

The Influence of Contextual Factors on Collective Actions for Locating Facilities with Externalities: Applying the Institutional Collective Action Framework

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Abstract: This study applies the Institutional Collective Action Framework to two cases: proposals for the construction of Taekwondo Park and the location of a nuclear waste dump site in Booahn. While the proposed park caused excessive competition because its benefits were overestimated and its private goods were considered necessary, the proposed nuclear waste site resulted in excessive conflict because of uncertainty about its potential harms and because its public goods were considered unnecessary. The former case showed homogeneity of political power and cooperation based on trust, whereas the latter case showed heterogeneity of political power and conflict based on distrust. Both cases showed politicians' active participation based on their reelection goals and a blocked network structure between central and local governments. Stakeholders in both cases showed strong internal ties with other stakeholders with similar potential political and economic benefits.

Keywords: externality, institutional collective action, competition, conflict

INTRODUCTION

Collective actors behave strategically to maximize their interests and seek to alter their behavioral patterns and network structures (Feiock, 2007; Gerber & Gibson,

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Manuscript received January 6, 2012; out for review February 8, 2012; review completed March 29, 2012; accepted April 4, 2012.

The Korean Journal of Policy Studies, Vol. 27, No. 1 (2012), pp. 57-85.

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2005; Hettich & Winer, 1995; Holtermann, 1972; Steinacker, 2008). Externality plays a pivotal role as a determinant artificially generating beneficiaries and losers. Externalities thus substantially influence collective action problems among stakeholders and result in high transaction costs (Feiock & Scholz, 2010; Steinacker, 2008). Therefore, externalities should be considered a key factor in an investigation of collective action.

However, existing research on collective action has devoted only limited attention to the influence of externalities on collective actions and contextual factors influencing those actions. Although some studies consider political factors (Cho, 1971; Hettich & Winer, 1995; Mudambi, Navarra, & Paul, 2002) and the characteristics of communities as determinants in their examination of the behaviors of collective actors, these studies have overlooked collective actors' behavioral patterns. In particular, they have overlooked the influence of networks on collective actions resulting from externalities. Although a few scholars (Gerber & Gibson, 2005; Feiock, 2004, 2005; Feiock & Scholz, 2010) identify inter-local partnership or cooperation as an alternative way to resolve externality problems, they do not adequately address the influence of networks on collective actions due to externalities.

Therefore, this study explains, systematically and in detail, how externalities influence stakeholders' collective actions, and explores what contextual factors influence the collective actions involved in locating facilities with positive and negative externalities, while focusing on behavioral patterns and networks. To do this, it applies the Institutional Collective Action (ICA) framework, and builds on it by incorporating the role of externalities more systematically. The ICA framework can provide indicators to systematically and clearly address the influences of externalities and contextual factors on the collective actions. It involves a set of essential indicators to explore collective action problems, examining the influence of a variety of contextual factors including network influence on collective action problems (Feiock, 2004, 2007). The ICA framework also can provide a reasonable explanation of the influence of physical characteristics, community characteristics, political institutions, and network activities on collective actions that occur in locating infrastructure for local economic development.

After discussing the types and characteristics of collective actions and externalities, this paper addresses collective action problems resulting from externalities. Next, it incorporates the problems of externalities and their influence on collective actions for local economic development into the ICA framework in order to analyze collective action problems among stakeholders. Based on this framework, it identifies a set of indicators influencing collective actions attributed to externalities. Lastly, it applies these indicators to two Korean cases that involved complicated collective actions due to positive and negative externalities: support for Taekwondo Park and opposition to the Boohn nuclear waste dump site. The analytical results suggest a

variety of policy implications for efficient management of collective action problems due to externalities.

EXTERNALITIES AND COLLECTIVE ACTIONS

Types and Characteristics of Externalities

Externality is defined as “any valued impact (positive or negative) resulting from any action (whether related to production or consumption) that affects someone who did not fully consent to it through participation in voluntary exchange” (Weimer & Vining, 2004, p. 91). Many studies of externality have focused on its effect on overproduction and underproduction and on solutions for these problems. This study changes the focus slightly, from policy effects to collective actors’ behaviors. For positive externalities, one actor’s economic behaviors can produce another’s benefits more than a cost without a market mechanism (Gerber & Gibson, 2005). However, for negative externalities, one actor’s economic behaviors can generate another’s loss more than a benefit. Therefore, while negative externalities usually exist in NIMBY (not in my back yard) facilities, positive externalities are generally embedded in PIMFY (please in my front yard) facilities. Since externalities can artificially change the structure and scope of benefits and costs, they significantly influence the types of collective action undertaken. The effects and geographical boundaries of externalities are not likely to be clearly defined, and this heightens the uncertainty regarding stakeholders’ potential benefits and costs.

Unclear Property Rights

Obvious property rights are defined as “all benefits and costs of some activity-good-thing [that] can be identified and attributed to a particular owner” (Dragun, 1987, p. 863). An important problem of positive externality is that it produces a lot of rents from which property rights cannot be defined clearly (Richman & Boerner, 2004). Thus, positive externalities disturb the benefits of collective actors and might generate high transaction costs. On the other hand, negative externalities generate unexpected costs for others’ economic activities and can affect the costs of collective actors. Therefore, negative externalities can generate high bargaining or administrative costs.

The most serious problem due to the unclear property rights of externalities is stakeholders’ free riding. Many free riders want to avoid the costs attributed to externalities

and enjoy only benefits, and thus self-interested local governments are likely to engage in strategic and opportunistic behaviors. Many scholars suggest that, to clearly define property rights and to establish constraints through political institutions, rules in use related to location and sociopolitical relationships among stakeholders in order to resolve this problem (Coase, 1960; Feiock, 2004; Feiock & Scholz, 2010; Firmin-Sellers, 1995; Ostrom, 2005; Skaperdas, 1992). Accordingly, these issues will entail institutional arrangements and political bargaining among stakeholders (Ostrom, 1998; Steinacker, 2008).

Imbalance of Benefits and Costs

Externality incurred by an actor's economic activity influences another's economic benefits and costs without going through a market transaction mechanism (C. Kim, 2002; Weimer & Vining, 2004). In this sense, in terms of the whole society, economic activity producing positive externality incurs underproduction of benefits, and economic activity producing negative externality generates overproduction of costs.

