2007–2011.

Table 1 indicates that an annual average of 11,135 green industry jobs were created in 111 local governments between 2007 and 2011, whereas on average 76,551 green jobs were generated annually at the regional level over this timeframe. In addition, Figure 1 shows the waves of green job creation in Florida metropolitan areas between 2007 and 2011. At the local and regional levels the mean value of green jobs peaked in 2009, and was followed by a wave between 2009 and 2011.

Table 1. Descriptive Statistics.

	Obs.	Mean	S.D.	Min	Max
<Local Level>					
Green Jobs (thousands)	111	11.13	17.76	0	100.49
Degree Centrality	111	0.23	0.32	0	1
Clustering Coefficient	111	0.23	0.40	0	1
EECBG (million $)	111	0.55	2.36	0	23.35
Population (logged)	111	11.60	1.06	9.52	14.76
% white	111	76.57	16.07	12.93	99.53
% bachelor or higher	111	18.18	8.75	6.68	64.4
Median-HH-income (cat)	111	4.22	0.50	3	6
<MSA>					
Green Jobs (thousands)	16	76.55	109.56	5.68	471.37
Centralization	16	0.21	0.23	0	0.667
Transitivity	16	0.20	0.33	0	0.923
EECBG (million $)	16	3.84	13.16	0	94.56
Population (logged)	16	13.56	1.18	10.51	16.01
% white	16	77.15	9.25	53.55	93.06
% bachelor or higher	16	18.00	6.70	9.48	37.15
Median-HH-income (cat)	16	3.74	1.16	1	6

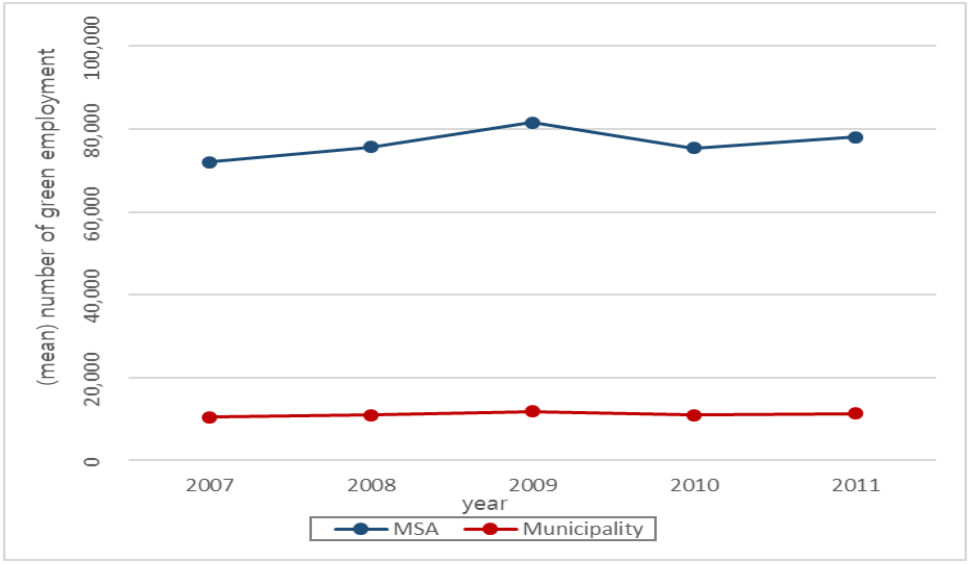


Figure 1. Trends of Green Job Creation in Florida Metropolitan Areas (2007–2011).

