

**THE FLORIDA STATE UNIVERSITY
COLLEGE OF SOCIAL SCIENCES**

**INSTITUTIONAL TIES, INTERLOCAL CONTRACTUAL ARRANGEMENTS,
AND THE DYNAMIC OF METROPOLITAN GOVERNANCE**

By

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ABSTRACT

This dissertation examines the dynamic of metropolitan governance in terms of interlocal contractual arrangements that govern the delivery of collective goods by local government. It views a metropolitan area as buzzing with contractual activities and observes that these activities are nested at different levels in a web of interlocal relations in an action arena. That is, local governments involved in contractual activities are connected through their contractual arrangements--forming what we refer to as institutional ties. An interconnected network of institutional ties represents a pattern of relations between local governments. Such a network structure is not static but evolves over time. These changes can be purely structural--explained by an endogenous mechanism such as a transitivity form of network structure, or exogenous, explained by such factors as a local government's political institutions (form of government or levels of government), geographical proximity, and demographic characteristics.

In order to understand the different forms of formal and informal institutional arrangements that directly influence the formation of institutional ties, and indirectly, the formation of metropolitan governance, this dissertation is guided by four research questions: (1) what are the many forms of institutional arrangements used by local governments to govern their transactions? (2) through what process do institutional arrangements become acceptable by involved parties? (3) how and why could the stability of institutional arrangements in governing interlocal relations be undermined? and (4) how would a new form of institutional arrangement be established? While the first two sets of questions attempt to identify and examine the many types of interlocal contractual arrangements, the last two sets explain how the established institutional arrangements might be changed.

The substantive focus of this dissertation is in the realm of public safety which, once produced, will be consumed by others at no additional marginal cost. There are a range of interlocal contractual arrangements found in the area of public safety, and Florida provides a research opportunity to examine the extent by which these

arrangements have been used by local governments. To capture the multiple types of interlocal contractual arrangements used by local governments to govern their transactions, we classify them into two general forms: restrictive and adaptive contractual arrangements. The first analysis of this dissertation explores factors that explain local governments' institutional choice. The empirical results show that vertical intergovernmental relations involving municipal and county governments generally employed a restrictive rather than adaptive form of interlocal contracting. The analysis also shows that the characteristics of goods and services as the product of transaction costs influenced the forms of interlocal contractual arrangements in the provision of public safety. Functional service area and the number of collaborators involved also play an important role in explaining a local government's decisions to enter into particular forms of interlocal contractual arrangements.

We then focused on the adaptive and restrictive forms of contractual arrangements as distinctive action arenas in the provision of public safety. Each form of contractual arrangement is treated as a distinctive form of metropolitan governance; and we seek to analyze their formation over a period of time using the network software for longitudinal data sets called SIENA.

For this particular analysis, four major metropolitan areas in Florida were selected: Miami-Fort Lauderdale-West Palm Beach MSA, Tampa-St Petersburg-Clearwater MSA, Orlando-Kissimmee MSA, and Duval-Jacksonville MSA. The analysis is designed to test two general propositions: the credibility-clustering and the information bridging hypotheses. The empirical results suggest that localities generally prefer to form a set of densely-connected institutional ties in the provision of public safety presumably for their ability to enforce credible commitment in the implementation of contractual activities. When outcomes of goods and services are difficult to measure requiring local governments to establish institutional ties based on the adaptive form of contractual arrangements, the empirical evidence supports the prediction of the credibility-clustering hypothesis that such metropolitan governance structures would be influenced by a dense network structure. On the other hand, the evidence seems to refute the information-

bridging hypothesis that a sparse network structure exists in metropolitan governance that is based on a restrictive form of contractual arrangements. A set of institutional ties that consists of a restrictive form of contractual arrangements generally would display a densely-connected network structure rather than a sparse network structure. Other findings include the importance of multilateral agreements in influencing the dynamic process of institutional ties. That is, the transaction costs of multilateral agreement can lead to a crowding-out of bilateral agreements. The political institutions and local community characteristics also have an impact on the dynamic development of metropolitan governance.

CHAPTER 1

INTRODUCTION

Interlocal contractual arrangements are often viewed by urban scholars as an administrative procedural approach rather than a political approach to metropolitan governance. They are one way for local governments to coordinate public policy to curb common concerns within metropolitan areas without opting for political integration. While the administrative procedural approach provides a legal framework for local governments with the authority to negotiate interlocal agreements within established legal limits, the political approach such as annexation, and city-county consolidation, requires statutory authorization and approval of the citizens. Carr and Feiock (2004) argue that interlocal contractual arrangements impose a lower transaction cost compared to annexation and city-county consolidation to the formation of metropolitan integration and have been widely used by local governments in delivering collective goods (Thurmaier & Wood 2004; Friesema 1970, 1971; Sonenblum, Kirlin, & Ries 1977). On balance, compared to the administrative approach, the political approach to political integration has not been successful (Salins 1993; Downs 1994).

Interlocal contractual arrangements have received much attention recently because they enable local governments to carry out their functional responsibilities jointly with other units of governments at lower costs (ACIR 1985; Atkins 1997). The benefits of interlocal contractual arrangements accrue when local governments can coordinate and share their resources such that any duplication of local services can be eliminated, negative externalities and locally unwanted land use can be effectively addressed through joint planning, economies of scale and efficiencies in standardized service provision are realized (Stein, 1990; Hirlinger & Morgan 1991), and the management of local growth can be effectively coordinated in order to improve regional

communities as a whole (Florida Intergovernmental Commission 2001). Interlocal contractual arrangements are particularly beneficial to localities facing fiscal constraints, especially in functional areas that involve large capital start-up and personnel expertise (Sonenblum, Kirlin, & Ries 1977; Post 2002).

The proliferation of interlocal contractual arrangements in the U.S has also led to a growing stream of research by scholars who have examined some of the causes and consequences of these arrangements on interlocal relations (Thurmaier & Wood 2004; Friesema 1970, 1971; Sonenblum, Kirlin, & Ries 1977). In earlier empirical studies, there had been surprising reports on the extensiveness of such arrangements fostering interlocal cooperation. Carrel (1954) found as many as 753 identified interlocal agreements in Philadelphia's 686 local jurisdictions. Graves (1964:746) considered this number of agreements "astonishing." In a classic study, Friesema (1970, 1971) found on average about 50.5 interlocal agreements per city in the Quad-city metropolitan area. The Advisory Commission on Intergovernmental Relations (ACIR) found 54 percent of 2,069 responding municipal and county governments have either interlocal service contracts or joint service agreements and that, twice as many jurisdictions have written formal agreements as have informal agreements (ACIR 1985). More recently, Thurmaier and Chen (2005) reported on the distribution of 12 percent of their mail surveys in Iowa and found about 11,797 identified agreements had been filed between 1965 and July 2004. Extensive use of interlocal agreements has also been reported by Foster (1998) in her survey of 278 Western New York municipalities, Carr (2005) in the state of Michigan, and Wood (2002; 2004) in Kansas Metropolitan area. In Florida, within the realm of public safety, there has also been a mark increase in the number of interlocal contractual arrangements being used by local governments to govern their transactions.

But getting local governments caught between two conflicting trends--rising demand for urban services and declining local government capacity--to enter into contractual arrangements with other jurisdictions given the potential loss of local autonomy and control in meeting community needs would have been considerably more

difficult without the flexibility in State statutes that reduced the costs of developing and maintaining such arrangements (Florida Commission on Local Government II 1998).

In the state of Florida, the expansion of interlocal service agreements came with the passage of the “Interlocal Cooperation Act of 1969” (s. 163.01, Fla. Stat.). The Act provides a *broad* legal framework for local governments to enter into agreements with either the public or private sector (ACIR 1985). The Act also addresses state-authorized programs such as county and municipal planning, land development regulations, and community redevelopment standards. Because these issues frequently cross jurisdictional boundaries, the Act contains numerous references to interlocal coordination. To avoid litigation and resolve potential interjurisdictional dispute, the Act is supplemented by the Government Efficiency and Accountability Reform Act of 1999. It provides a process for municipalities, counties, and special districts to resolve conflicts regarding the delivery and financing of local services on a county or regional basis. This is also true for the introduction of the Florida Governmental Conflict Resolution Act, which requires local governments to resolve disputes with other governmental entities before litigation is filed.

Other state statutes also played important roles in encouraging interlocal contractual arrangements. For example, Florida’s “1985 Local Government Comprehensive Planning and Land Development Regulation Act,” amended in the 1990s (Growth Management Act) was designed to offer intergovernmental relations a higher priority. Under this Act, the “intergovernmental Coordination Element” is a mandatory element of a local government comprehensive plan, which ultimately created a state requirement for local governments to coordinate planning activities with school boards, regional agencies, and state government. According to Florida’s Legislative Committee on Intergovernmental Relations (2001), the Growth Management Act has “had a significant impact” on interlocal coordination. Other important state statutes, specifically related to public safety include the “Florida Mutual Aid Act” (Part I Chapter 23, Fla. Stat.) and the State Emergency Management Act (Chapter 252, Fla. Stat.). They authorize local and state law enforcement agencies to enter into a mutual aid plan, i.e., to provide for the

coordination of law enforcement planning, operations, and mutual aid across jurisdictional lines.

1.1 GENERAL RESEARCH OBJECTIVES

This dissertation examines the dynamic of metropolitan governance in terms of interlocal contractual arrangements that govern local governments' deliveries of collective goods. While previous urban scholars often defined government institutions by the formal structure that determines the authority to allocate resources, this research argues that interlocal contractual arrangements encourage local governments' interactions and create *networks* of institutional ties that form the core of metropolitan governance. Such networks are purposefully evolving across the administrative and political boundaries of local government. They provide a potential alternative to more formalized, centralized or hierarchical systems to coordinate activities of fragmented regional governments.

The main objective of this dissertation is to examine changing attributes or local government behavioral characteristics that explain the formation of metropolitan governance. In this dissertation we are concerned with the mechanism that connects the “*what*” with the “*how*” and “*why*”: an explanation of metropolitan governance’s maintenance and stability or its development. The main focus therefore is on the different forms of formal and informal institutional arrangements that directly influence the formation of institutional ties, and indirectly, the emergence of metropolitan governance.

What should an adequate theory of emergence and change in metropolitan governance provide? First, it should provide an explanatory mechanism by which an institutional arrangement initially developed by two or more local governments can foster interlocal cooperation and thus establish institutional ties important for bridging information and building credible commitment. This entails answering two questions: (1) What are the many forms of institutional arrangements used by local governments to govern their relations? and (2) Through what process do institutional arrangements become acceptable by involved parties to govern their relations? Second, it should

explain how the established institutional arrangements might be changed. This requires answering the following questions: (1) How and why could the stability of institutional arrangements in governing interlocal relations (dyadic or triadic relations) be undermined? and (2) How would a new form of institutional arrangement be established? Here, the last question on the new establishment of institutional arrangement returns us to two earlier questions pertaining to the initial explanation for interlocal cooperation and thus the importance of institutional ties.

Many conflicting answers from a wide range of intellectual sources have been offered to these questions. The implications of how these questions are answered are numerous. From a critical perspective, an understanding of governance in metropolitan areas and its development allows us to determine whether the existing rules further the goals by which they are usually justified. They include sets of rules, state and federal statutes, decision-making procedures, and programs that serve to define local government exchanges and interlocal interactions. Metropolitan governance guides the actions of those participating in these practices in order to pursue social goals such as equity and representation, responsiveness, and efficiency.

From an explanatory perspective, social explanations of the development of governance help us to understand both the history of metropolitan areas and their contemporary events. For example, metropolitan governance that involves the establishment of institutional arrangements and administrative operation of local governments' transactions are not independent of local historical and political contexts. They are also embedded in repeated governmental interactions over time.

From a normative perspective, an understanding of how governance evolved influences our ability to make recommendations for reform. For example, studying the formation of metropolitan governance is important to local government officials because it addresses a wide range of significant political, economical, and social issues, including institutional arrangements that can reduce potential disputes concerning boundary change, environmental degradation, social segregation, and economic exchange. If the benefits of

metropolitan governance can resolve potential conflicts, promote interlocal cooperation in mixed-motive relationships, and, more generally, can alleviate collective action problems in a world of interdependent actors, then the ability of public managers or policy-makers to change rules in order to foster local government cooperation becomes crucial.