Collective actions among stakeholders tend to be strategic and opportunistic. The stakeholders with direct losses or benefits generally are more active and sensitive to their own interests. These individuals or local governments might seek strategic advantage by exercising political power or lobbying to attract facilities, and this may sometimes result in conflicts among them. However, stakeholders with indirect or uncertain losses and benefits might remain passive, just watching the interactions and interest distributions among active stakeholders. In general, economic development decision making and implementation within a complicated group of actors will require higher enforcement and monitoring costs (Feiock, 2007; Johnson, 1975; Ostrom, Schroeder, & Wynne, 1993).

Types and Characteristics of Collective Actions

It is not easy to divide complicated collective actions attributed to externalities into a couple of typical categories, because externalities involve a variety of characteristics and so generate problems. Even though collective actions can take a variety of shapes, this study tries to comprehensively classify collective actions in the location of new facilities for local economic development into three types: cooperation, competition, and conflict (Feiock, 2004).

Cooperation exists when a proposal's potential costs are lower than its potential benefits. It tends to occur in cases with positive externality. However, organizations including local governments might also cooperate with others to minimize losses in

cases of negative externality. Cooperation is based on formal or informal agreements among local jurisdictions (Feiock, 2004; Hansen, 2002; Post, 2004).¹ When actors seek to locate facilities in a place where they can share their interests through formal or informal agreements, policy spillovers due to externality will provide incentives for intergovernmental cooperation (Post, 2004). If voluntary agreements emerge among collective actors, intergovernmental cooperation can be discussed as a realistic alternative for resolving externality problems (Feiock, 2005).² On the other hand, cooperation can happen in cases with negative externality when organizations or individuals arrive at an agreement to minimize the resulting costs or damages. In other words, when actors share goals, they will cooperate even in cases with negative externalities.

Competition in economics means attempts by several stakeholders to obtain a greater share of benefits. It happens when actors are not able to arrive at a formal or informal agreement to share benefits in spite of having goals and interests in common. Therefore, competition generally occurs in response to a positive externality. It usually arises when transaction costs for cooperation are high although the positive externality produces a lot of rents or local governments want to maximize their own interests. If the distance between actors, such as local governments or individuals, is not so small as to allow shared benefits, and if it is a zero-sum game, competition is inevitable (Gerber & Gibson, 2005). Even if regional cooperation could reduce competition between local governments, competition can continue at the regional level because of the inherent characteristics of externality when the geographic boundary is not clear (McCarthy, 2000).

Conflicts usually happen when organizations or individuals have conflicting goals. Conflicts about facility location generally arise in cases of negative externality. Since negative externalities typically involve economic and environmental damages, the NIMBY syndrome develops in local communities relative to the negative externality. Furthermore, the boundaries of negative externalities do not tend to be obvious, and distrust between supporters and opponents is usually high (Kraft & Clary, 1991). Therefore, conflict among stakeholders usually occurs in deciding the locations of facilities with negative externalities (Ansuategi & Perrings, 2000; Hamilton, 1993). If negative externalities include factors that can threaten safety or if it is zero-sum game,

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1. Repeated interactions and previous relationships can also produce trust and reputations that can facilitate cooperation (Feiock, 2007; Post, 2004). The greater the homogeneity of goals or culture between groups, the lower the transaction costs, because policy preferences are more likely to be the same (Lubell, Feiock, & Ramirez, 2005; Post, 2004).
 2. Such voluntary cooperation may be affected by mayors or city managers because they usually lead strategies of collective action (Feiock, 2007; Lubell, Feiock, & Ramirez, 2005).

bargaining cannot be achieved easily and conflict is inevitable. Therefore, high transaction costs can occur due to difficulties in negotiation and enforcement.

Finally, collective actions related to locating facilities differ depending on the type of externality and its boundary. While facilities with positive externalities generally generate concentrated benefits to particular groups or organizations within certain boundaries, the costs are borne by unspecified persons. Therefore, most organizations want to locate such facilities in their jurisdictions. However, organizations that want to attract such a facility do not always have an agreement with one another, because each wants to protect its own interests, excluding others. Positive externality usually causes competition or cooperation.

On the other hand, negative externality usually generates concentrated social losses to particular groups or organizations within a certain boundary, while the benefits go to unspecified local residents. While some organizations that share a common goal of minimizing the costs will cooperate with one another, others, who can get benefits from a facility with negative externality, will unilaterally support the facility. Such a situation may generate conflicts between cost-bearing organizations and beneficiary organizations. Finally, collective actors usually try to attract PIMFY facilities to their own districts while blocking NIMBY facilities.

INSTITUTIONAL COLLECTIVE ACTION FRAMEWORK

The Institutional Collective Action (ICA) framework considers various contextual factors of collective decisions as determinants that affect the behavior patterns of collective actors, and concentrates on externality problems in a fragmented system (Feiock, 2005, 2007). Therefore, this framework can systematically consider the influence of externalities (Feiock & Scholz, 2010). The ICA framework examines the impact of four contextual factors on collective actions: physical and material characteristics, attributes of community, political institutions, and networks (Feiock, 2007). Based on these four critical factors, it provides a useful lens for exploring cooperation, competition, and conflict among stakeholders.

Collective Actors and Their Objectives in the ICA Framework

Collective action is not an aggregate of random individual actions, but self-interested actors' coordinated actions that aim at a common end (Johnson, 1975, p. 172). The collective actors exist in a bounded rationality with incomplete information and are constrained by institutions. Accordingly, self-interested collective actors' choices tend

to result in optimal outcomes (Ostrom, 1999, p. 44-46). However, collective actors are fallible learners who trace strategies that can create higher benefits (Feiock, 2007, p. 48; Ostrom, 1998, p. 9). They can adopt strategies that result in higher benefits as well as create social capital or cooperative norms over time, because they learn that cooperative strategies may produce higher benefits (Feiock, 2004, p. 148).

Collective actors can be categorized as supporters, objectors, or mediators. The ICA framework generally assumes that they are organizations or groups sharing goals or interests. This framework is based on the Institutional Analysis and Development framework and expands the unit of analysis to the organization level. However, it still considers individuals as representatives who act in the interest of a group or an organization (Feiock & Scholz, 2010). Therefore, individuals are not excluded from the analysis. Individuals and groups who have the same objectives make an alliance with supporters of externality. Their relationship is likely to be based on strategic interests due to an imbalance of beneficiaries and losers and ambiguous property rights resulting from externalities (Richman & Boerner, 2004; Vatn & Bromley, 1997, p. 137; Wolsink, 1994). Supporters and opponents have different perceptions of the benefits and losses that externality generates.