3.3. Structural Patterns of Collaboration

Among diverse types of collaboration, this study focuses on the formal network among local governments through the interlocal agreement, which provides the validity of time-series data for collaboration. This study collects the data for formal networks from newspaper articles in the studied timeframe, including legal notices of interlocal agreements under the Florida Interlocal Cooperation Act of 1969 (This act of local collaboration

mandates that every single formal agreement between local governments be published in a newspaper). Using a systematic review process of semantic network analysis, we determined that 59 local governments (53.15%) participated in 106 interlocal agreements in 2007, and 79 local governments' (71.17%) participated in 125 agreements in 2011. In our semantic network analysis, every word relevant to the concept of the green economy was selected using ConText version 1.0 software. Through Carley's eight steps for building key concept lists, we finalized the network data on green economy interlocal agreements using AutoMap software. At the regional level, Table 1 shows a slight increase in the network density from 0.017 in 2007 to 0.020 in 2011, whereas Figure 2 visually depicts the overall network shapes between 2007 and 2011.

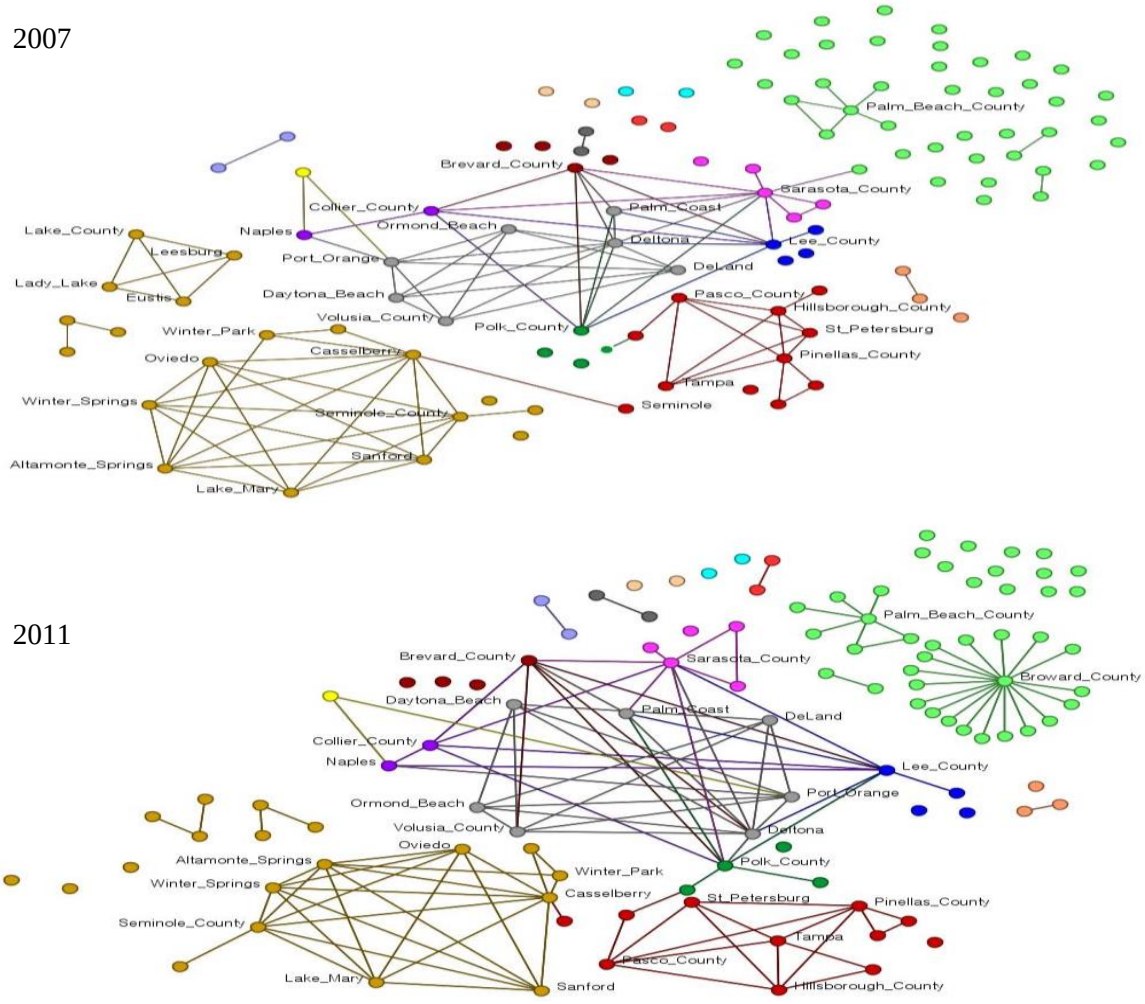


Figure 2. Network Changes Over Time. Note: colors in MSA: • Cape Coral-Fort Myers • Deltona-Daytona Beach-Ormond Beach • Gainesville • Jacksonville • Ocala • Lakeland-Winter Haven • Miami-Fort Lauderdale-West Palm Beach • Panama City • Orlando-Kissimmee • Naples-Immokalee-Marco Island • North Port-Bradenton-Sarasota • Tampa-St. Petersburg-Clearwater • Palm Bay-Melbourne-Titusville • Pensacola-Ferry-Pass-Brent • Port St. Lucie • Tallahassee.

As shown in Figure 2 when compared to 2007 the increasing number of interlocal agreements for green economic development in 2011 shaped different patterns among municipalities and counties in 16 Florida metropolitan areas. For instance, between 2007 and 2011 in the Miami-Fort Lauderdale-West Palm Beach area, Broward County had become a new center for green economic collaboration in the region, whereas even the existing agreements had decreased in the Orlando-Kissimmee area.

This study applies the risk hypothesis [13] to measure the structural patterns of metropolitan green economic collaboration. As an interlocal agreement is reciprocal by