The use of interlocal contractual arrangements is also one of many ways for building trust and encouraging efficient governance to resolve metropolitan-wide problems in the long run. Governance, in this respect, does not presuppose the need to create material entities or organizations--that is, "governments"--to administer the social practices that arise to handle the function of governance. This is so because the operation of any government or public authority is costly, both in material terms (for example, the revenues required to run public agencies) and in terms of more intangible values (for instance, the bureaucratic inefficiencies and the restrictions on individual liberties imposed by even the most enlightened governments).

1.2 METROPOLITAN GOVERNANCE AND INSTITUTIONAL COLLECTIVE ACTION PROBLEMS

Theories of institutional collective action argue that the benefits of metropolitan governance flow from their ability to allow multiple organizations to make mutually beneficial exchanges and agreements that otherwise would not take place. Metropolitan governance established through a range of interlocal contractual arrangements (formal and informal agreements) enhances the likelihood and scope of service delivery by increasing available information about conducts specified in the agreements and enhancing the credible commitments to fulfill those agreements.

By spanning the local jurisdictional boundaries in a fragmented system, the network of institutional ties that forms metropolitan governance provides information about local governments' decision-making in relation to others within the region as well as about the potential implementation problems in each local jurisdiction. This encourages previously unexplored avenues in problem solving the opportunity for

interlocal cooperation. The structure of metropolitan governance also increases the credibility of commitments by transforming short-term interactions into repeated games in which a reputation for reciprocity and trustworthiness can mitigate the problem of opportunism involved in a single interaction, especially with localities or organizations that are not located immediately across the jurisdictional boundary.

However, the formation of effective metropolitan governance is constrained by the costs of developing and maintaining interlocal contractual arrangements which, according to the institutional collective action framework, are the *transaction costs* of contracting. There are search costs involved when locating and finding appropriate provision units. There are also monitoring and legal costs to maintain standards of service provisions across local jurisdictions. Furthermore, it is also uncertain whether legal agreements or interlocal contractual arrangements will be challenged through a litigation process.

The transaction costs of establishing contractual arrangements and thus the formation of institutional ties forming metropolitan governance can be exacerbated by state legal doctrines of nondelegation (Gillette 2001), which limit the capacity of localities to overcome contacting costs and the threat of strategic behavior. The ability to reap the benefits of metropolitan governance may also be constrained by Dillon's Rule, which precludes local governments from engaging in activities for which they have not received explicit authority from the state legislature. Although this restriction may not apply to those localities that have Home Rules or Charters, the Courts have upheld systematically those interlocal agreements that have been challenged as violations of home rule provisions (Gillette 2001).

Another constraint is the fear that localities will be "locked-in" when they have relied too much on outside contractual arrangements. The problem of lock-in can lead to instability in a local service provision if a failure means someone must be able to step in rapidly (Cooper 2003). Local government entities might not have additional resources and oftentimes are faced with relatively few available alternatives to cope with instability.

Loss of control and the fear that other localities might “drop the ball” are among the many structural barriers to effective metropolitan governance. Not surprisingly therefore, scholars warn of new challenges for governance, where the more complex the governance structure, the more likely it is that the actors involved will stumble (Agranoff & McGuire 1999).

The benefits of metropolitan governance are also constrained by localities’ reluctance to enter into contractual arrangements due to high contracting costs and threats of strategic behavior. Compared to private organizations seeking to coordinate activities, localities have less flexibility largely due to the geographical fixity of localities. Furthermore, the governance structure that assists the implementation of public services is different from private sector service delivery networks because it responds to values other than economic efficiency such as effectiveness, equity, responsiveness, and responsibility (Cooper 2003).

These impediments are exacerbated by another problem: individual locality incentives to participate in collective action do not reflect the full benefits since additional effort increases the information and reputation of all others in the network without any additional investment. Furthermore, any collaboration efforts developed through state and federal funding, or mandates that could reduce the transaction costs of forming regional-wide planning and implementation efforts are actually public goods that aid the region as a whole more than they aid any individual localities. The decision-making process will be dominated by lack of individual incentive to contribute to the effort of the collective, and thus will lead to an underinvestment in region-wide efforts to resolve institutional collective action problems. This leads to what Ostrom (1990) called the second-order collective action problem of institutional supply.

1.2.1 General Hypotheses

Scholz, Feiock, and Ahn (2005) recently proposed two general hypotheses relating to the emergence of network structures in mitigating the problems of institutional

collective action. One emphasizes the role of tightly-clustered or “strong ties” relationships capable of enhancing the credibility of commitments among network members, which they called the “credibility-clustering” hypothesis. The other hypothesis emphasizes the role of extensive “weak ties” relationships linking diverse organizations in enhancing shared information required to coordinate collective decisions, which they called the “information-bridging” hypothesis.

The credibility-clustering hypothesis suggests that the credibility advantage of a clustered network becomes increasingly important when there is a potential problem of shirking by localities involved in the delivery of collective goods. The threats of shirking impose great costs to those who have already invested resources, effort and time in the collective action. From the transaction cost perspective, the advantage of having a clustered network reduces the cost of enforcing the legal terms of interlocal contractual arrangements because any actions taken or not taken by a locality are made public. Other localities whose common concerns and shared beliefs can provide threats of collective sanction will enhance the credibility of punishments being imposed. A highly clustered network, it is argued, has the ability to impose constraints on localities that attempt to shirk or act opportunistically, and thus ensures the stability of metropolitan governance structure in the delivery of a particular service. This perspective shared many assumptions of a highly dense network structure that contributes to social capital (Coleman 1988; Putnam 1995). A highly clustered network provides extensive monitoring mechanisms, facilitates mutual reciprocity and trust, as well as ensuring that members in the network play by the rules of the game.

The information-bridging hypothesis suggests that the advantage of bridging information flow varies in terms of how easy or costly it is to transmit crucial information from the source to those that require the information. If vital information for today’s operation arrives a day late, then the information is worthless. So, a sparse network structure will emerge in the delivery of such goods. The perspective shares many assumptions that have been proposed by Granovetter’s (1973) “strength of weak ties” and Burt’s (1992) “structural holes” theories, which argue that information bridging provides

advantages when negotiating contracts. Within the context of this research, the notion of “information bridging” refers to two possibilities. First, when institutional ties developed by local governments are based on “contract networks” rather than “contact networks,” the hypothesis can be interpreted as the tangible and intangible resources being exchanged between multiple local governments. Such resources need to be coordinated in order to reach the others directly, and thus a centralized structure is observed. Second, bridging such resources allows localities not only to discover a broader set of possible gains from others that are inside and outside the region, but also opportunity to reach out and take independent risks in shaping joint agreements and thus reap the advantage of accumulation of resources that are not available within a highly-clustered network. Thus, a sparse network structure will be observed.

1.2.2 Specific Research Objectives

The substantive focus for this dissertation is the emergence and dynamic of governance structures in an increasingly important provision of collective goods--*public safety*--which once produced will be consumed by others at no additional marginal cost. The realm of public safety activities involving police are important for maintaining law and order to protect life and property through exchanging arrest information, emergency communication, and police patrolling. Most of these activities require a substantial amount of human and capital resources in local government budgets. The activities involving fire departments are important for fire suppression and prevention and require specialized machineries and extensive technical training for paid employees as well as volunteers. The emergency medical services involving ambulance services and paramedics are important for first responses during life threatening situations and disaster relief. They require extensive investment in communication systems involving a wide range of actors from hospitals and shelters and administrative organizations to multiple local provisional units such as the city police, county sheriff, and fire departments as well as state and federal agencies. Because the nature of collective goods is such that it is impossible to exclude others from its consumption once it is produced, joint supply is often difficult to realize at the local level.

Issues related to public safety have received much attention after the September 11 terrorist attacks and during the recent responses to Florida's four major hurricanes. Both these developments not only involved multiple local jurisdictions but also encompassed multiple local provisional units from the city police and county sheriff departments to emergency medical services and fire departments as well as state and federal agencies. They reflect the importance of metropolitan governance to structure and coordinate planning and respond to unforeseen natural or man-made disasters.

Indeed, in Florida there are a range of institutional arrangements used by municipal and county governments to coordinate their activities in the provision of services of mutual concern: from interlocal service agreements to contract and lease agreements, from memoranda of understanding to mutual aid agreements, to informal "gentlemen's handshake" and letters of agreement. Encouraged in part by state statutes, they provide one of the most common management tools used by local governments to govern their institutional ties (Sonenblum, Kirlin, & Ries 1977; Hirlinger & Morgan 1991) and provide the milieu in which we study the institutional choices local governments make in the provision of collective goods.

To capture the different governance structures governing institutional ties, we classify the multiple types of institutional arrangements into two general forms: restrictive and adaptive contractual arrangements. We argue that institutional designs are partly an effort of involved parties to reduce transaction costs that are the product of the properties of the services themselves, and partly a result of state statutes that allow mixed approaches to contractual arrangements. A relational contract or a contract that displays "adaptive features" is advantageous to a local government because it specifies the activities to be rendered without unnecessarily intruding on the authority of the other jurisdiction. It is nonobligatory, voluntary, and easily terminated without legal consequences to either party. In short, the adaptive form of interlocal contractual arrangements encompasses agreements that are permissive rather than obligatory when assistance is required by another jurisdiction. They have been generally used by local

governments in services areas such as emergency management, planning, and mutual aid assistants. Alternatively, municipal and county governments can choose a more legally binding contract in the presence of regional politics and avoid future disputes by using a more restrictive form of arrangement such as interlocal service agreements, contracts or leases. A restrictive form of interlocal contractual arrangements generally includes public safety services such as law enforcement, vehicle and building maintenance, and financial transfers.

There is evidence to suggest that when a specialized investment is required in the provision of public safety services, a restrictive form of institutional arrangement will be preferred; when measuring and monitoring the outcomes of services are relatively difficult, a more flexible or adaptive form of institutional arrangement will be preferred. We note that the classification of goods and services within the realm of public safety is important in reaching the following conclusion: there are some underlying relationships between the forms of institutional arrangements utilized by local governments to govern their institutional ties and the characteristics of goods and services. Our classification of goods and services for public safety relied on Brown and Potoski's typology (2003), where they broadly defined goods and services as having two distinctive dimensions: asset specificity and service measurability problems. The former is defined as the specialized investment required in providing the services; the latter refers to the difficulties in contracting with other governmental bodies to measure and monitor the outcome of the services.

When local governments used more adaptive contractual arrangements to govern their institutional ties, we anticipate a highly dense or close knit governance structure to emerge in the delivery of such services. On the other hand, when local governments used more restrictive features of contractual arrangement, we anticipate a service delivery system that displays a sparse or less densely connected institutional ties form of governance structure to emerge.

According to the information-bridging hypothesis, the benefits of a sparse governance structure flows to others in the network through a central actor. When local governments use restrictive contractual arrangements, they are motivated to reduce transaction costs that are associated with the difficulties in measuring a specific service outcome and the high probability that the consequences of inaction may lead to negative externalities. Given this dilemma, a central actor plays an important role in coordinating and thus reducing the problems of information asymmetry and uncertainty. The interlocal coordination problems due to multiple preferences and information asymmetry are minimized when extensive information bridging across multiple jurisdictions emerges through a more centralized governance structure. If an actor can coordinate region-wide actions, they all have the opportunity to maximize joint returns.

According to the information-bridging hypothesis, the benefits of a sparse governance structure can also flow to local governments that are governed through adaptive contractual arrangements. These forms of arrangements are motivated to safeguard local government's individual transaction if the outcomes of the transaction are difficult to measure and the asset specificity involved is high. Under this situation, local governments can choose amongst alternative service providers by having clearly written contracts regarding the services provision. Again, the interlocal coordination problems due to multiple preferences and information asymmetry can be minimized through bridging preferences across multiple jurisdictions but the governance structure is less central (non-hierarchical) displaying a sparse network structure.

On the other hand, according to the credibility-clustering hypothesis, adaptive contractual arrangements which are generally established to govern institutional ties involved in outcomes that are difficult to measure tend to display tightly or highly clustered ties to maximize joint returns. Outcomes of particular services that are difficult to measure present a greater risk of free riding by those who do not meet the standard requirements spelled out in their contractual arrangements. In order to constrain such opportunistic behaviors and minimize cooperation problem, threats of collective sanction, monitoring, and enforcement can be observed through a governance structure that

displays tightly or highly-clustered ties. This is contrary to the information-bridging hypothesis, which predicts a sparse governance structure for an institutional arrangement that relies on adaptive contractual arrangements.