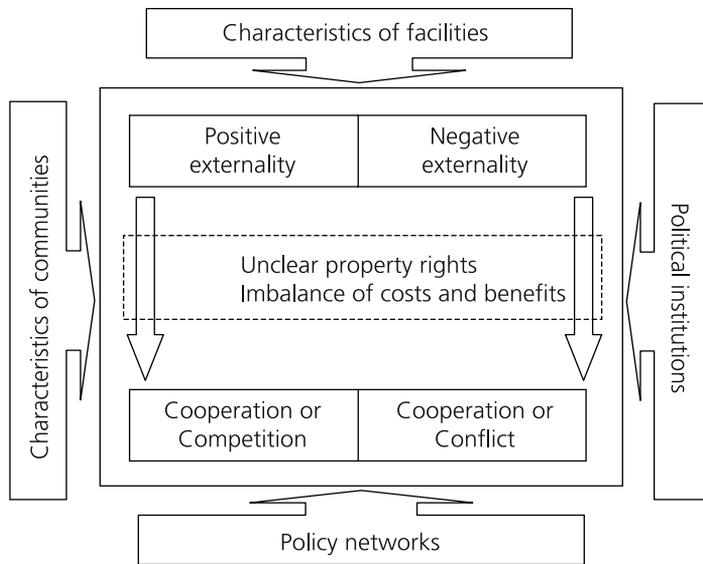
While supporters have incentives to strategically establish network structures and exercise political power in order to encourage the location of a facility (Steinacker, 2008, p. 9-11), opponents are likely to attempt to block location of the facility in their jurisdiction. For facilities generating positive externalities, the typical pattern of collective action is that supporters compete with one another to maximize their own interests. However, when facilities have negative externalities, conflict between supporters and opponents is the typical behavioral pattern.

Politicians who seek financial or voter support tend to be supporters, and central or local governments also play pivotal roles in setting the agenda and establishing policies for supporters. Most citizens within the influence boundary of the externalities will object to the location of a facility if they cannot obtain more benefits than losses. Therefore, in general, while citizens support the location of facilities generating positive externalities, they object to the location of facilities resulting in negative externalities. In addition, nongovernmental organizations (NGOs) in general support the public interest, and they can play a role as mediators. If a location for infrastructure is a source of conflict among lower-level governments, higher-level governments can function as mediators.

Institutional Collective Action Model for Location of Facilities

The ICA framework considers various contextual factors as determinants that affect the behavior of collective actors (Feiock, 2005, 2007). Even though this approach draws insights from actor-centered and institutional analysis and the development framework, it also draws on agency and social network theories in order to extend the framework to a broader set of collective actions relating to economic development, regional management, and urban service provision.

Figure 1. Institutional Collective Action Model for Location of Facilities



As modeled in figure 1, externalities can be categorized as positive or negative. Facilities with such externalities inherently involve unclear property rights and an imbalance of costs and benefits. Therefore, these problems cause different collective actions. Positive externality is likely to give rise to cooperation or competition, and negative externality usually causes cooperation or conflict. The ICA framework considers four types of contextual factors influencing collective action regarding facilities with positive or negative externalities (Feiock, 2007); they are summarized in table 1.

Characteristics of facilities usually are used to measure location and attributes of the facilities. Asset specificity can be considered as a critical measure to explain the transaction costs of locating facilities, and measurement difficulty and excludability/subtractability are useful to measure the inherent attributes of the facilities. For charac-

Table 1. Contextual Factors Influencing Collective Actions for Locating Facilities

| Contextual factors | Measures |
|--------------------------------|---|
| Characteristics of facilities | Asset specificity |
| | Measurement difficulty |
| | Excludability/subtractability |
| Characteristics of communities | Homogeneity of goals and preferences |
| | Geographic conditions |
| | Socioeconomic inequality |
| Political institutions | Nature of elected and appointed officials |
| | Principal-agent problem in hierarchical structure |
| Policy networks | Fragmented and concentrated network structure |
| | Credibility clustering and information bridging |

teristics of communities, this study measures homogeneity of organizations with regard to goals and preferences, and uses geographic conditions to measure the influence of the boundaries of externalities on collective actions. Socioeconomic inequality is used to measure economic conditions in the community. The nature of elected and appointed officials is used to explain the attributes of politicians or decision makers, and to investigate information asymmetry like the principal-agent problem. Lastly, this study notes network effects on collective actions, focusing on a structural perspective and ties among stakeholders who are political actors oriented to self-interest or leaders of community organizations.

Characteristics of Facilities

The characteristics of facilities can be discussed based on three indicators: asset specificity, measurement difficulty, and excludability/subtractability (Feiock, 2007; Ostrom, 2008; Richman & Boerner, 2004; Williamson, 1985).

Asset Specificity

Asset specificity can restrict potential locations for facilities. Particularly, site specificity and physical asset specificity usually play roles as determinants in facility locations (Ostrom, Schroeder, & Wynne, 1993; Richman & Boerner, 2004).³ Asset

3. Asset specificity can be categorized as follows: site specificity, physical asset specificity, human asset specificity, brand names, dedicated assets, and temporal specificity.

specificity can become a critical factor in deciding appropriate sites for facilities generating positive or negative externalities. It is expected to reduce collective action problems among stakeholders related to the facilities. However, several kinds of asset specificity need to be considered simultaneously, and it is not easy to find a place that satisfies all of them. Therefore, for facilities generating positive externalities, stakeholders will compete to host the facilities, emphasizing only the superior asset specificity conditions of their own proposed sites. For facilities generating negative externalities, asset specificities can be used as determinants of political decisions and conflicts because negative externality tends to make stakeholders recognize the risk and uncertainty more than real losses. In addition, since almost all facilities are fixed assets and require a lot of sunk costs, it is difficult to relocate them. Thus, once a facility is located on a certain site, collective actors are likely to enjoy the benefits or live with the costs for a long time. They can engage in fierce conflict or seek to cooperate in order to minimize negative externalities, or can aggressively compete or cooperate to maximize positive externalities.