nature, this study assumes that the formal network in this study is undirected. At the local level, the network metrics of the degree of popularity (where the (in-)degree popularity effect is defined as $s_{i1}^{net}(x) = \sum_j x_{ij} x_{+j} = \sum_j x_{ij} \sum_h x_{hj}$) and clustering coefficients (where the clustering coefficient is interchangeable with transitivity and is defined as $C_i = \frac{\lambda_G(v)}{\tau_G(v)}$, where $\lambda_G(v)$ is the number of triangles and $\tau_G(v)$ is the number of triples on the graph) were measured as indicative of the individual network's position in low-risk coordination structures and high-risk cooperation structures, whereas centralization and transitivity were measured as institutional sets of rules for low and high levels of ICA dilemma. As a result, Table 1 shows that the degree of popularity increased from 0.017 in 2007 to 0.020 in 2011 at the local level, whereas the clustering coefficient decreased from 0.206 in 2007 to 0.180 in 2011. In addition, centralization at regional level increased from 0.075 in 2007 to 0.145 in 2011, while transitivity decreased from 0.681 in 2007 to 0.482 in 2011.

3.4. EECBG as an Environmental Impact

In this study, the federal EECBG block grant program in 2009 was hypothesized to have an environmental impact on regional governance mechanisms and governance outcomes in green economic development. This study collected the amount of EECBG awarded to local governments from the information archive of the ARRA website. The original data were filtered by fund category and target local government and aggregated by local and MSA level. Table 1 shows that an average of USD 2.8 million was awarded to local governments for green economic development, whereas an average USD 19.18 million was used for green economic development at the regional level.

3.5. Model Specifications

This study constructs the TSCS model to empirically investigate the impacts of governance changes on governance outcomes at the selective and collective levels. The model is defined as

$$y_{it} = \alpha_i + \beta x_{it} + u_t \quad (1)$$

where y_{it} represents the governance outcomes of actor i in metropolitan green economic development at time t, α_i is average green job creation for actor i, β is the time-varying effects of variable x, and u_t is the time-varying error.

According to the diagnostic test results of the Breusch and Pagan Lagrangian multiplier test for random effects models and the Hausman specification test, this study estimated the analytic results using the fixed-effects model. In addition, to address the reported heteroskedasticity problems, this study used the robust option for fixed-effect models.