However, when outcomes are easily measured but asset specificity is high, local governments generally prefer to form restrictive contractual arrangements. The problem of monitoring is less of a problem since local governments can clearly specify the outcome of the contract. Local governments can also choose how to govern the transaction, i.e., either “to make” or “to buy” the service in the public good market. There will be those that decide to produce the service “in-house” while others might decide to go to the market and buy the service. Had credibility been crucial to the implementation of the service, local governments would be connected to at least another local jurisdiction or organization to ensure (or confirm) credibility. We can expect a sparse metropolitan governance structure to harbor actors that can act independently of others when delivering collective goods. At the minimum, two entities might cooperate and exchange information; otherwise they act like solo producers and providers, able to deliver service without requiring information from others or without the cooperation from the rest of the actors in the region.

1.3 THE DYNAMIC OF METROPOLITAN GOVERNANCE

We view a metropolitan area as buzzing with contractual activities and that these activities are nested at different levels in the network arena. Local governments involved in contractual activities are connected through their contractual arrangements--forming what we refer to as institutional ties. An interconnected network of institutional ties represents a pattern of relations between local governments. Such a network structure is not static but evolves over time. These changes can be purely structural--explained by an endogenous mechanism such as a reciprocity or transitivity form of network structure. There are also other factors that might influence network changes such as a local government’s political institutions (form of government or levels of government) and/or attributes such as geographical proximity and demographic characteristics. The dynamic of metropolitan governance refers to such a change in network formation and occurs

when the interconnectedness of a set of institutional ties, together with relevant attributes or characteristics of local governments have changed or evolved simultaneously in a dynamic process. In other words, institutional ties established in metropolitan areas change and evolve gradually, explained in part by the social actors' relations and the characteristics of political institutions and demographic attributes.

In the simplest example of a specific stated space or action arena of metropolitan governance, consider two cities: City A and City B. Here, the action arena consists of four possible configurations of directed dyadic ties: (1) City A and City B are not forming any contractual ties, (2) City A initiates a contractual arrangement with City B such that the dyadic relations can be represented as $\text{City A} \rightarrow \text{City B}$, (3) City B initiates the contractual arrangement with City A such that their dyadic relations can be represented as $\text{City B} \rightarrow \text{City A}$, and (4) City A and City B have a mutual agreement about the contractual arrangement and thus form a mutual dyadic relationship such that $\text{City A} \leftrightarrow \text{City B}$. But, metropolitan governance is a complex phenomenon. When increasing the number of local governments forming institutional ties in a metropolitan area by n number of actors, the number of possible configurations rises faster than exponentially such that for a set of six local governments establishing multiple institutional ties, the action arena already contains more than a million possible configurations of ties (and the rules accompanying these relationships). The main task here is to determine the factors that explain the process of change involved in the formation of these ties for a specific action arena.

To illustrate the type of research this dissertation is undertaking, take for example the explanation of the theories of institutional collective action for the emergence of metropolitan governance. In this body of literature, there is an implicit assumption that there is a natural interdependence between the formation of institutional ties and the characteristics of an individual unit of local governments. That is, the patterns of institutional ties are auto-correlated with demographically or behaviorally similar local governments rather than among dissimilar local governments. For example, the theories of institutional collective action argue that suburbs with similar characteristics generally

prefer to form institutional ties with those that have similar preferences to reduce uncertainty associated with credible commitment and information asymmetry. According to the credibility-clustering hypothesis, it is easier to build trust or more rewarding for appointed or elected officials to establish ties with a similar institution. In this situation, institutional ties are established between local governments according to similarity in the characteristics of local governments. On the other hand, the causality mechanism can also be explained from an opposite angle. The formation of close knit ties among similar local governments occurs because they are influenced by the preferences/decisions of other localities around them. A local government's decision to establish institutional ties with others is based on its attempt to match other local governments' preferences/characteristics to its own. This imitation process is what the literature refers to as "social influence."

Implicit in such explanations for example, is often an assumption about change over time. For the theories of institutional collective action, the selection process (that is the selection of partners with which to establish ties) requires the institutional ties to be dynamic or static; the social influence hypothesis requires the characteristics or preference of local governments to be dynamic but there is no requirement that the institutional ties be dynamic. The dynamic of metropolitan governance can be analyzed using the actor-centered model developed by Snijders et al. (2005), where both the formation of institutional ties and the evolutionary change of characteristics of local governments are treated simultaneously. Both dynamic processes could theoretically occur. In this situation, it becomes an issue of empirical investigation to determine which of the two phenomena better explains the pattern of institutional ties forming metropolitan governance by assessing the relative importance of either mechanism.

1.4 METROPOLITAN GOVERNANCE STRUCTURE AND NETWORK ANALYSIS

Following the basic network analysis approach, a metropolitan governance structure can be represented as an $N \times N$ matrix reporting all contractual arrangements among all N actors. The entry i, j equals 0 if actor i has no ties with actor j , and can equal

1 to indicate the presence of institutional ties. The actors are municipal and county governments. An introduction to the use of this type of model is given in Wasserman and Faust (1994), and a more recent development in this area is presented in Carrington et al. (2005). This dissertation is concerned with data structure consisting of two action arenas in the realm of public safety: restrictive and adaptive forms of interlocal contractual arrangement defined on a given set of N actors, changing over time, along $H \geq 1$ changing actor attributes. The set of relations will be referred to as institutional ties forming a network structure representing metropolitan governance. The attributes are referred to as behavior or actor characteristics (Snijders et al. 2005).

The dynamic process of metropolitan governance is regarded here as an emergence of institutional ties resulting from local government's decisions to enter into contractual arrangements with other local governments in the provision of public safety. Florida's four largest metropolitan areas are used to model the formation of metropolitan governance: Tampa-St Petersburg-Clearwater MSA, Miami-Broward-Ft Lauderdale MSA, Orlando MSA, and Duval-Jacksonville MSA. Local governments' decisions to form, maintain, or break institutional ties are modeled based upon an actor-centered model for the network-behavioral co-evolution approach developed by Snijders et al. (2005) and analyzed using specialized software called SIENA (Simulation Investigation for Empirical Network Analysis).

1.5 SIGNIFICANCE OF THIS RESEARCH

Most research in urban studies and public administration tends to focus on the normative value rather than directly use network analysis to test the factors explaining the emergence of metropolitan governance structure (O'Toole 1997; Agranoff & McGuire 2003; Thurmaier & Wood 2002). This dissertation extends the foundation of urban studies and public administration by empirically testing the roles local governments played in bridging information and building credibility (amongst seemingly independent units of local government). Through interlocal contractual arrangements in the provision of collective goods that form institutional ties and thus the structure of metropolitan governance, local governments can act strategically to resolve collective action problems.

The social position of local governments within the structure of metropolitan governance matters in improving relative efficiency of local government in the delivery of public services. It provides opportunities to negotiate mutual concerns and establish institutional ties that otherwise would not take place and makes available information about each other's conduct that can enhance credible commitments.

This research also contributes to methodological development in the field of interlocal cooperation. In the field of public administration most methodological approaches generally assume that networks are static, yet few would argue against the notion that networks are inherently dynamic. Monge and Contractor (2003), for example, argue that social network analysis needs to move beyond describing the properties of networks to explaining their emergence.

This dissertation also illustrates the relevance of network analysis in studying interlocal cooperation using longitudinal data. That is, this research capitalizes on the theories of institutional collective action and actor-oriented models by empirically examining a complementarity between, on the one hand, simulation from complex models for dynamic and interactive network-based processes to understanding interlocal cooperation, and, on the other, the formulation of institutional ties in such a way that would allow models' parameters to be estimated from observed data. The potential value of developing, estimating, and evaluating network models in conjunction with empirical data is evident in four major metropolitan areas in Florida. This research makes contributions by using actor-oriented models to examine the dynamic of metropolitan governance as a set of institutional ties forming through interlocal contractual arrangements and utilizing the theories of institutional collective action to identify the contextual factors that explain the emergence of metropolitan governance. That is, it attempts to close the gap between what can be hypothesized from simulation-based explorations of theoretical positions, and what can be verified empirically using interlocal contractual arrangement data from Florida in the realm of public safety between 1988 and 2003.

The research questions contribute to the theoretical development in the following ways: First, the research questions examined the contextual factors that explain the formation of metropolitan governance through multilevel analysis such that the effects of network structures are assessed in conjunction with the characteristics of local communities. The longitudinal models employ multilevel analysis by considering (1) local government's interactions beyond dyadic relations, (2) their covariate similarity in terms of political and institutional characteristics as well as economic and social characteristics, and (3) the endogenous factors explaining the opportunity for metropolitan governance formation in terms of network structures such as the number of dense triplets and betweenness. Second, the research questions examined the external or exogenous factors such as the number of multilateral agreements, the characteristics of institutional factors and attributes of local communities in influencing the opportunity of local governments forming institutional ties at the dyadic level controlling for distance at the metropolitan areas. Finally, the research questions seek to examine the formation of metropolitan governance by making predictions about its emergence in terms of two seemingly different network spaces for solving particular types of institutional collective action problems: interlocal cooperation and coordination problems.

By examining the formation of metropolitan governance in terms of interlocal contractual arrangements, this research also makes a contribution to the study of service deliveries in urban areas. For example, the traditional Regionalists have often argued for a single-tier or two-tier consolidated government to resolve metropolitan problems (Savitch & Vogel 1996; Dodge 1996). Others have argued for political fragmentation as a means for local governments to delivery urban services efficiently (Feiock 2004). Consequently, the debate over the best approach to deliver urban services has generally centered on whether metropolitan governance structure should be based upon a consolidated government or fragmented governments. Few of these studies actually acknowledge the importance of interlocal contractual arrangements as one of many institutional arrangements used by local governments to govern their transactions in the delivery of urban services across multiple jurisdictions. This research attempts to fill this theoretical gap in the study of service delivery structure in urban areas.

1.6 THE OUTLINE OF THIS DISSERTATION

This dissertation is divided into three parts. The first part discusses the importance of interlocal contractual arrangements and how they can be extended to understand metropolitan governance. The second part discusses and tests local governments' preferences for certain types of contractual arrangements in Florida. The final part of this dissertation develops and extends the institutional collective action framework by including network analysis. The framework is applied to four major metropolitan areas in Florida to test the two general hypotheses discussed above: the credibility-clustering and information-bridging hypotheses.

In the next chapter, we explore the importance of metropolitan governance and the challenges local governments face when making individual contributions to the formation of metropolitan governance. That is, the focus is on the issue that addresses how seemingly independent and autonomous units of local government would voluntarily cooperate to provide services to the public. In doing so, we first illustrate two forms of institutional arrangements as examples of multiple ways metropolitan governance could be understood: regional institutions and interlocal contractual arrangements. The main point of this section is to illustrate the benefits each could provide when local governments adopt a particular form of institutional arrangement. These examples are offered here to highlight the relationship between collective benefits and selective benefits, which direct out attention to why local governments may choose one arrangement over another. The second part of this chapter provides a brief overview of the traditional theoretical landscape before introducing the current debate about the idea of "metropolitan governance without government." We position our research questions within the context of the current debate and differentiate our understanding of metropolitan governance by introducing the institutional collective action framework.

Chapter 3 focuses on interlocal contractual arrangements, that is, to develop an explanatory mechanism by which an interlocal contractual arrangement initially developed by two or more local governments can foster interlocal cooperation. This entails answering the first set of questions posed in Chapter 2: What are the many forms

of institutional arrangements used by local governments to govern their relations? Through what process do institutional arrangements become acceptable by involved parties to govern their relations? While the first question determines the general classification and trend of interlocal contractual arrangements, the second question develops a contractual perspective on the mechanism explaining a local government's decision to enter into a contractual arrangement with another jurisdiction. We argue that there are many types of interlocal contractual arrangements used by local governments to govern their transactions, but they can be conceptualized into two forms: restrictive and adaptive forms of contractual arrangements. Here, we argue that forms of interlocal contractual arrangement are institutional designs partly as an effort of the involved parties to reduce transaction costs that are the product of the properties of the arrangements themselves; and partly by state statutes that allowed mixed approaches to be used by local governments. The main objective of Chapter 3 is to provide the theoretical ground for classifying interlocal contractual arrangements.

The range of interlocal contractual arrangements in the realm of public safety in Florida provides a research opportunity to examine the extent by which these arrangements have been used by local governments. Chapter 4 has two parts: the first part begins by exploring the politics behind local government's decisions to enter into interlocal contractual arrangements. It argues that getting local governments to enter into contractual arrangements with other jurisdictions given the potential loss of local autonomy and control in meeting community needs is difficult without the flexibility in state statutes to reduce the costs of developing and maintaining such arrangements. The chapter proceeds by reviewing and discussing Florida's statutory framework and some of the major statutes that govern interlocal cooperation in the provision of public safety. Here, we argue that in Florida, local government's decisions to enter into a particular form of interlocal contractual arrangement are partly an effort of the involved parties to reduce transaction costs and that these decisions are partly the by-products of state statutes that allow mixed approaches to contractual arrangements.