Measurement Difficulty

Benefits and costs resulting from externalities are generated without a market mechanism, and therefore economic actors are not likely to know the extent to which their economic actions influence others' economic costs and benefits. Therefore, benefits and costs due to externality are difficult to measure. For the negative externalities, latent losses and high monitoring costs can arise (Riddel & Schwer, 2006, p. 325). Therefore, stakeholders influenced by negative externalities often behave and make decisions based on perceived risk, not a scientific measure of risk. Accordingly, their responses to negative externality are emotional and hostile. On the other hand, collective actors tend to overestimate benefits resulting from positive externalities, because these too are uncertain and tend to be subjectively perceived rather than scientifically measured. Therefore, stakeholders will compete to pursue benefits from positive externalities. Difficulties in measuring externalities will intensify both opposition and support for a facility.

Excludability and Subtractability

Excludability and subtractability⁴ of goods and services can significantly influence

4. Excludability and subtractability are criteria for categorizing goods and services as public, private, tool, or common pool goods (Savas, 1987).

the behavioral pattern of collective actors, because they help determine suppliers and consumers' behaviors in the market. They are also closely related to income elasticity,⁵ which helps determine consumers' responses. Therefore, an explanation of excludability and subtractability needs to be integrated with income elasticity.

If facilities generating positive externalities are necessary goods, they will generate a lot of rent and many collective actors will compete to attract them.⁶ If goods or services produced by the facilities are private goods with high excludability and subtractability, competition to attract the facilities will be more intense because they can generate more benefits for owners. Even if the facilities are public goods, if they generate a lot of rent, governments may try to attract them for economic development. In addition, as excludability and subtractability become lower, stakeholders will attempt to get a free ride.

If the goods or services of a facility generating negative externalities are necessary goods with low income elasticity, collective actors might seek to cooperate with stakeholders in order to minimize the negative externalities.⁷ When facilities with negative externalities produce goods or services with low excludability and subtractability, the risk and uncertainty that stakeholders perceive will be high and they may seek to block location of the facilities. Collective actions in such cases can raise serious conflict between supporters and opponents and generate high negotiation costs.

Characteristics of Communities

Communities can generally be characterized by homogeneity of preferences and goals, geographic conditions, and level of socioeconomic inequality (Feiock, 2007, p. 54; Ostrom, 1999, p. 57).

Homogeneity of Goals and Preferences

Homogeneity of goals and preferences can exist both within and across jurisdictional boundaries. High homogeneity encourages cooperative rent seeking among

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5. Income elasticity is the criterion for classifying goods or services as necessities or luxuries.
 6. If facilities are not necessities and excludability and subtractability are low, but they generate high rents, governments and citizens usually have an interest in them. If excludability and subtractability are high, governments and interest groups also usually have an interest in them.
 7. If the facilities are not necessities and excludability and subtractability are high, interest groups try to attract the facilities. On the other hand, if the facilities are not necessities and excludability and subtractability are low, no one wants to attract them.

actors in cases with positive externalities (Ostrom, Schroeder, & Wynne, 1993, p. 88). In cases of negative externalities, high homogeneity may decrease conflict and give actors more opportunities to cooperate to decrease the negative externalities. In addition, homogeneity among local governments is likely to exclude heterogeneous others. Therefore, cooperation among homogeneous collective actors will play a role in aggravating competition and conflict with heterogeneous collective actors.

Geographic Conditions

Geographic conditions are indicators closely related to the boundaries of externalities. Since facilities for local economic development are fixed assets and thus cannot easily be relocated, collective actions within a certain geographic boundary are likely to be repeated in neighboring jurisdictions. The repeated games usually can reduce transaction costs by creating interdependencies and trust (Feiock, 2007, p. 54; Post, 2004, pp. 72-74).

If more than one local government lies within the boundary of a proposed facility's positive externalities, those governments can cooperate to share the benefits—or to compete with more distant local governments that may also be working to attract the facility to their area. If multiple local governments exist within a negative externality boundary, they can cooperate to minimize the negative externalities and resist the location of the facility. Therefore, collective actions regarding facility sites are likely to center on direct beneficiaries and losers. However, if the influence boundary of an externality is unclear and local governments are outside it, the local governments tend to get a free ride in collective action because their benefits and costs are uncertain.

Socioeconomic Difficulties

If local governments face economic hardship and demands for a large economy of scale, they will cooperate or compete to promote economic development (Feiock & Park, 2005, p. 13). Strong growth prospects usually play an important role in attracting PIMFY facilities with positive externalities (Lubell, Feiock, & Ramirez, 2005, pp. 711-712; Molotch, 1976, pp. 5-7). Such facilities can provide good opportunities for economic development. Thus, poor local governments try to take advantage of them as triggers for economic development and make more efforts to attract them.

Growth potential also plays a pivotal role in efforts to block NIMBY facilities with negative externalities. Actors will strenuously object to locating NIMBY facilities within their jurisdictions if economic compensation does not meet their expectations. However, expected compensation can provide a chance to overcome economic hardship.

Therefore, individuals might have an incentive to defect from the opposition to protect their own interests.

Political Institutions

Political institutions also help determine the winners and losers in land-use policies (Lubell, Feiock, & Ramirez, 2005, p. 708) as well as significantly influence the policy-making process.

Elected and Appointed Officials

Elected and appointed officials usually recognize support for or opposition to facilities as a good opportunity to appeal to voters and advance their political careers. So most elected and appointed officials will support PIMFY facilities within their jurisdiction (Feiock, 2007, p. 55; Feiock & Park, 2005, p. 14) and resist NIMBY facilities (Lubell, Feiock, & Ramirez, 2005, p. 712). However, elected officials are more likely than appointed officials to work to attract projects with visible short-term benefits, because their need to be reelected is a greater incentive (Clingermayer & Feiock, 2001). The wider the scope of externalities and the stronger the intensity, the more active their participation becomes. These officials also lead efforts at cooperation with neighboring jurisdictions in order to obtain political power to attract or resist such facilities.