4. Analytic Results

4.1. Selective Outcomes of Metropolitan Green Economic Governance

The results in Table 2 demonstrate a significant impact of structural changes in collaborative mechanisms on governance outcomes, although the structural patterns influence the selective outcomes in different ways. At the local level, the selective outcomes through the interlocal agreement increase the number of green jobs by 115 over time, as the local government's position in the collaboration becomes 0.1 of a level closer to a centralized position. That is, if the local government becomes more centralized in the collaboration, it gains better selective benefits in addressing low-risk coordination dilemmas. However, as a local government creates 0.1 of a level of more closed relationships in collaboration, the selective outcomes decrease by 27 fewer green jobs over time. In other words, if the local government changes network partnerships into more tightly clustered partnerships in order to address high-risk cooperative dilemmas, it gains fewer selective benefits through the collaboration. Figure 3 shows how the changes in the relative structural positions in the collaboration affect the marginal effects of selective outcomes over time.

Table 2. Analytic Results.

Number of Green Jobs Created	Local Level	MSA Level
Network Structure		
Degree Centrality/Centralization	1.15 (0.60) **	−75.59 (14.07) ***
Clustering Coefficient/Transitivity	−0.27 (0.10) ***	−237.32 (23.92) ***
Environmental Impact		
EECBG	0.37 (0.03) ***	0.22 (0.09) **
Interaction Terms		
EECBG X Centrality/Centralization	−0.31 (0.04) ***	0.42 (0.41)
EECBG X Clustering Coeff./Transitivity	0.25 (0.09) ***	0.13 (0.14)
Control Variables		
Population (logged)	0.79 (0.26) ***	−1.32 (9.30)
% white	−0.02 (0.01) **	0.04 (0.08)
% bachelor or higher	0.04 (0.01) ***	0.23 (0.12) **
Median-HH-income (cat)	0.15 (0.20)	0.47 (0.60)
Constant	1.65 (3.46)	146.61 (121.65)
Obs. (Groups)	550 (110)	80 (16)
Overall R-sqt (within/between)	0.50	0.07
F-statistics (prob > F)	32.51 (0.00)	4851.67 (0.00)
Rho	0.99	0.99

** $p < 0.05$, *** $p < 0.01$.

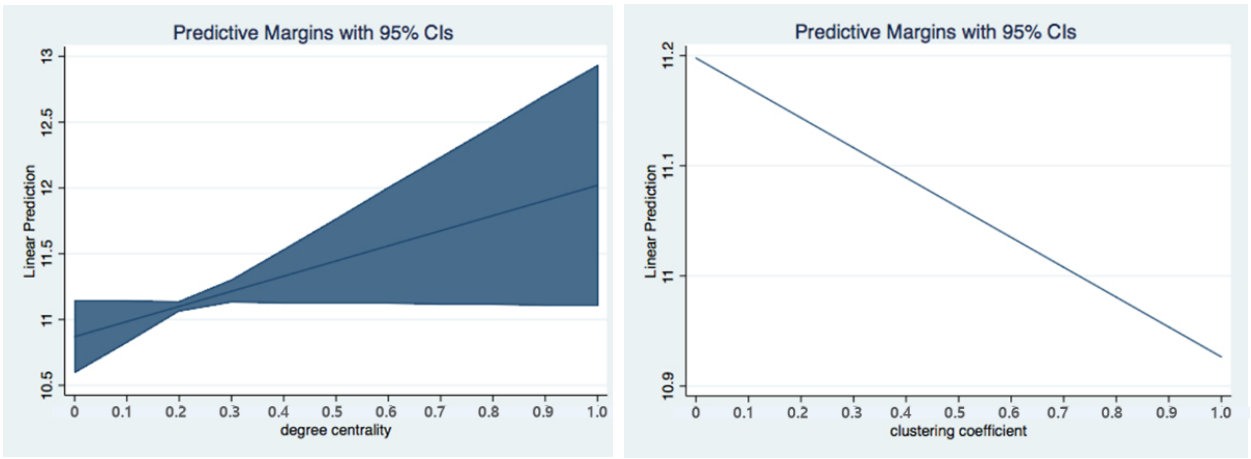


Figure 3. Marginal Effects at Local Level.