The second part of Chapter 4 develops testable hypotheses based on the arguments presented in Chapters 3. Utilizing the data compiled by the Florida Department of Community Affairs, we identified 2,251 different types of contractual arrangements in the provision of public safety. Our empirical results show that there is a positive and significant association between city-county relations and the form of interlocal contractual arrangement. There is also evidence to suggest that when a specialized investment is required in the provision of public safety, a restrictive form of institutional arrangement will be preferred; and when measuring and monitoring the outcomes of the services are relatively difficult, a more flexible or adaptive form of institutional arrangement will be preferred. We note that within the realm of public safety, there are some underlying relationships between the forms of institutional arrangements utilized by local governments to govern their transactions and the characteristics of goods and services. Homogeneity of a single functional service area represents similar policy preferences affecting the transaction costs of negotiating, operating, and enforcing contractual arrangements; so did the number of collaborators involved in an agreement. This chapter also discusses the major findings and their implications for the general objective of this dissertation. That is, on the formation of metropolitan governance.

In Chapter 5, we advance the theory of institutional collective action by using network analysis as explanation for the formation of metropolitan governance. This chapter builds upon the different forms of contractual arrangements discussed in the previous chapters. The action arena that defines the formation of local governments' institutional ties is also articulated. The emphasis is on local government relations--municipal and county governments. Because this dissertation is interested in the mechanism that connects the "*what*" with the "*how*" and "*why*", the main objective is to develop the theoretical framework to answer the second set of questions of this dissertation. That is, what forms of metropolitan governance structures are important for collective action problems? How have the different forms of metropolitan governance evolved over time? Why does local government prefer one form and not another to resolve institutional collective action problems? These questions focus on the mechanisms connecting/explaining the benefits of particular contractual arrangements

forming metropolitan governance with the intentions of local governments. Several testable hypotheses and expected causal directions are also presented in this chapter.

In Chapter 6, we present the data and research design to examine the formation of metropolitan governance structures, which we believe are responding to particular dilemmas of institutional collective action. We limit our study to the four largest metropolitan areas in Florida and assess the formation of institutional ties within the political boundaries of counties that fall in these areas. : Miami-Fort Lauderdale-West Palm Beach MSA, Tampa-St Petersburg-Clearwater MSA, Orlando-Kissimmee MSA, and Duval-Jacksonville MSA. They are the largest and the most densely populated metropolitan areas in Florida. The chapter is organized as follows. First, we provide a brief overview of their geographical, demographic, and political structure characteristics, and public safety infrastructure. We then present the research design and data used in identifying the number of local governments included in this chapter. The application of the actor-oriented model and SIENA are presented before discussing the implications of our findings.

Chapter 7 concludes this research.

CHAPTER 2

METROPOLITAN GOVERNANCE

Despite the stability of the local governance system, and numerous volumes of academic work and practitioners' accounts of the patterns of interlocal relations, it still remains unclear how and to what extent the separate jurisdictions within urban areas actually coordinate their activities and thus cooperate in delivering collective goods. How does a seemingly fragmented system of urban political structure consist of many formally autonomous political units located in very close proximity to one another and operate as if they are a single integrated system?

One way to examine these questions is to explore the importance of metropolitan governance by treating metropolitan governance as a process, that is, metropolitan governance as a process that structures and regulates actors' behaviors. It guides metropolitan communities' interactions, so that when conducting political or economic transactions, individual actors know (or can learn easily) how to behave and administer their tasks. The process also provides a means for "identifying and diagnosing problems, elucidating information, arraying and assessing alternatives, and crafting rule-based solutions, as well as monitoring those arrangements for both implementation and possible alteration" (Oakerson 2004). It fosters the best local efforts in trying to solve problems in their communities either by altering existing institutional arrangements or creating new ones. Similar to what Ostrom (1990) called "institutional arrangements"--rules about rules governing behaviors--metropolitan governance can be studied as a form of institutional arrangement governing interactions of local governments across jurisdictional boundaries in the production and provision of collective goods.

When local governments work collaboratively, governance determines their institutional relations and their on-going affairs; it sets standards of behavior among parties in the collaboration efforts; and it constitutes an important source for transmission of organizational and social knowledge and information about the continued working relationships between one generation of public officials and the next. In this sense, governance evolves over time, as in common laws, customs, norms, or social values; or it can be intentionally designed as in municipal charters and the various forms of interlocal contractual arrangements. Governance forms the base upon which a vast range of informal and formal ties are established and institutionalized over time to minimize uncertainty and to coordinate social, economic, and political exchanges in metropolitan areas.

Two features are inherent in characterizing metropolitan governance. First, it is about a set of rules that permits or sanctions social interactions. When local governments conduct all aspects of interjurisdictional businesses, they produce rules that structure their interactions. These rules determine how interlocal relations or institutional ties are likely to be governed. Second, for the set of rules to be regarded as governance, the knowledge of these rules must be shared by members of the relevant community (North 1990; Knight 1992; Ostrom 1990). To interact and conduct exchanges with other jurisdictions either through ad hoc regional committees, councils of governments, or interlocal agreements is to produce shared understanding of the institutional arrangements crucial for managing and coordinating their transactions. Within a set of legal and social institutions, such institutional arrangements foster not only communication but also develop shared norms and mutual trust among local governments.

2.1 THE BENEFITS OF GOVERNANCE IN THE PROVISION OF COLLECTIVE GOODS

The term “collective goods,” or in economics often referred to as “public goods,” is a classification of goods that is hard or even impossible to produce for private profit. By definition, a collective good possesses two properties: (1) Non-rivalrous--its benefits

fail to exhibit consumption scarcity; once it has been produced, everyone can benefit from it *without diminishing* other's enjoyment. (2) Non-excludable--once it has been produced, it is very difficult, if not impossible, to prevent *access* to the goods. Therefore, for collective goods that produce positive benefits, every individual has an incentive to free ride without paying for them and without sharing the efforts required to supply them.

The most common explanation for the need for governments to produce certain goods and services is that collective goods would not be adequately provided by the private sector. Public safety, it is argued, could not be produced by profit-seeking firms because it would not be profitable. Once the safety services are produced, they cannot very easily be withheld from those who do not pay. By the same token, it might be difficult to withhold the use of embankments controlling against flood or increase in sea level due to a hurricane.

However, the supply of collective goods poses serious dilemmas for local governments in urban economies (Savas 2000). First, collective goods are relatively hard to measure making it difficult for local governments to estimate the quantity that should be supplied and the cost that is associated with the supply efforts. It is almost impossible to charge users for consuming the goods. Once they are produced, they are consumed not only by local residents but also others who are residing in neighboring jurisdictions regardless of the level of quantity or quality supplied. Second, insofar as the supply of collective goods would not pose a serious problem in a homogenous population, in a heterogeneous population the amount to be supplied and the cost of supplying them are often involved and determined by political process. Third, the problem of determining who should be responsible in supplying the goods is one that is most contagious. For example, although there are some agreements that a collective assessment such as taxes is required for the supply of collective goods, the problem of who should be responsible and who should be charged to supply them is often controversial.

The focus on the provision of collective goods and the institutional benefits of such a provision through collective action is grounded in the central importance of

cooperation among local governments. One of the many cooperative arrangements is by establishing regional institutions such as Councils of Governments or Special Purpose Governments, which require some forms of statutory authorization. Other forms of regional institutions include public-private partnerships, or regional coalitions or alliances (Mitchell-Weaver, Miller, & Deal 2000; Savitch & Vogel 1996). Alternatively, institutional arrangements can also include crafting contractual arrangements or interlocal agreements that provide a legal framework for local governments to negotiate the provision of collective goods within established legal or statutory limits (Friesema 1970, 1971; Atkins 1997; Nunn & Rosentraub 1997). The former is similar to an organizational structure that binds local governments together--as a coalition with some common purposes. The underlying rules structure them to act collectively as agents of change for the development, maintenance, and transformation of metropolitan governance. The latter, on the other hand, consists of legal rights of local governments jointly providing or producing collective goods and services. These rights are spelled out by contractual rules. They designate local government's duties and responsibilities; they define the extent to which services are delivered to residents. The designation of these rules facilitates a wide range of interlocal transactions, from economic exchange to the peaceful resolution of disputes involving the transactions.

On what follows, I briefly discuss the benefits provided by a variety of institutional arrangements used by local governments to structure their relations in the provision of collective goods. These examples are offered to highlight the relationships between collective benefits and selective incentives. The emphasis directs our attention to why and how local governments seek to establish particular institutional arrangements. Here, I argue that institutional design must take into account the importance of selective incentives as a mean to encourage local governments to work collaboratively.

2.1.1 The Benefits of Regional Institutions in Facilitating Interlocal Cooperation

In most metropolitan areas, the gains from region-wide policy coordination resulting from interjurisdictional cooperation arguably can be seen through the formation

of regional institutions. They provide--according to the Neo-progressive movement--examples of effective regional governance to resolve region-wide concerns (Mitchell-Weaver, Miller, & Deal 2000; Savitch & Vogel 1996). The distinction between regional institutions lies in the rules designating them by state statutes and/or local government ordinances. These sets of constitutional rules, while authorizing them to perform specific services, might also prohibit their involvement in others. They reflect a different type of governance process, a process that defines their membership and primary functions (Gerber & Gibson 2005).

Regional councils of governments are a form of regional institutions that can facilitate interlocal cooperation in the provision of collective goods. They pursue region-wide policies in a variety of areas including transportation, economic development, environmental quality, land use, job training, housing and community development, emergency and disaster services, data collection and analysis, technical support, and social services. For example, according to the National Association of Regional Councils' (NARC) 1998 Directory of the 501 regional councils: 322 are designated by the U.S. Department of Commerce as economic development districts; 304 serve as clearinghouses for federal and state aid applications; 245 engage in land use planning; 227 assist in allocating federal and state revolving loan funds for wastewater and drinking water facilities; 181 have been designated metropolitan planning organizations (MPOs) for regional transportation (53 percent of the MPO total); and 163 are organizations on aging, providing direct or indirect services to the elderly (Gerber & Gibson 2005).

Councils of Governments are generally comprised of multi-purpose, multi-jurisdictional public organizations created through state legislation. Designated by state statutes, the constitutional rules establishing Councils of Governments have important effects on the relationships of local governments within the metropolitan communities. They define who the voting members are in a regional council; they define a division of specialized functional area; they establish duties and responsibilities between council members and those outside the council; and they set general planning procedures for region-wide activities. The establishment of rules governing regional councils of

government benefits the interactions and exchanges in the whole metropolitan community in many ways (Savitch & Vogel 1996). For example, to the extent that a local government is concerned with its own community welfare (such as housing, traffic congestion or crime), well-defined duties and responsibilities with regard to regional coordination policies can also simplify the task of providing general welfare services. To the extent that these rules also provide stability and continuation of standardized welfare services to communities and, most importantly, cooperative behavior among regional council members, similar sets of rules can stabilize and facilitate the satisfaction of those social and economic needs. These rules tell members for whom they are responsible and on whom they can rely in satisfying their communities' welfare and economic needs. Similar logic can also structure administrative coordination across multiple jurisdictions such as public-private partnerships or regional alliances (often registered as nonprofit organizations or government-sponsored nonprofits).

The main point here is that there is more than one way to design regional institutions to affect the formation of metropolitan governance, and this usually is based upon the assumption about the role played by local governments in its formation. This has practical implications for the explanations of metropolitan governance, i.e., its institutional development, maintenance, and change (Hooghe & Marks 2002). For example, one stream of literature advocates regional institutions as a mechanism that could encourage local governments to work collaboratively for collective benefits, not only with different levels of government or other local governments but also across sectors (Grell & Gappert 1993; Mitchell-Weaver, Miller, & Deal 2000; Feldman & Khademian 2002; Henry 2004; Wallis 1994; Wikstrom 2002). Such a mechanism has been described as a process of steering, influencing, and balancing the interactions between public and private sectors (Wood 2002). Metropolitan governance as a result of such institutional design forms the rules of the game within a particular system--a medium through which involved actors can act and try to use different set of agreed rules in accordance with their own objectives and interests (Jessop 1995; Kooiman 1993; Oakerson 2004). Although such institutional arrangements invariably promise to promote

regional economic growth and fiscal health, there is little empirical evidence to support these general beliefs.