The Agent-Principal Problem

The agent-principal problem can exist between elected officials and citizens, between elected officials and appointed officials, or between higher- and lower-level governments (Clingermayer & Feiock, 2001, p. 64). Agent problems cause an imbalance of goal functions between collective actors. Constrained conditions offer elected officials high-powered incentives. Thus, elected officials will follow the opinions of influential interest groups or politicians more than those of unorganized citizens because of the high uncertainty of citizen response through voting (Lubell, Feiock, & Ramirez, 2005, p. 712). However, appointed officials prefer policies that benefit almost all citizens rather than those that benefit a particular interest group or district (Clingermayer & Feiock, 2001, p. 61), because they are aware that their careers may be advanced if they are successful in terms of efficient administration. In this sense, an appointed professional manager will prefer to enhance efficient administration because this approach replaces high-power political incentives with low-power bureaucratic incentives (Feiock, 2005, p. 15).⁸

Policy Networks

Policy networks can be defined as the arrangement of differentiated elements that can be recognized as the patterned flows of information in a communication network (Ahuja & Carley, 1999, p. 741). This paper explores policy networks that attract facilities with positive and negative externalities in terms of the power structure of the networks and their functions. Policy networks are formal or informal interactions that emerge as products in policy-making processes as well as structural and behavioral constraints in defining relationships among organizations or individuals. Accordingly, the ICA framework considers networks as more active and explanatory factors that can influence policy decisions and collective actions.

Concentrated and Fragmented Network Structures

Network structure can be categorized as concentrated or fragmented depending on the distribution of power (Adam & Kriesi, 2007, p. 134).⁹ If a network power structure is concentrated in a few main local governments, a network structure of facilities and their externalities is likely to show asymmetric bargaining and a dominant structure. On the other hand, if a network power structure is fragmented to several local governments, a network structure of facilities and their externalities is likely to show symmetric bargaining (Adam & Kriesi, 2007).

If local governments can share the rents derived from positive externalities, a concentrated network power structure is likely to show hierarchical cooperation, and a fragmented network power structure is likely to show horizontal cooperation. However, if local governments cannot share these rents, a concentrated network power structure will block the flow of information and show asymmetric competition or conflict, and a fragmented network power structure will have a transparent information flow and symmetric competition and conflict.

For facilities with negative externalities, a concentrated network power structure will show asymmetric cooperation or conflict due to asymmetric bargaining. Since this

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8. If elected and appointed officials are facing turnover or are not facing another election for several years (Hamilton, 1993, p. 108), or if electoral constraints are low and monitoring costs are high, the officials will have strong incentives to remain inactive, because they may be likely to enjoy some slack in the principal-agent relationship.
 9. If power distribution is concentrated, the types of interaction are likely to be dominance, asymmetric bargaining, and hierarchical cooperation. If power distribution is fragmented, the types of interaction are competition, symmetric bargaining, and horizontal cooperation (Adam & Kriesi, 2007, pp. 133-135).

network power structure blocks off information flow, collective action among stakeholders is likely to result in emotional and physical conflicts. However, a fragmented network power structure will show symmetric conflict to block or resist the facilities. This network power structure will show a more strategic and complicated conflict.

Credibility Clustering and Information Bridging

Network function focuses on the roles of network structures in mitigating the problems of institutional collective action; it involves two competing perspectives: credibility clustering and information bridging (Feiock, 2007). Credibility clustering emphasizes the role of tightly clustered “strong-tie” relationships capable of enhancing the credibility of commitments among network members (Feiock, 2007; Scholz, Berado, & Kile, 2006). Information bridging emphasizes the role of extensive “weak-tie” relationships linking diverse stakeholders in enhancing the shared information required to coordinate collective decisions (Feiock, 2007, p. 57; Fukuyama, 2001, pp. 9-10; Granovetter, 1973, pp. 1369-1378; Scholz, Berardo, & Kile, 2006, p. 2).

For positive externalities, if local governments consider the facilities as necessary to resolve economic hardship, they try to establish strong-tie relationships. A highly clustered network can impose constraints on local units that might attempt to shirk their responsibilities or act opportunistically (Feiock, 2007, p. 57).¹⁰ For negative externalities, if local governments are directly harmed by facilities with negative externalities, they try to establish strong-tie relationships to maximize power to block the facilities.

However, if local governments are indirect beneficiaries of facilities with positive externalities or indirectly harmed by facilities with negative externalities, they try to establish information bridging, because they have incentives to get a free ride. In addition, if local governments recognize that they can attract facilities with positive externality alone, network members are likely to engage in information bridging, as self-interested local governments try to take advantage of the information of others to maximize their own interests (Feiock, 2005, p. 16). However, for facilities with negative externalities, even though local governments may be able to block the location of the facilities on their own, they will seek to involve as many other local governments as possible in order to maximize their political power to block the facilities.

10. In addition, a clustered network can reduce transaction costs, for example for monitoring and enforcement, because a densely clustered network of intergovernmental relationships contributes to social capital by facilitating reciprocity and trust (Feiock, 2007, p. 57).

CASE STUDIES

Research Design

This study focuses on applying a theoretical advance to practical fields. Two national projects in South Korea, Taekwondo Park and the Booahn nuclear waste dump, provide an opportunity to explore collective actions in response to the location of facilities with positive or negative externalities. This paper first briefly explains the two cases and reviews the process from agenda setting to location decision, based on documents issued by the relevant ministry of the central government and related NGOs as well as interviews conducted during the period and newspaper articles. It adopts a comparative analysis based on the contextual factors influencing collective actions in regard to locating facilities. It explores distinctions between the two cases depending on these factors, focusing on the behaviors of stakeholders, including institutions and networks. The analysis is somewhat limited because of difficulties with data collection.

Taekwondo Park

The Taekwondo Park project is representative of the collective action problems related to PIMFY facilities with positive externalities. The Ministry of Culture and Tourism of Korea announced in April 2000 that the Korean government would develop the park as a national tourist destination. The ministry projected that once the park was built, 1.5 million tourists would visit it, the profit would be as high as \$13 million per year, and 1,500 jobs would be created (Ministry of Culture and Tourism, 2004). At that time, Korean local governments were experiencing economic hardship due to the 1997 financial crisis.

After the announcement from the central government, 28 local governments competed intensely to host Taekwondo Park, investing a large amount of human and financial resources.¹¹ However, the central government did not implement a preliminary feasibility study, estimate a budget, or develop a specific plan. This project generated significant transaction costs and social losses due to excessive competition by local governments hoping to spur economic recovery (*Chosunilbo*, September 17, 2000). Thus, the National Assembly strongly advised the central government to reconsider

11. Efforts by local governments included a Taekwondo contest, cross-peninsula rally, petition ceremony, establishment of a taekwondo team, a signature campaign, ads, and a Taekwondo seminar and research project.

the project, and Secretary Han-Gil Kim of the Ministry of Culture and Tourism announced that it would be reconsidered (Ministry of Culture and Tourism, 2004). Although the results of the feasibility study were presented in September 2001, the Ministry of Culture and Tourism did not create a specific plan or criteria for deciding where to locate the park.