In addition, Table 2 indicates that in terms of environmental impact the EECBG generates significant positive outcomes in green economic development. As a local government is awarded, e.g., USD 1 million, it directly creates 370 more green jobs in the local government. At the same time, the interaction terms between the EECBG effects and the structural patterns of collaboration generate slight but significant moderating effects on the selective outcomes. As a local government gets 0.1 of a level closer to a centralized position as well as being awarded USD 1 million in federal funds, this reduces the number of FTE green jobs created by 31 over time. In the same way, as a local government generates 0.1 of a level of a more closed network with USD 1 million in EECBG funds, this increases the number of FTE green jobs created by 25 over time.

4.2. Collective Outcomes of Metropolitan Green Economic Governance

Table 2 shows the strong negative impacts of governance structures on collective outcomes over time. At the regional level, as overall collaborative structures shift by 0.1 of a level closer to the centralized structures, this exacerbates regional outcomes over time by

decreasing by 7559 the number of green jobs which otherwise would have been created. That is, if the existing institutional set of rules proves inefficient in addressing emerging low-risk ICA dilemmas, institutional change in the rules of collaboration generates transaction costs in achieving the desired governance outcomes. At the same time, as overall collaborative structures move 0.1 of a level closer to the tightly clustered structures, this decreases the regional outcome over time by 23,732 green jobs which otherwise would have been created. That is, the structural changes responding to emerging high-risk ICA dilemmas make regional collaboration less efficient in achieving governance outcomes. At the regional level, these results imply that any change at the institutional level results in increased transaction costs for regional collaboration (Figure 4).

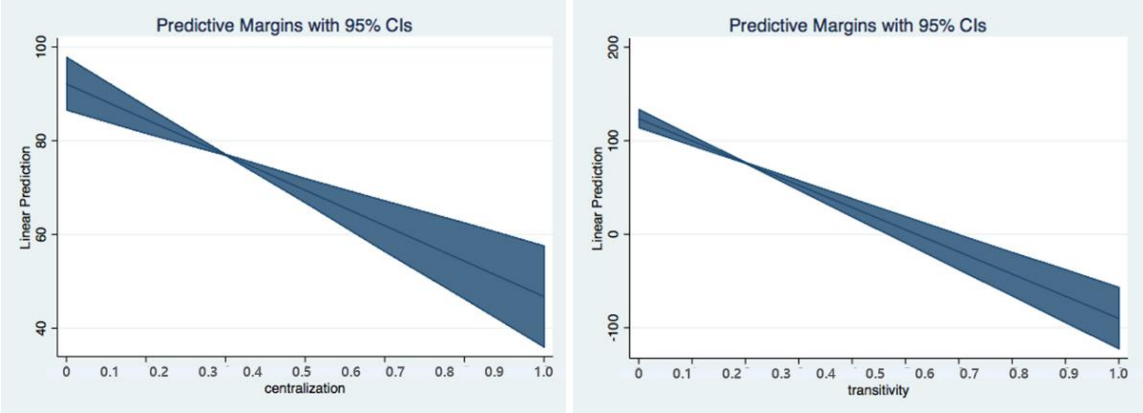


Figure 4. Marginal Effects at Regional Level.

With respect to the effects of the EECBG in terms of designated environmental change, the results in Table 2 show less impact on regional outcomes than on the structural changes to collaboration. At the regional level, for each additional USD 1 million is spent on green economy in the region, 220 more FTEs are generated in the regional green economy over time than would otherwise have been. Although the EECBG contributes to improving regional outcomes, the interaction terms indicate that it does not influence the efficacy of collaboration at the regional level.