Furthermore, regional institutions such as regional councils of governments are often perceived as a weak form of metropolitan governance for several reasons. First, depending upon whether they are a “creature of the state” or a “creature of local governments,” regional institutions are often confronted by issues of legitimacy, i.e., on how much governing or regulating power it has over individual cities and their internal policies (Miller 2002). Existing local governments are often reluctant to cede much authority to regional institutions and generally resent additional layers of governments (Post 2002; Stein 1980). Second, while some regional councils of governments merely provide a forum promoting interlocal cooperation through planning and bringing together participants from other sectors to foster regional cooperation, others are generally voluntary, collaborative, and consensus-based forums where members come together to exchange information, but do not necessarily formulate or implement solutions to a region-wide problem. This is one of many predicaments of institutional design that focuses on collective benefits without taking into account the importance of selective incentives. It has a questionable capacity to design, implement, maintain, and operate as an effective governance structure for the region as a whole because there would be little incentive to an individual locality to make a contribution to the success of the collective.

These impediments are exacerbated by another problem: individual locality incentives to participate in regional institutions represent a collective action problem because they do not reflect the full benefits since additional effort increases the information and reputation of all others in the collective without any additional investment by the others. Furthermore, region-wide collaborative efforts developed either through state or federal funding, or mandates that could reduce the transaction costs in forming regional wide planning and implementation efforts, were actually short lived. Many of them faded away as soon as the programs requiring their formation were abolished. Moreover, collective efforts are actually public goods that aid the region as a whole more than they aid any individual localities (Stein 1980). Here, the decision-

making process will be dominated by a lack of individual incentive to contribute to the effort of the collective, and thus will lead to an underinvestment in region-wide efforts to resolve regional concerns in such policy areas as income disparities, housing, and the institutional collective action problems.

2.1.2 The Benefits of Interlocal Contractual Arrangements in Enhancing Interlocal Cooperation

The inherent difficulties in achieving regional-wide cooperation through regional institutions have led many to consider alternative ways to promote cooperation among metropolitan area governments. Even within a broad sketch of institutional arrangements, there are other forms of arrangements that can enhance interlocal cooperation, i.e., dyadic interactions between local governments or, in some cases, triadic ties in a metropolitan area (Friesema 1970, 1971; Atkins 1997; Nunn & Rosentraub 1997). For example, institutional arrangements may also include interlocal contractual arrangements. They vary from interlocal service agreements, to contract and lease agreements, from memoranda of understanding to mutual aid agreements, to an informal “gentlemen’s handshake” and letters of agreement. Some of these agreements involve only two local governments (bilateral agreement); and in some circumstance involve multiple units of governments (multilateral agreements). Regardless of their multiple legal definitions, they act as mechanisms to cope with various magnitudes of uncertainty because they: (1) provide information about how actors are expected to act in a particular situation; (2) can be recognized by involved parties in the action arena as rules to conform to; and (3) structure strategic choices in such a way as to produce equitable outcomes (Ostrom 1990; Knight 1992; Maser 1998; Heckathorn & Maser 1987). They promulgate a variety of standards of conduct targeted to produce collective benefits by stipulating actions to be carried out by involved parties sometime in the future and lay out rewards and penalties for compliance or failure to comply.

Without these multiple forms of institutional arrangements to guide local governments’ cooperative actions, the myriad of exchanges in the provision of collective

goods between local governments and other actors in a metropolitan area would be difficult, if not impossible, because of free rider problems. Take the contractual arrangements that established institutional ties between local governments as an example. Basic economic transactions require some initial definition of rights so that the participants in the transaction will know what they can exchange and what they are getting in return. Without these initial definitions the stability of exchange would be threatened and the potential gains from exchange might be lost (Coase 1960). To the extent that local governments are able to participate and benefit from the exchange, the benefits actually accrue for all parties involved in the agreement if all contribute to the efforts of others. But contracts are often incomplete--in the sense that no one can anticipate changes in future circumstances. Rules governing incomplete contracts are often established during negotiations to anticipate disputes arising from transactions that cut across local political boundaries. Here, the rules have the effect of establishing a criterion for dispute resolution that prevents the potential disputants from diminishing the value of a transaction in the course of their distributional conflict (Knight 1992).

The advantage of having multiple forms of contractual arrangements is that they make possible adaptive and more flexible arrangements to conduct and govern transactions in order to mitigate different forms of uncertainties; they also direct us to examine the impact they have on collective benefits in the provision of collective goods (Maser 1998; Heckathorn & Maser 1987). For although governance in metropolitan areas needs stability to achieve the benefits of acting together, contractual arrangements in metropolitan areas can take many other forms. For example, there are a number of ways to institutionalize the rights, duties, responsibilities, procedures, methods of action and the like so that any additional collective benefits through interlocal coordination can be realized (Atkins 1997; Nunn & Rosentraub 1997; Savitch & Vogel 1996). Consider the following example. Some rules are crafted by local government officials to influence the strategic choices of other local governments. They could choose to enter into bilateral or multilateral contracts with other jurisdictions; but such contractual agreements need not be based on formal contractual arrangements. Informal arrangement is also an institutional option although such a strategy may be legally risky.

The various forms of interlocal contractual arrangements and the benefits they bring to structuring interlocal relations allow us to conceptualize local governments' relations as institutional ties. They highlight why multiple forms of contractual arrangements come into existence and how they evolve as fundamentally influenced by the governance framework that gave them structure, function, personnel, and finances. This sketch of various forms of contractual arrangements also gives us some sense of the contributions that these institutions make to the coordination, cooperation, and exchange involved between local governments. In short, a configuration of interlocal contractual arrangements important for institutional ties forms the core of metropolitan governance, making it easier for local governments to cooperate.

In the world of collective goods, where production and provision are increasingly interrelated and cutting across political boundaries, local government actions are becoming interdependent. Metropolitan governance provides a means for institutional collective action. It allows local governments to produce benefits that they would fail to achieve alone. In some contexts, these benefits are called “gain from cooperation”; in others, “advantages of coordination.” The stability of a set of rules governing contractual arrangements provides the knowledge that such stable relationships are shared by all and enables the types of behaviors necessary to achieve these benefits. Regional institutions, although useful for regional coordination, could not effectively facilitate regional cooperation unless some forms of selective incentives are also forthcoming.

However, the formation of effective interlocal cooperation based on selective incentive is constrained by the costs of developing and maintaining contractual arrangements, which according to the institutional collective action framework are the *transaction costs* of forming institutional ties. There are search costs involved when locating and finding appropriate provision units. There are also monitoring and legal costs to maintain standards of service provisions across local jurisdictions. It is uncertain whether legal agreements or interlocal contractual arrangements will be challenged through a litigation process (Reynolds 2003). The transaction costs of establishing

institutional ties can also be exacerbated by state legal doctrines of nondelegation (Gillette 2001). Dillon's Rule, for example, precludes local governments from engaging in activities for which they have not received explicit authority from the state legislature. They limit the capacity of localities to overcome contacting costs and the threat of strategic behavior.

Summary

These two examples of metropolitan governance, i.e., regional institutions and multiple types of interlocal contractual arrangements, are offered to highlight the relationships between collective benefits and selective incentives; the relations embedded in the interactions of local governments are displayed by different sets of governance. While some scholars may regard regional institutions as a form of metropolitan governance that should be encouraged either through "state and federal powers to reinforce local moves in the direction of regional cooperation and consolidation" (Mitchell-Weaver et al 2000: 851), others have proposed a more gradual and adaptive approach, i.e., through different sets of contractual arrangements that could best provide them with selective incentives to cooperate. This emphasis directs our attention to the reasons local governments actually seek to establish particular institutional arrangements and how such arrangements could provide them with selective incentives. Our approach emphasizes the importance of collective as well as selective benefits of metropolitan governance.

2.2 OVERVIEW OF THE THEORETICAL LANDSCAPE

Extend work examines many of the institutions for regional governance, but do so from different theoretical perspective, i.e., studies of metropolitan governance focus on different aspects of the same features of institutional arrangements. Public choice theorists advocating for small autonomous and multiple units of local governments are interested in the efficiency of institutional arrangements governing local government transactions, the pluralistic nature of the decision-making process, and such issues as allocation of resources both in terms of productivity and allocative efficiency (Ostrom, Tiebout, & Warren 1961; Oakerson 2004; Ostrom 1989, 1992; Tiebout 1956; Buchanan

1965; Lindblom 1965). A metropolitan area and its communities will collectively benefit from the competitive nature of the provision of public goods and the set of rules used to govern these transactions.

The Marxists or Neo-Marxists focus on status and social ordering between uneven development and power structure (Harvey 1975; Hill 1974; Mollenkopf 1975; Gordon 1978). At the micro-level they have studied the existence of coalitions or the compositions of regimes and political machines in urban settings (Logan & Molotch 1987; Stone 1989). Although little emphasis has been put on the role of norms, perception, cognition, and the motivation of actors to participate in coalitions, they make predictions about the discriminating effects of institutional arrangements resulting from a fragmented political system. That is, the fragmented political system conditions class conflict between different groups of economic and political coalitions over the distributional benefits of economic production (Markusen 1976; Hoch 1984). However, other forms of governance structure used by these competing groups of actors have seldom been analyzed. The Neo-Marxists believe that metropolitan areas are in an unresolvable crisis because of the discriminating effects of competition (Yates 1978; Jaret 1983). They believe that revolutionary change between two competing forces of production is the only solution rejecting the general arguments that development and change of metropolitan governance is a gradual and mutually adaptive process.

The traditional Regionalists, following Neo-Marxist arguments, argued for radical reforms, opting for a single-tier or two-tier consolidated government to resolve the metropolitan crisis (Studenski 1930; Jones 1942; Wood 1961; Martin 1963; Schmandt & Standing 1965; Yates 1978; Nieman 1976). Others have argued that such systems of governing are politically and economically unfeasible (Carr & Feiock 2004); they are rarely successful given the conflicting interests and autonomy issues involving local governments. Political fragmentation allows residents of smaller municipalities to avoid being subsumed into larger political units, such that any attempt to centralize decision-making to another political unit would dilute their ability to control their local area. Hence, any form of political reform often faced local opposition. The public choice

theorists also criticized a centralized political system as a hierarchical maze that only leads to inefficiency in service provision (Ostrom et al. 1961; Bish 1971). They argue that a more politically fragmented metropolitan area promotes efficiency in the region because residents, functioning as municipal consumers, choose from among different bundles of services and tax rates that the various municipalities offer (Tiebout 1956; Buchanan 1970; Peterson 1981).

The theoretical debate over the form of metropolitan political systems suggests that different forms of institutional arrangements are expected to generate distinct institutional outcomes (Nelson 1990; Nelson & Foster 1999). The relative merits of those institutional outcomes are at the heart of the fragmentation-consolidation debate. However, most recent recommendations favor some form of regional institutions that can encourage regional integration (Barnes & Ledebur 1998; Dente 1990; Dodge 1996; Miller 2002; Orfield 1997; Phares 2004; Savitch & Vogel 1996; Wallis 1993, 1994). These recommendations invariably promise to promote the region's economic and fiscal health by introducing regional institutions and promoting regional cooperation between central cities and their suburbs. For example, recently, the traditional debate about the metropolitan crisis has shifted from one that emphasizes the importance of government to one that is concerned with governance (Savitch & Vogel 1996; Frug 2002). The movement that calls for "governance without government" strongly believes in the formation of regional institutions either through collaborative efforts established across sectors such as private-public partnerships and regional alliances (ACIR 1987; Savitch & Vogel 1996), or through a centralized regional institutional structure created through councils of governments or special purpose governments (Miller 2002; Phares 2004).

Jumping late into the debate, some contemporary scholars argue that institutional arrangements are important to reduce the uncertainty of transactions in the production and provision of collective goods (Post 2002, 2004; Feiock 2004). Urban problems are inherently institutional collective action problems. There is no metropolitan crisis, only collective dilemmas in the presence of uncertainty. Local governments face collective action dilemmas when cautious decisions must be made whether to cooperate or compete

with other local jurisdictions; whether to establish bilateral or multilateral ties or act unilaterally in the provision of collective goods; whether to establish regional councils or special purpose districts; and whether to establish new sets of institutional arrangements to minimize the costs of monitoring, enforcing, and sanctioning the behaviors of contracting partners. The collective action dilemma encompasses all of these possible institutional arrangements.