The Roh government's Public Exercise Promotion Five-Year Plan, released in June 2003, included Taekwondo Park, and therefore this project was reinitiated (Ministry of Culture and Tourism, 2004). Elected officials led the rent-seeking competition with citizens' active participation, and the project again caused serious competition between local governments (*Seoulshinmoon*, December 16, 2004; *Chosunilbo*, December 16, 2004). The evaluation committee chose Muju as the proposed location for the park on December 29, 2004. However, Chuncheon and Gyeongju did not agree with the result of the evaluation, arguing that it represented an unfair political decision (*Kyunghyungshinmoon*, December 22, 2004; December 14, 2004).

Booahn Nuclear Waste Dump Site

The Booahn nuclear waste dump site is representative of the collective action problems of local governments who block NIMBY facilities.¹² After residents of WeeDo in Booahn paid an inspection visit to the Korea Atomic Energy Research Institute, they communicated to the Booahn Local Assembly that they were willing to locate a nuclear waste dump in WeeDo. The mayor of Booahn, Jong-Gu Kim, announced on July 11, 2003, that Booahn would try to attract the nuclear waste dump site to WeeDo in order to stimulate the local economy (Kim, 2004, pp. 166-167; Reports on the Booahn Anti-Nuclear Committee Homepage, 2003).¹³ Thus, a nuclear waste dump became a policy agenda item. Since that time, conflict among stakeholders continued to deepen.

Residents have held marine demonstrations, highway demonstrations, school boycotts, and candlelight demonstrations. The central government committed 7,000 policemen to control demonstrations, and some clashes resulted in bloodshed. The

12. Booahn is a local jurisdiction within Jeolla-DulkDo province, and WeeDo is a small island within Booahn. Almost all residents of WeeDo depended on fishing, but they were experiencing economic hardship due to the change in the flow of seawater caused by a land reclamation project and warm drainage water around the YoungGwang nuclear power plant.

13. Mayor Kim first stated that he would not submit an application to the central government, but changed his opposition to support the next day (Kim, 2004, p. 167). His intent was to receive financial support from the central government and Korea Hydro and Nuclear Power as compensation for construction of the nuclear waste dump.

central government sought to communicate with the residents of Booahn and proposed a \$210 million economic development subsidy. However, the residents of Booahn rejected this offer and beat the mayor of Booahn.

Residents continued to hold peaceful demonstrations. In a referendum in which 72 percent (37,540) of Booahn residents participated, 5.7 percent (2,146) supported the nuclear waste dump while 91.8 percent (34,472) opposed it. Eventually, this issue was resolved during a meeting between Prime Minister Go and residents' representatives. As a result, on September 16, 2004, the secretary of the Ministry of Commerce, Industry, and Energy announced that the central government was withdrawing all plans to locate a nuclear waste dump at Booahn (Kim, 2004, p. 167-171; Reports on Booahn Anti-Nuclear Committee Homepage, 2003; Ministry of Commerce, Industry, and Energy, 2003, 2004).

COMPARATIVE ANALYSIS

Characteristics of Goods and Facilities and Their Externalities

Excessive Competition and Excessive Conflict: Asset Specificity

The criteria used to choose a site for Taekwondo Park were subjective and abstract.¹⁴ While the park had low asset specificity, it was perceived as a project that would generate high benefits. Therefore, local governments competed to provide the site for the park. Local governments openly carried out rent-seeking activities and political power games. Some mayors openly complained to their political party, and left the party after failure to attract Taekwondo Park. In addition, Taekwondo Park was a fixed asset that would generate high rents but also require high sunk costs. Thus, local governments competitively sought to attract the rent-seeking part.

In contrast, the Booahn nuclear waste dump case shows excessive conflict. It had high asset specificity and high sunk costs. A nuclear waste site cannot easily be moved to new place and thus might cause a great deal of loss for a long time. Residents already recognized that fish hauls had decreased due to warm-water drainage from the

14. The central government's criteria for the first step were as follows: accessibility, marketability, economic efficiency, contribution, development feasibility, environment, local conditions, and public interest. The criteria for the second step were location adequacy, balanced national development and synergy effects, capability and willingness of local government, and international location.

nuclear power plant in nearby YoungGwang. After the nuclear power plant was constructed at YoungGwang, its land value decreased and the local economy stagnated. Thus, almost all residents of Booahn vehemently opposed the nuclear waste dump.

Overestimated Benefits and Uncertain Losses: Measurement Difficulty

Although positive externalities create under-provision in terms of the whole society, local governments tend to overestimate social benefits. The Ministry of Culture and Tourism announced that 1.5 million tourists would visit the park each year, its profits would be as high as \$13 million per year, and 1,500 jobs would be created. However, some local governments estimated that 2.5 million tourists would visit the park and generate profits of \$300 million per year. Another local government estimated that the park would create 4,500 jobs and generate \$40 million in profits. Uncertain estimation of the benefits of the park by several local governments led many other local governments to perceive that it could provide numerous benefits.

In the Booahn case, residents and the central government differed greatly in their assessment of the harmfulness of radioactive materials. Although the central government asserted that a nuclear waste dump is safe and that advanced technology can block the outflow of radioactive substances even after 300 years, almost no residents of Booahn believed this. Residents considered location of a nuclear waste dump site within their jurisdiction as a deadly danger. They recognized that a radioactive substance cannot disappear after even 24,000 years. They also worried about economic stagnation, the drop in land values, and the loss of employment. Because of uncertainty about losses due to the difficulty in measuring negative externalities, opponents and supporters of the site could not reduce the gap between their differing perceptions. Eventually, there were clashes between the residents and the police, some ending in bloodshed, as well mob violence against the mayor.

Necessary Private Goods and Unnecessary Public Goods: Excludability and Subtractability

The Taekwondo Park project represents private goods that have high excludability and subtractability, rather than goods that are necessary for the whole society. However, after the 1997 financial crisis, almost all local governments were experiencing economic hardship and recognized the park as necessary to stimulate the local economy. Therefore, Taekwondo Park was recognized as both a necessary and private good that would generate high profits. In particular, the rate of growth in 2004 in Jeolla-Bukdo was 4.4 percent, and the lowest was in Gangwong-Do (4.2 percent). Thus, the governments

of these two provinces engaged in more rent-seeking activities to attract the park.