5. Discussion and Conclusions

Local government is an important actor in the field of energy and climate change policy as well as greenhouse gas reduction and energy efficiency infrastructure [26]. However, due to the fragmented authority of local governments, the problems of under- or over-provision of public goods often emerge [27]. Thus, the importance of interlocal collaboration is increasing from both the theoretical and practical points of view, as the appropriate scope of public services does not always match the jurisdictional boundaries of local governments.

The analytic results in this study empirically demonstrate how governance mechanisms influence the selective and collective outcomes of interlocal collaboration. At the local level, although a centralized position in collaboration contributes to achieving desired outcomes, it is still conditional on the existing institutional set of rules. That is, if environmental changes are manageable at an individual level, reinforcing the centralized position brings more selective benefits from the collaboration. However, unlike the general hypothesis on network integration [8,28], tightly clustered partnerships are less efficient in achieving desired outcomes. Although the individual actors prefer expanding more clustered relationships to respond to high-risk ICA dilemmas [21], such tight and dense relationships also generate additional maintenance costs which in turn exacerbate the selective outcomes.

Moreover, this study provides more systematic grounds for arguing that the desired outcomes at the individual level do not necessarily lead to overall well-being at the col-

lective level [8]. As an institutional boundary of individual collective actions, the region coerces local governments to abide by the institutional set of rules. These collectively imposed costs are latent as long as the institutional arrangements are stable. When environmental changes affect the institutional arrangements, as observed in the analytic results, the costs are exposed to individual collective action in terms of changes to the institutional set of rules. This cross-impact of environmental changes between individual and regional levels implies the emergence of opportunistic behavior in the existing collaboration. In the analytic results, with regard to the newly exposed or imposed costs at the regional level, the local government in a higher centralized position is tempted to maneuver the collaborative mechanisms to maximize the selective benefits. As a result, the local government can gain as much selective benefit as allowed in the change to the collaboration at the individual level, while the collective costs are imposed on the peripheral local governments through the collaborative mechanisms. While these selective outcomes can be anticipated as having spilled over into neighboring local governments by simple aggregated measurement of collective outcomes, the analytic results suggest that the collective costs should also be considered as the spillover effects.

Finally, the analytic results show that the EECBG as a designated environmental change has significant impacts on metropolitan green economic development. At both the local and regional levels, the EECBG positively influences green job creation. At the local level in particular, this exogenous stimulus contributes to mitigating the high costs of tightly clustered collaboration. That is, the environmental externalities derived from the EECBG are not fully absorbed by self-organizing mechanisms; thus, the externalities affect governance changes and outcomes. However, at the regional level, the results show that the EECBG has only a direct impact on collective outcomes and generates insufficient scales of positive externalities inducing governance changes. In addition, the results show that the externalities from the financial crisis are still driving forces in governance changes at the regional level.

In seeking to answer the question of how the collective outcomes can be desirable for regional governance, this study provides empirical evidence to rediscover the importance of the efficacy of collaborative mechanisms. Theoretically, bridging the gap between governance mechanisms and outcomes advances normative debates about good governance by providing a testable hypothesis in institutional research. Although limited to partially developed measurements, structural patterns in self-organizing mechanisms show how individual actors maximize selective outcomes through collaboration. More importantly, this study argues that better understanding of collaborative mechanisms at the collective level helps to expand understanding of individual collective action. In addition, it is noted that self-organizing mechanisms should remain effective in solving common problems with ICA dilemmas if collaboration is well-managed.

Author Contributions: C.-G.K. and N.K. conceptualized and designed the research; C.-G.K. collected the data and performed analysis; S.-J.H. contributed to elaborate theoretical framework and discussion as well as implications. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The network data presented in this study are available on request from the corresponding author.

Conflicts of Interest: The authors declare no conflict of interest.

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