Students in this field are interested in the “comparative advantage of governance” (Williamson 1975; Carr 2000) and the institutional factors explaining the relative costs of establishing and maintaining institutions (Feiock 2004; Feiock & Carr 2001; Steinacker 2004; Post 2002, 2004). They believe in the adaptive features of metropolitan governance, the importance of institutional choice, and the multiple arrangements used by local governments to conduct transactions. Local governments are treated as active participants in the formation of metropolitan governance when they shape and change institutional arrangements for their collective and selective benefits. This is contrary to the Neo-Progressive movement, which argued for strong regional institutions and generally assumed local governments are passive to their institutional environment (Savitch & Vogel 1996; Wallis 1993, 1994). They emphasize only collective benefits and demonize the discriminating effects of a fragmented metropolitan political system.

In summary most studies on metropolitan governance argue for institutional arrangements as a means to govern the cooperative and competitive behavior of local governments. However, these studies have not sought a general explanation for interlocal collaborative efforts in terms of social relations and structural positions; that is, the research has not sought the institutional relationships of local governments that are embedded in social relationships. Instead, most empirical studies generally have treated interlocal cooperation or competition as dyadic relations and developed models based on itemized variables to explain their prevalence. This has frustrated our understanding of local government actions across political boundaries. For example, what factors explain the nature of interlocal cooperation either in the forms of bilateral or multilateral agreements? What accounts for the multiple forms of contractual arrangements that exist

to govern these relations? Do some forms of contractual arrangements such as interlocal service agreements, contracts, or leases reduce the transaction costs of monitoring and enforcing agreements when compared to other form of contractual arrangements such as mutual aid agreements, operational assistant agreements or memoranda of understanding?

No single set of institutional arrangements are suitable for effecting delivery of particular services and alteration of specific strategies adopted by local governments. A decision to alter institutional arrangements depends upon how easy or difficult it is for local governments to perform their contractual obligations. This requires that an investigation be consistent both with the goals of local governments for specific services and the collective actions that are possible in supplying those services. A general explanation for institutional choice must also explain how institutional arrangements shape the decisions of local governments.

2.3 METROPOLITAN GOVERNANCE WITHOUT METROPOLITAN GOVERNMENT

This dissertation examines factors that explain the emergence of metropolitan governance in terms of arrangements governing local governments' institutional ties. It advances an explanation of emergence, maintenance, and stability or development of metropolitan governance. The main focus is on the configurations of different types of formal and informal institutional arrangements that directly influence the formation of institutional ties and indirectly, the emergence of metropolitan governance.

What should an adequate theory of the emergence and change in metropolitan governance provide? First, it should identify the mechanism by which institutional arrangements initially develop among two or more local governments and how the institutional ties are established. This entails answering two questions: (1) What are the forms of institutional arrangements used by local governments to govern their relations? and (2) Through what process do institutional arrangements become acceptable by involved parties to govern their relations? Second, it should explain how the established institutional arrangements might be changed. This requires answering the following

questions: (1) How and why could the stability of institutional arrangements in governing interlocal relations (dyadic or triadic relations) be undermined? and (2) How would a new form of institutional arrangement be established? The last question returns us to the two earlier questions pertaining to the initial explanation for interlocal cooperation and thus the importance of interlocal relations.

These questions are especially important in light of the current debate over the formation of metropolitan governance and the importance of regionalism. The distinction between *governance* and *government* and interest in the idea of “governance without government” has also grown in importance recently (Savitch & Vogel 1996; ACIR 1987). The key issue here concerns the role that governance, in contrast to organizations or governments, plays in ameliorating or resolving the collective-action problems at the metropolitan level. The central idea has been most clearly perceived by Ostrom, Bish, and Ostrom (1988) who wrote:

“We need to recognize that the local government in a democratic society cannot be confined only to what transpires in particular corporate entities or agencies identified as units of governments. This is why it may be more useful to refer to “governance structures” than “governments”. We can then appreciate that something viewed as a process of government (governance) requires reference to a much layer universe of discourse than do units of government as such.” (Ostrom, Bish, & Ostrom 1988: 212)

Scholars in urban politics began distinguishing the conceptual differences between governance and government (Peters & Pierre 1998). While the former encompasses the roles and relationships of all community leaders and citizens that guide and empower the design and strategies of local governments to address their common concerns (Dodge 1990; 1996), the latter is a formal institution carrying out the act of governing, that is, of public decision-making. Metropolitan governance is not necessarily the exclusive domain of local government political structures; instead what has emerged is a blending of formal structure and informal institutional arrangements (Miller 2002; Phares 2004). The general proposition here is that a metropolitan region with its autonomous and independent political units, dependent and interdependent upon each

other, can and often does succeed in handling the function of governance without creating governments in the conventional sense. The development and change of metropolitan governance is a gradual process rather than radical political reform.

The literature on “governance without government” is divided regarding the roles of local governments. One body of literature argues the role of local governments is central and increasingly expanding beyond their political boundaries. That is, regional institutions as sources of effective metropolitan governance are often regarded as a “creature of local governments” created by local governments in order to bring together participants at multiple levels of government to foster regional cooperation (Miller 2002: 103). However, another literature argues that those local governments and other organizations from the private sector are equal partners in the provision of collective goods. That is, there is no central actor, no ruler-defined relationships, and no pre-established goals of a single actor that provides administrative guidance and control (Agranoff & McGuire 2001). While the former sees local governments as institutional entrepreneurs seeking out formal and informal arrangements that best suit their problems, the latter generally sees local governments as part of a structure of interdependence involving multiple organizations, where “one unit [is] not merely the formal subordinate of the others in some larger hierarchical argument” (O’Toole 1997: 45).

The idea of “governance without government” suggests the importance of local governments’ interdependency. But interdependency also implies some degree of dependency among rival local governments. For example, when asymmetric power relations require one jurisdiction to distribute and share limited resources with another jurisdiction, interlocal cooperation occurs. Hence, a set of rules to govern their transactions is established. Here, local governments enter into an agreed form of institutional arrangements based on unequal power relations rather than on what Fisch (1986:1482) would call a “city of equals.” Metropolitan areas are buzzing with such contractual arrangements, both to coordinate local governments’ multiple preferences and conflicting interests, and because of limited resources, conditioning them to cooperate with other jurisdictions. Cooperation in this framework means cooperation between rivals

or “adversarial cooperation” (Salet, Thorley, & Kreukels 2003:13). This kind of cooperation may seem paradoxical but is not unusual within fragmented metropolitan governance. Adversaries may share common interests and cooperate, or be brought into cooperation if they come to understand their common interests. Rival municipalities may share their resources but such an arrangement requires a collaborative and negotiating approach to the creation of strategic policy to resolve metropolitan problems.

Interdependence can also give rise to conflict. This is especially acute when the efforts of individual localities to achieve their goals interfere with or thwart the efforts of others to pursue their own ends. Under a variety of circumstances, as will be discussed in the following section, interdependence also generates collective-action problems in the sense that independent localities, left to their own devices in an interdependent world, frequently suffer joint losses as a result of conflict or fail to reap joint gains due to an inability to maintain region-wide cooperation. Here, metropolitan governance can become a region-wide concern whenever local governments find themselves engaged in interdependent decision-making that impinges on the welfare of the others. The higher the level of interdependence among local governments, the more pervasive and complex collective-action problems are and the greater the demand for governance becomes.

Approached in this way, the demand for metropolitan governance (instead of a regional government) reflects the importance of institutional design to produce gain from voluntary cooperation, coordination, or exchange. This had led some scholars to argue that there has also been a shift in metropolitan governance in the U.S (Harvey 1989; Cooper 2003; Rosenau & Czempiel 1992; Wallis 1994; Henry, Ludowise, & Andrew 2005). They described how urban governance has been increasingly pre-occupied with the exploration of new ways to facilitate interlocal cooperation in the provision of collective goods. For example, the current emphasis on local governance that fosters and encourages local growth has been described as being in contrast to the managerial practices of earlier decades. Local governance is now moving toward urban entrepreneurialism (Harvey 1989); local, state, and federal governments increasingly have become less reliant upon a direct legal and political authority approach to an

approach that emphasizes a mechanism that is based on contractual arrangements (Cooper 2003; Henry et al. 2005; 2002); and governance structure is shifting from passive participation of stakeholders towards increased participation in the process of strengthening regionalism (Rosenau & Czempiel 1992; Wallis 1994). However, the major distinguishing feature of these multifaceted forms of governance that have evolved over time inadequately explains why one form of governance developed, as opposed to another, especially when a number of different ones can also produce basic benefits.

One possible response, based on the theories of institutional collective action, takes the following form: The development of a particular institutional arrangement occurs because it does a better job than competing arrangements in providing collective benefits. For example, certain kinds of legal agreements defining duties and responsibilities in a contract are more efficient; they do a better job of minimizing the costs of negotiation, enforcement, and sanctions; they are Pareto superior to other alternatives. Taking the analysis to the level of local governments, any forms of interactions they have had with each others or other organizations are either governed by state or federal statutes, or have evolved through the reputational effect of informal interactions, or even voluntary legal obligations. Regardless, their interactions are governed by a governance structure that must be adaptive to the agreed parties' specific needs. This is the implicit logic of many of the explanations to be discussed in this dissertation. To illustrate this, the mechanism explaining metropolitan governance must do more than demonstrate that multiple forms of institutional arrangements in metropolitan areas exist because they benefit the collective or the individuals. Instead it should elaborate how the causal mechanism connecting collective benefits to local government is connected to their intentions, or show how collective benefits are produced despite the problem of collective actions (Ostrom 1990; Knight 1992).

2.4 COLLECTION ACTION AND GOVERNANCE

Local governments' interactions can be both cooperative and competitive. The role of metropolitan governance can be conceptualized as resolving collective action problems, setting constraints that help individuals avoid the negative emerging effects of

collective action, enabling social actors to act collectively to produce beneficial social goals, and reconciling rationality at the individual level with rationality at the collective level. Metropolitan governance is both an action and a process, where local governments act as rational actors to craft and use a set of rules best governing collective behaviors. At the same time, those crafted and used sets of rules provide a psychological framework for actions as part of the governing process. Since the publication of the seminal works by Kenneth Arrow (1951) and March Olson (1965), most contemporary theories have heightened the roles of rational action and applied the problems of collective action and collective decision-making to the problems in metropolitan areas. This stream of work is referred to as the *Institutional Collective Action* framework and is discussed further below. It emphasizes institutions as a solution to collective problems in metropolitan areas (Feiock 2004).

2.4.1 Institutional Collective Action

The framework focus is reminiscent of the classical tradition of coordinative and collective benefits of competition and cooperation. The fact that the rational action tradition had developed better micro-foundations of institutional change makes the contemporary theories of metropolitan governance even more understandable. To a larger extent, the framework is an extension of the traditional discussion by Vincent Ostrom et al. (1961) and Charles Tiebout (1965). But the strict assumption of local government independence is relaxed to examine institutional dyadic ties, which are the independence and interdependence of local governments on issues concerning region-wide solutions requiring interlocal cooperation. The analysis mostly focuses on institutional relations at a dyadic level. These relations can be cooperative and competitive as “adversarial cooperation.” This is also true of the framework’s conception about the fundamental role of institutions and the mechanisms for institutional change. The framework also relies heavily on the individual level collective action theories that examine the voluntary cooperation of groups as proposed by Elinor Ostrom (1990; 1992) and the neo-Marxist’s conception of class conflict. That is, it recognizes the competitive nature of those relations involved in collective action (Feiock 2004).

Institutional collective action arises when the efforts of two or more local governments are needed to achieve an outcome. Collective action involves interdependency among local governments in which the contributions or efforts of one influences the actions of others, thus implying a strategic interaction. As metropolitan areas increase in terms of the number of general purpose units, the interactions among them become more complex. Hence, the need for collective action also grows. The problem of collective action occurs when a local government, pursuing an outcome that maximizes its own welfare, will not augment the aggregate benefits of the whole region. This leads to an inferior outcome, and thus the problem of institutional collective action.

At the individual level, the problem of collective action has been described by Richard Campbell (1985) as the “paradox of rationality and cooperation,” the “tragedies of the commons” (Hardin 1968), and “the prisoner’s dilemma” (Dawes 1973, 1975). That is, individual rational strategies lead to collectively irrational outcomes. The problems of collective action rest on the premise that individuals cannot be excluded from obtaining the benefits of collective goods once the goods and services are produced and have little incentive to contribute voluntarily to the provision of those goods. At the heart of the collective action problem, according to Ostrom (1990), is the free-rider problem. Whenever one person cannot be excluded from the benefits that others provide, each person is motivated not to contribute to the joint effort, but to free ride on the efforts of others. If all decide to free ride, the collective benefits will not be produced. This phenomenon is generally present in the provision of collective goods, whose benefits are difficult to exclude once produced *and* the quantity and quality of the goods will not diminish when consumed by all. If everyone free rides, then no one will cooperate.