The Booahn nuclear waste dump project was a necessity for the whole society and a public good. However, it was not perceived as a necessary good by Booahn residents. The mayor hoped to receive financial aid for Booahn and to attract other PIMFY facilities from the central government as compensation for hosting the nuclear waste dump. However, almost all the residents of Booahn opposed the dump site because they regarded it as unnecessary and believed it would generate awful negative externalities. Thus, there existed conflict between the mayor, who anticipated latent rents, and citizens, who worried about large negative externalities.

Characteristics of Communities and Externalities

Homogeneity and Heterogeneity of Political Power: Goals and Preferences

In Gyeongsang-Bukdo and Jeolla-Bukdo, almost all voters supported candidates of the same political party in almost all elections. More than 80 percent of Jeolla-Bukdo voters supported the same political party in almost all elections. Thus, Jeolla-Bukdo succeeded in making Muju's single proposed location for the park through compromise among neighboring local governments. Gyeongju and Muju maximized political power as well as resources, and eventually, Muju attracted the Taekwondo Park. Since almost all elected officials in Jeolla-Bukdo were of the same political party, their rent seeking was more efficient and systematic.

For the Booahn nuclear waste dump site, opponents and supporters showed an obvious heterogeneity of goals and political preferences. Almost all congress members at the national, provincial, and local levels in Jeolla-Bukdo belonged to the same party and opposed the facility, along with almost all the residents of Booahn. However, the representative supporter with the residents of WeeDo, the mayor of Booahn, was an independent and was born in WeeDo. Another supporter, the governor of Jeolla-BukDo, later moved from the Democracy Party to a new party that President Roh established. Opponents and supporters showed high heterogeneity based on political power and interests.

Cooperation Based on Trust and Conflict Based on Distrust: Geographic Conditions

The Taekwondo Park project showed cooperation based on trust between local governments. The governments of Jeolla-Bukdo experienced the importance of cooperation that arose from competition to attract the Winter Olympics and had shown a

preference for one political party for a long time. Thus, these local governments were able to agree on a single proposed location for Taekwondo Park. Almost all politicians born in Jeolla-Buckdo supported the proposed park location. In other provinces, local governments failed to agree on a single proposed location, or local politicians failed to present a united front in the competition.

In the case of the Booahn nuclear waste dump site, opponents and supporters showed high distrust. Mayor Kim of Booahn announced on July 10, 2003, that he would not submit an application to host this facility, but he reversed his position the next day. In addition, residents were divided into supporters, who believed in the proposed cash compensation of \$300,000-500,000, and opponents, who did not believe in it. The central government argued that no outflow of radioactive substances would be generated, but residents did not believe the government. Distrust and conflict existed between supporters and opponents. They showed self-interested and strategic behaviors.

Rent Seeking Defection: Responses to Socioeconomic Difficulties

The residents of both Muju and Booahn were experiencing economic hardship. However, actors in the two cases showed different behaviors. Muju worked together with neighboring local governments in an intensive effort to attract Taekwondo Park because residents believed that it could provide many benefits. Residents of WeeDo in Booahn were deeply in debt because of the fishery's decreasing yields due to the YoungGwang nuclear power plant. Many residents of WeeDo thought that they could pay off their debts with the compensation payment and then move to another jurisdiction. So despite the fact that WeeDo was likely to experience the greatest direct harm, almost all WeeDo residents supported the location of a nuclear waste dump in their community, unlike almost all other residents of Booahn.

Political Institutions and Externalities

Leadership by Elected and Appointed Officials: Nature of Elected and Appointed Officials

Performance of public works can substantially influence politicians' chances in the next election. Therefore, for the Taekwondo Park project, elected officials in each province tried to develop political power to influence the central government by forming temporary committees and task forces. They also asked for support from other local governments within each province. They visited and lobbied powerful decision makers

in the central government and key members of the National Assembly. Local governments told almost all officials to prepare for the Taekwondo Park site evaluation.

For the Booahn nuclear waste dump project, congress members born in Booahn severely criticized the mayor of Booahn, the governor of Jeolla-Buckdo, and the central government, and lobbied to prevent the location of the facility in Booahn. While national congress members born in Booahn and local congress members were in the same party, the governor of Jeolla-Buckdo and the central government belonged to another party. Therefore, the congress members severely criticized and tried to frustrate governmental policy due to their political interests.

The nuclear waste dump controversy incurred large administrative costs due to continuing candlelight demonstrations, violent clashes, highway demonstrations, and other events. While politicians concentrated on the location of the park and the nuclear waste dump, civil servants in many local governments complained that other public services were stopped. Both cases obviously showed politicians' efforts to achieve reelection.

High Power Incentives: Principal-Agent Problem

These two cases clearly showed different agents' behaviors. Taekwondo Park is a PIMFY facility with positive externalities, and so both the mayor and the governor sought to attract the facility in order to meet citizen expectations. However, despite the fact that the proposed Booahn nuclear waste dump site was a NIMBY facility with negative externalities, both the local mayor and the governor of the province tried to attract the facility, despite strong citizen opposition. Such opposite results arise from the high-power incentive of elected officials. The mayor of Booahn was born in WeeDo and was a political independent. The governor of Jeolla-Buckdo was friendly to the Roh government and joined President Roh's new party when it was established. The mayor of Booahn was concerned about the interests of his hometown, and the governor of Jeolla-Buckdo was concerned about reelection. He intended to attract other projects that generated positive externalities as compensation for hosting the nuclear waste dump. Even though the attributes of the facilities are different, the reason that politicians sought to attract them stemmed in both cases from their political interest in reelection.

Policy Networks and Externalities

Blockaded and Asymmetric Network Structure: Concentrated and Fragmented Network Structure

The two cases show blocked and asymmetric network structures between local and central governments and structural changes that depended on action by the central government. In the Taekwondo Park project, the central government did not officially announce the criteria for evaluating potential park sites. Although the central government tried to prevent lobbying, local governments had incentives to try to attract Taekwondo Park by unproductive rent-seeking competitions and did not trust the evaluation score. Although the central government eventually announced the evaluation criteria and the scores of the top seven local governments, it did so only after the rise of social waste.