At the organizational level, when a local jurisdiction formally or informally establishes institutional ties with other jurisdictions, the analysis of the problem of collective action is complicated by the possibility of divergence of preferences between elected and public officials (as civil servants) and their local constituents. Referred to as the agency problem, the costs of formalizing ties arise as the preferences of public

officials negotiating the contractual arrangements diverge from the preferences of their citizens. The extent to which agency costs are manifested in the transactions can be linked theoretically to the power and political security of public officials because they affect the uncertainty of the outcomes of the transactions. For example, elected and appointed officials may develop agendas that deviate from those of their constituents in two ways. First, they may be motivated to maximize their selective incentives such as personal reputation, power and budgets and thus might go against their constituents' interests. Second, they may have different policy preferences, which exacerbate agency costs in heterogeneous populations with multiple interests.

There are some mechanisms for monitoring institutional entrepreneurial behavior, but these mechanisms are less intense compared to a citizen's "voice" or "exit" tactic (Hirschmann 1970), or direct democracy options such as election, petition, or referendum. For example, reputational effect--the belief residents and neighboring jurisdictions have about a political entrepreneur's trustworthiness and his ability to keep his commitment--will have some impact on their conduct with other jurisdictions simply because of the geographical fixity of the parties involved. The inability of local governments to exist separately from their relationships with others compels a level of cooperation across jurisdictions. Reputational effect can deter local institutional entrepreneurs from behaving opportunistically against their constituents and those with whom they have contractual agreements, so that their strategic behavior is readily detected by others.

Selective incentives are important because they motivate local institutional entrepreneurs to undertake risky political tasks on behalf of their constituents. They highlight the importance of the political and entrepreneurial skills of local politicians and professional managers when dealing with neighboring jurisdictions. For example, local governments are motivated by non-material rewards such as constituent-wide recognition or reputation and privilege. This is not necessarily bad. Taylor and Singleton (1993) and Posner (1996) extended Olson's (1965) notion of selective incentives to encompass notions such as "community spirit" or "group solidarity" and explain why in some cases groups are able to solve collective action problems by themselves and in others, the

problems are only solved by recourse to an external agent like the state¹. In the process of reaching their goals, they instill vision for their work team and manipulate a range of non-material incentives in their organization to motivate others. They can motivate other jurisdictions to work collaboratively and participate in region-wide collective action through non-monetary incentives: “solidarity benefits” such as fun and friendship that derive from working with others and “purposive benefits” such as intangible rewards contributing to the collective because of shared goals (Schneider et al. 1995; Wilson 1973).

2.4.2 Metropolitan Governance as Problems of Institutional Collective Action

As a configuration of rules governing behaviors, metropolitan governance can be regarded as a problem of institutional collective action. Local governments in their attempts to form interlocal contractual arrangements to govern their transactions face a greater burden in designing a set of rules consistent with multiple and often conflicting preferences. Even if the payoffs were symmetrical and all the principals were equally well off, the contractual arrangements would still be prone to a failure of institutional supply since rational principals would seek to secure benefits for free (Bates 1988; Ostrom 1990). The incentive to free ride would undermine the incentive to organize a solution to the collective dilemma. An individual locality’s incentives to participate in collective action does not reflect full benefits since additional effort increases the information and reputation resources for all principals in the region without any additional investment by the others. Even if regional cooperation efforts were developed through state and federal funding, or mandates that could reduce the transaction costs for forming region-wide planning and implementation efforts, they are actually public goods that aid the region as a whole more than aiding any individual locality. Thus decision-making process will be dominated by a lack of individual incentives to contribute to the effort of the collective, and will lead to an under-investment in region-wide efforts to resolve what Ostrom (1990) called the second order collective action problems.

¹ Taylor and Singleton (1993) were interested in the conditions that enable endogenous resolutions of collective actions; while Posner (1996) was concerned with the influence that integration between legal and non-legal sanctions have on the behavior of collective forms of organization.

The next dilemma for local governments is how they can organize themselves to obtain collective benefits when faced with a credible commitment problem. To understand the commitment problem in delivery of collective goods and services like public safety, let us consider a highly simplified version of the choices available to a locality. In an attempt to develop region-wide cooperation efforts such as operational assistance or mutual aid in a specific task force agreement, most participants in the agreement will establish rules that constrain the authorized actions available to them. Such institutional arrangements may include some or all of the following elements specified in the rules: the nature of the assistance to be rendered; the discretion by the parties as to when and to what extent assistance will be available; the agency or entity that shall bear the liability arising from any acts undertaken under the agreement; the procedures for requesting and for authorizing assistance; the agency or entity that has supervisory responsibility; a time limit for the agreement; the amount of any compensation or reimbursement to the assisting agency or entity; and any terms and conditions necessary to make the agreement effective.

A standard argument is that if parties to the agreement follow these specified rules, resources will be allocated more efficiently, interlocal conflict will be reduced, and services will be sustained over time (Cooper 2003). However, in the case of a rational principal, this can be a tricky problem. Why would rational actors allow themselves to be constrained by the rules from acting so as to increase their utility, when they could instead violate or change those rules? For example, at a minimum the principals to an agreement are faced with a choice whether to comply with the agreement or partially break the rules in some fashion (Ostrom 1990). This problem is particularly acute when faced with financial stress where non-compliance with a set of rules can benefit the defectors substantially, saving the principals human as well as capital resources. The point here is that once the human and capital investments are made and infrastructure has been developed, municipalities still face the issues of how best to maintain the provision of goods and services within the legal framework of interlocal contractual arrangements. Even before the implementation stage of any such agreements, local authorities still face

a dilemma as to whether one party in the agreement will still honor or default upon its contractual obligations once agreements are signed.

External coercion is a frequently-cited theoretical solution to the problem of credible commitment. That is not the main issue here. What we are interested to understand is how metropolitan governance based on a self-organized group of independent localities/municipalities must solve the commitment problem without an external enforcer. They have to motivate themselves to monitor the behavior of others. While some acts of interlocal cooperation are enforced by the threat of official sanctions, others depend on the presence of informal social sanctions or the incentives inherent in ongoing relationships of reciprocity. Informal social institutions can amount to cooperative behavior by adhering to norms such as honesty and reciprocity in doing favors or the preservation of some socially-defined notion of honor. However, the puzzle of the credible commitment problem still persists because even if one central principal took the time to analyze the problem and devise a set of rules to ensure compliance, the efforts to supply a new set of rules would be pointless unless the principals could commit themselves to follow the rules. Unless the monitoring problem can be solved, credible commitment cannot be addressed (Ostrom 1990; Miller 1992).

The next issue to consider is related to the problem of mutual monitoring. The problem is based on the assumption that local governments will not themselves monitor their own rules even though they set those rules themselves. The logic behind the dilemma is that any rational principals would not ensure the compliance of others with the set of rules simply because there is nothing to be gained by monitoring the behavior of other municipalities on behalf of the collective. Though it is true that the whole metropolitan area would be better off monitoring and punishing the defectors, for an individual municipality it is simply better to remain passive and free ride on others who monitor potential defectors. The problem here is how a set of principals engages in mutual monitoring? Without monitoring there is no credible commitment. Without credible commitment there is no reason to propose new rules (Ostrom 1990).

It has been argued that frequent interaction between localities can facilitate mutual monitoring because frequent interaction builds reputations and fosters higher levels of trust. If frequent interaction is the key to mutual monitoring, then sharing important social, cultural, or economic characteristics may increase the predictability of interactions and thus mutual monitoring. Frequent interactions also imply that decisions and activities of local municipalities are simply not independent of each other. Such relationships are crucial assets to the participants because they reduce costs of exchange and promote development of knowledge by the respective parties; the relationships also give everyone some control over each other through mutual monitoring or even mobilizing partners against third parties. They can also be used as a way to bridge information to other localities or state and federal agencies.

2.5 THEORIES OF INSTITUTIONAL COLLECTIVE ACTION

Given these problems of institutional supply, monitoring, and credible commitment, theories of institutional collective action investigate mechanisms that could explain factors motivating local governments overcoming these institutional problems and coordinating activities that improve the well-being of the whole region. The theories of institutional collective action are concerned with the underlying considerations behind the willingness of local governments to understand how they might be able to achieve an effective (efficient) form of governing and how they can manage their relationships despite the barriers to joint production or delivery of collective goods.

Our perspective on metropolitan governance follows the description of institutions by Feiock and his associates (2004). They offer an alternative theoretical explanation arguing that local governments can act collectively to create a governance structure that integrates a region across multiple jurisdictions through a web of voluntary agreements (formal and informal). In this framework, metropolitan governance emerges because of unrealized efficiency explained by problems embedded in collective action. Viewing metropolitan governance as a network of interdependent relationships between multiple actors facilitates the notion that such a governance structure provides the building block or relational “glue” that binds institutionally fragmented localities (Feiock

2004). The repeated interactions through such institutional arrangements can be properly captured as institutional ties of interlocal contractual arrangements. Carlos Brito (2001: 157) refers to such interactions as “institutional relationships” resulting from “a process of institutional aggregation of a range of dispersed and fragmented interests into an expected coherent and unified action.”

Based on this perspective, metropolitan governance is regarded as a set of formal and informal institutions governing interactions of local governments across jurisdictional boundaries but the emphasis focuses on the interconnectedness of institutional ties formed purposely by local governments through interlocal contractual arrangements. We believe that institutional ties are important when thinking about the formation of metropolitan governance in terms of network analysis. Lynn (2005) for example, implicitly argues that institutional ties embedded in the organizational and collaborative approaches developed through mutual aid agreements bring together key decision-makers who can share information and intelligence. It is “through this sharing from multiple agencies that line officers, investigators and analysts are most likely to make the essential connection that can prevent terrorist attacks” (Lynn 2005: vii). Curtis Wood (2003) pointed out that the extensive use of formal forms of contractual arrangements suggests the existence of regular and sophisticated systems of informal communications among elected and appointed public officials across multiple jurisdictions. Formal contractual arrangements can encourage clusters of individuals and their respective jurisdictions to rely on their personal networks to induce further forms of interlocal cooperation. A network of formal and informal interactions encourages regional integration among fragmented units of local governments without having to opt for a metropolitan government. They are crucial for channeling the flow of material or non-material resources across multiple agencies.

According to Thurmaier and Wood (2002), because most interlocal contractual arrangements are long-term, they can lead to a “norm of reciprocity” among local governments fostering what Wilkes (1975: 7) referred to as “a tradition of cooperation.” In other words, interlocal contractual arrangements are regarded as formalized “special

relations” developed through informal networks over time that continued to flourish because of repeated interactions. Such special relations are manifested as institutional ties crucial for other future forms of cooperative arrangements. This is important because if contractual arrangements are embedded in a rich social context in which information and opportunities are exchanged, the risk of opportunistic behavior can be reduced, a cohesive set of preferences can be aligned, and a common interest can be mobilized.

Dyer and Singh (1998) contended that in an industrial alliance, private organizations can even generate “relational rents”--supernormal returns achieved through relations with other organizations. This led Gulati (1998) to speculate that an organization can possess intangible resources that exist outside its organizational boundary. That is, institutional ties rich with information can provide access to capital and human resources and opportunities in the future. Through repeated interactions, as they implement their agreed contracts, managers in organizations learn about each other and develop personal ties (Maccaulay 1963; Shapiro, Sheppard, & Cheraski 1992; Jones, Hesterly, & Borgatti 1997). Within the context of regional governance, the benefits of interlocal cooperation and the institutional ties established through interlocal agreements flow when local governments interact repeatedly with each other allowing them to gain access to intangible resources.

Implicit in this conception of metropolitan governance is the argument that institutional ties are relational (Blatter 2003). Different structures provide different structural processes and opportunities for individual localities when conducting transactions beyond their political boundaries. That is, metropolitan governance can solve the problem of collective action in two possible ways: First, metropolitan governance resulting from a web of institutional ties produces collective benefits to parties to an agreement. A metropolitan area having a close-knit network structure is an ideal governance structure for interlocal collaboration and cooperation. It implies active involvement of other organizations in an arena of public policy able to convey values and norms important for integration and social cohesion. Hence, in a governance structure involving dense interconnectedness of multiple organizations, it would be easier for the

members to enforce norms of cooperation and foster cooperation without jeopardizing the whole alliance.