The nuclear waste dump project also showed a blocked network structure due to citizens' distrust of the central government. While residents of Booahn were opposed to hosting a nuclear waste dump, the central government wanted to choose the dump site in a top-down process. The residents of Booahn and the central government had high information asymmetry because their network structures were blocked from each other. The central government ordered the police to control residents' demonstrations, and their clashes resulted in bloodshed. Since citizens of Booahn believed that the radioactive material would pose an extreme risk, suppression and appeasement by the central government increased their distrust.

Strong Internal Ties and Weak External Ties: Credibility Clustering and Information Bridging

For the Taekwondo Park project, local governments established self-interested network structures. Local governments in Jeolla-Buckdo had already recognized the need to propose a single site in the province, and they sought to agree on a location through compromise. Muju established a strong tie with higher-level governments, politicians born in the province, and citizens, and thus was able to get their support. However, the ties between neighboring local governments were weak. Neighboring local governments were unlikely to participate in the competition in a situation where their benefits were uncertain, paying attention to their own economic and political interests.

For the Booahn nuclear waste dump site, while residents of Booahn were perceived as direct losers, residents of neighboring jurisdictions, Gochang and Gunsan, were

perceived as indirect losers. Citizens, NGOs, religious groups, and politicians built a close network, which was called an antinuclear committee. Booahn's antinuclear committee tried to persuade neighboring local governments to participate in resistance activities. Although neighboring local governments worried about locating a nuclear waste dump site in Booahn, they were unwilling to directly participate in resistance activities and maintained a passive attitude. Therefore, Booahn and neighboring local governments could not establish a strong tie. Neighboring local governments wanted to establish a weak tie, focused on influence in the future.

CONCLUSION

Existing studies have not systematically investigated the influence of contextual factors on collective actions regarding the location of facilities with positive and negative externalities, in spite of the substantial influence of externalities on collective action. This study focused on behavioral patterns and network activities rather than the static attributes of collective actions. It discusses the ICA framework in a new way, drawing on the externality perspective and creating indicators to explore two Korean cases with

Table 2. Influence of Contextual Factors on Responses to Facilities with Different Externalities

| Contextual factors | Measures | Taekwondo Park | Booahn nuclear waste dump site |
|--------------------------------|---|---|------------------------------------|
| Characteristics of facilities | Asset specificity | Excessive competition | Excessive conflict |
| | Measurement difficulty | Overestimated benefits | Uncertain loss |
| | Excludability/subtractability | Necessary private goods | Unnecessary public goods |
| Characteristics of communities | Homogeneity of goals and preferences | Homogeneity of political power | Heterogeneity of political power |
| | Geographic conditions | Cooperation based on trust | Conflict based on distrust |
| | Socioeconomic inequality | Rent seeking due to economic hardship | Defection due to economic hardship |
| Political institutions | Nature of elected and appointed officials | Politicians' leadership and participation | |
| | Principal-agent problem in hierarchical structure | High-power incentives for reelection | |
| Policy networks | Fragmented and concentrated network structure | Blocked and asymmetric network structure | |
| | Credibility clustering and information bridging | Strong internal ties and weak external ties | |

positive and negative externalities.

The contribution of this study is first of all to systematically investigate the influence of externalities on behaviors and networks of collective actors. In the two case studies, behavioral patterns and network structures of collective actors had critical differences and commonalities depending on the type of externalities.

According to the results, while characteristics of facilities and communities have obvious differences in the cases of Taekwondo Park and the Booahn nuclear waste dump site, political institutions and policy networks have significant commonalities.

First, while the construction of Taekwondo Park caused excessive competition due to low asset specificity, the Booahn nuclear waste dump site caused excessive conflict due to high asset specificity. While low asset specificity lowers the entry barrier, high asset specificity heightens the entry barrier. Therefore, while many local governments competed to attract Taekwondo Park to their jurisdictions, the central government consistently sought to locate a nuclear waste dump at WeeDo in Booahn. The overestimated benefits of Taekwondo Park and the uncertain risks associated with the nuclear waste dump due to measurement difficulties promoted excessive competition and conflict, respectively. In addition, Taekwondo Park, with its positive externalities, was considered a necessary private good that guaranteed high profits, whereas the Booahn nuclear waste dump was perceived as an unnecessary public good that would cause many losses.

Second, the homogeneity and heterogeneity of political preferences substantially influence political interests and policy making. While the competition to attract Taekwondo Park showed high homogeneity of political power among several stakeholders, the conflict over the location of the Booahn nuclear waste dump site showed high heterogeneity of political power among stakeholders. Stakeholders who would share benefits from Taekwondo Park construction cooperated with one another based on high trust and sought to overcome economic hardships through strategic rent seeking in the effort to host Taekwondo Park. On the other hand, stakeholders of a nuclear waste dump site who showed high heterogeneity of political power distrusted and failed to cooperate with one another to resolve economic hardship through compensation payments.

Third, elected officials actively participated in the debates over both cases. The choice of a site for a PIMFY or NIMBY facility is an important issue to politicians that contributes to local economic development. In addition, these facilities provide politicians with useful opportunities to obtain voter support by satisfying their demands or to maximize their political interests by forming ties with powerful politicians. Politicians carried out strategic and active efforts in both cases.

Finally, both cases showed blocked and asymmetric network structures between

central and local governments. Many local governments that failed to attract Taekwondo Park did not trust the evaluation criteria and scores, and the antinuclear committee opposing the Booahn nuclear waste dump site did not believe the central government's assertions and refused to negotiate. Therefore, both cases showed blocked network structures with high information asymmetry. In addition, the collective actors in both cases established strong ties with other stakeholders who had a high homogeneity of political preferences and could share rents. Frequent networking with them significantly affected policy preference and decision. Therefore, while stakeholders in both cases formed strong internal ties with others who could share political and economic benefits, they formed weak external ties with others who could not share benefits.

Some parts of this analysis remain subjective. In addition, it has focused exclusively on attracting new national facilities into a region. Therefore, the three types of collective action—conflict, competition, and cooperation—are not discussed in relation to a wide range of social phenomena. For example, in the case of removing and reconstructing facilities with positive externalities, local organizations and governments might struggle with one another depending on the externalities involved. It is hoped that future research can resolve these limitations.

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