Second, metropolitan governance can produce selective benefits for those organizations that are more central than others. Centrally located units of governments are those that are socially positioned at the core of the governance structure, playing active roles to explore all kinds of relations with others and as a result, gaining more selective benefits than do others. If the interactions produce certain outcomes for those involved, then implicit in this definition of metropolitan governance is the notion of urban entrepreneurialism (Feiock & Carr 2001; Harvey 1989; Selznick 1957). That is, local governments make strategic decisions to act collectively.

Our conceptual understanding of metropolitan governance supplements previous empirical work. For example, on the issue of maintaining interlocal relations, most empirical studies using theories of collective action have examined the role of governance in its ability to absorb the costs of monitoring, enforcing, and sanctioning local governments' behaviors. Metropolitan governance maintains interlocal relations to produce collective benefits for all involved.

The ability of local governments to absorb the transaction costs of contractual arrangements in order to maintain their interlocal relations depends on “contextual factors” or “institutional context” that could ease the costs of creating solutions to the problems of coordination of local government preferences, negotiation of payoffs, enforcement of agreed rules, and ease of the agency problems (Feiock 2004, 2005; Kirlin 2001). For example, Stephanie Post (2004) examines five factors influencing the level of local government cooperation: the geographic density of metropolitan governments; the number of local governments and the heterogeneity of their population; the extent to which local governments have common policy preferences; the extent to which local governments can act as institutional entrepreneurs; and the extent to which actions of state and federal governments facilitate selective incentives that encourage local governments to cooperate.

Recently Feiock (2005) proposed four broad contextual dimensions: the characteristics of goods and services, community characteristics, political institutions, and policy networks. According to Feiock, these dimensions can capture the extent to which local governments can ease the transaction costs of negotiating, implementing, and monitoring their interlocal contractual arrangements.

In another study, Anne Steinacker (2004) posits that one of many solutions to institutional collective action problems depends on (1) the level of asymmetry of political strength of the parties involved and (2) their preferences for what the outcomes should be and how they would be distributed. The greater the level of asymmetry of political strength, the more clear-cut is the winner, and the higher the political opposition to any cooperative solution. By the same token, the greater the level of heterogeneity of the participants, the more diverse is the preference, and the more difficult it is to come to a collective decision on the desired outcomes. The contextual factors that influence the level of political strength and the magnitude of individual preferences are articulated as the sources of transaction costs and barriers to collective action. These factors are re-considered further in Chapter 4. Suffice it to mention that most of the current theories of institutional collective action have examined the problems of the collective at the dyadic level.

CHAPTER 3

INTERLOCAL CONTRACTUAL ARRANGEMENTS

This chapter extends the arguments from the previous chapter and focuses them on interlocal contractual arrangements. It elaborates an explanatory mechanism by which an interlocal contractual arrangement involving two or more local governments can foster interlocal cooperation. This demands answering the first set of questions posed in Chapter 2: What are the many forms of institutional arrangements used by local governments to govern their relations? And through what process do institutional arrangements become acceptable by involved parties to govern their relations? While the first question directs inquiry to the general classification and trend of interlocal contractual arrangements, the second question requires development of a contractual perspective on the mechanism explaining a local government's decision to enter into a contractual arrangement with another jurisdiction, i.e., the ability to absorb transactions costs of contracting depends on the contextual factors that could ease the costs of creating solutions to the problems of coordination of local government preferences, negotiation of payoffs, enforcement of agreed rules, and ease of the agency problems

This chapter argues that there are many types of interlocal contractual arrangements available to local governments to govern their transactions, and they can be classified into two general forms: restrictive and adaptive. The different forms of interlocal contractual arrangement are institutionally designed arise in part as an effort of the involved parties to reduce transaction costs of contracting that are a product of the arrangements, and also partly by virtue of state statutes that allow mixed approaches to be used by local governments. They provide local governments with institutional choice regarding the best arrangement to adopt. Chapter 3 presents the theoretical argument for classifying interlocal contractual arrangements into two categories: restrictive and

adaptive forms of contractual arrangements. The transaction cost approach is employed to explain local government's preferences for different forms of interlocal contractual arrangement.

3.1 THE TRANSACTION COSTS OF INTERLOCAL CONTRACTUAL ARRANGEMENTS

The transaction costs economic approach posits that an organization's decision to internalize the production and provision of goods and services rather than engage in an economic exchange through the market depends upon the comparative advantages of institutional arrangements in reducing the costs of transaction (Williamson 1975). According to the approach, the criteria influencing an organization's decision depend upon (1) the transaction-specific asset that lacks transferability for use in a given transaction to other uses, (2) the relative ease with which an organization can monitor and measure the vendors' fulfillment of the specificity of the contract, and (3) the frequency of contracting after the first round of bargaining (Brown & Potoski 2003). In combination, these characteristics can make identifying, monitoring, and enforcing contracts costly and difficult. In a transaction that involves a highly specific asset where the vendor's behavior is difficult to monitor and the contract is long term, there is a high possibility that the vendor will act opportunistically and exploit the contract. The organization locked into the transaction will also subject itself to a weak bargaining position for renegotiating the contract in the future. In order to avoid being at this disadvantage, the transaction costs perspective predicts that an organization will opt for the transaction cost advantages of internal production.

However, local governments are not limited to the basic choice between complete contracting and direct provision. Local governments experiencing the threats of a shirking problem with the private sector can mitigate the problem by contracting with other governments or nonprofit organizations with similar mission-goals (Wise 1990; Morgan & Hirlinger 1991). Within the public sector itself, recent empirical work has shown that local governments use multiple types of contractual arrangements to coordinate their activities in the delivery of public goods and services (ACIR 1985;

Atkins 1997; Savas 2000). For example in Florida, especially in the provision of public safety, municipal and county governments coordinate their activities using a variety of contractual arrangements. The different forms of interlocal contractual arrangements are “commonly accepted ways” to adjust local governments’ resources and capacities to their service responsibilities (ACIR 1985:1).

An alternative version of the transaction costs theory is based on a contractual perspective that emphasizes the characteristics of interlocal contractual arrangements in terms of relational contracts. That is, relational contracts are used by local governments to manage interlocal relations and adapt to uncertainty due to changing circumstances. Conceptually, based on the contractual perspective, multiple forms of interlocal contractual arrangements can be classified into adaptive contract and restrictive contracts. The former refers to adaptive features of the contractual arrangements able “to affect realignments caused by unanticipated disturbances” (Maser 1998:528). Local governments attempt to minimize unanticipated circumstances by crafting different types of arrangements that are necessary and sufficient to secure their interlocal cooperative relationships. The latter is more restrictive in the sense that the procedural characteristics and outcome requirements are clearly stated in the contract in order to avoid future dispute and commit parties to an agreement that strictly fulfills the terms of the contract.

An adaptive contract is advantageous because it specifies the activities to be rendered without unnecessarily intruding on the authority of the other jurisdiction. Generally, it is nonobligatory, voluntary, and/or easily terminated without legal consequences to either party. An example of adaptive contractual arrangement may include a continuum of arrangements from memoranda of understanding to mutual aid agreements, to informal “gentlemen’s handshake” and letters of agreement. Alternatively, municipal and county governments can choose a more legally binding contract in the presence of regional politics and avoid future disputes by using more restrictive forms of contractual arrangements such as interlocal service agreements, contracts or leases.

How does the contractual perspective theoretical framework explain the existence of multiple types of interlocal contractual arrangements? The theoretical argument runs like this: uncertainties impose costs on interlocal relationships when in the course of coordinating multiple activities to meet local demands they are affected by natural disasters or interjurisdictional strategic acts. Absent foresight, parties to any transactions cannot agree on a substantive response to uncertainty, so in order to minimize costs of planning, adapting, and monitoring task completion across jurisdictions, interlocal contracts are crafted as a procedural safeguard to reduce uncertainty (Gillette 2001; Maser 1998; Heckathorn & Maser 1987). The existence of multiple types of interlocal contractual arrangements provides alternative mechanisms for managing uncertainty because the ability of municipal and county governments to cope with uncertainty differs given their available capital and human resource endowments. They strategically align the safeguard guaranteed to them by a particular contractual arrangement against uncertainty accordingly because alternative arrangements also impose different costs on their relationships. So, local governments enter into a contractual arrangement in a bounded rational fashion by selecting an arrangement to achieve task completion that simultaneously minimizes the transaction costs of contracting. In other words, a variety of interlocal contractual arrangements provides local governments with institutional choice. The one that is chosen is the one that enables local governments to carry out their functional responsibilities jointly with other units of governments at lower costs.

3.2 INTERLOCAL CONTRACTUAL ARRANGEMENTS

Interlocal contractual arrangements are often viewed by urban scholars as an administrative procedural approach rather than a political approach to metropolitan governance. Contractual agreements are one way for local governments to coordinate public policy to curb common concerns within metropolitan areas without opting for political integration. The administrative procedural approach provides a legal framework for local governments with the authority to negotiate interlocal agreements within established legal limits; political approaches, on the other hand, such as annexation, and city-county consolidation, requires statutory authorization and approval of the citizens. Carr and Feiock (2004) argue that a range of interlocal contractual arrangements impose

a lower transaction cost compared to annexation and city-county consolidation on the formation of metropolitan integration; they have been widely used by local governments in delivering collective goods (Thurmaier & Wood 2004; Friesema 1970, 1971; Sonenblum, Kirlin, & Ries 1977).

The proliferation of interlocal contractual arrangements in the U.S has led to a growing stream of research by scholars who have examined some of the causes and consequences of these arrangements on interlocal relations (Thurmaier & Wood 2004; Friesema 1970, 1971; Sonenblum, Kirlin, & Ries 1977). In earlier empirical studies, there had been surprising reports on the extensiveness of such arrangements fostering interlocal cooperation. Carrel (1954) found as many as 753 identified interlocal agreements in Philadelphia's 686 local jurisdictions. Graves (1964:746) considered this number of agreements "astonishing." In a classic study, Friesema (1970, 1971) found on average about 50.5 interlocal agreements per city in the Quad-city metropolitan area. The Advisory Commission on Intergovernmental Relations (ACIR) found 54 percent of 2,069 responding municipal and county governments have either interlocal service contracts or joint service agreements and that, twice as many jurisdictions have written formal agreements as have informal agreements (ACIR 1985). More recently, Thurmaier and Chen (2005) reported on the distribution of 12 percent of their mail surveys in Iowa and found about 11,797 identified agreements had been filed between 1965 and July 2004. Extensive use of interlocal agreements has also been reported by Foster (1998) in her survey of 278 Western New York municipalities, Carr (2005) in the state of Michigan, and Wood (2002; 2004) in Kansas Metropolitan area.

The financial benefits of interlocal contractual arrangements accrue when local governments can coordinate and share their resources such that any duplication of local services can be eliminated, negative externalities and locally unwanted land use can be effectively addressed through joint planning, economies of scale and efficiencies in standardized service provision are realized (ACIR 1985; Atkins 1997; Stein, 1990; Hirlinger & Morgan 1991), and the management of local growth can be effectively coordinated in order to improve regional communities as a whole (Florida

Intergovernmental Commission 2001; Wood 2004). Interlocal contractual arrangements are particularly beneficial to localities facing fiscal constraints, especially in functional areas that involve large capital start-up and personnel expertise (Sonnenblum, Kirilin, & Ries 1977; Post 2002).

Some empirical evidence suggests that interlocal contractual arrangements can produce cost savings. Stein (1990) for example, found that local governments can achieve cost savings when they enter into contractual arrangements with other governments, as opposed to a contractual arrangement with the private sectors. Morgan and Hirlinger (1991) found that local governments that provided a larger proportion of their service using interlocal contractual arrangements generally have lower labor costs. Wood (2004), in his study of 6 jurisdictions in Kansas Metropolitan area, found that 70 percent of city managers generally believed interlocal contractual arrangements have improved the quality of local services, 63 percent believed interlocal contractual arrangements have enabled them to standardize services for residents living across political jurisdictions, and 78 percent of city managers found interlocal contractual arrangements have enabled them to share problem solving. Gary Miller's (1981) study of "Lakewood Plan cities" in Los Angeles County, California, argues that cities that contracted out their service to the county enjoy an artificially low rate charge for the service because the county has able to spread the total cost across the entire county. He suggests that the county of Los Angeles was in fact eager to set its prices at this low rate to cement its position as the dominant service provider and to guarantee the preservation of a large bureaucracy. These few empirical studies suggest that interlocal cooperation via such institutional arrangements can produce tangible benefits.

3.2.1 General Classification of Interlocal Contractual Arrangements

Traditionally, the main features of interlocal contractual arrangements have been classified into two types (Atkins 1997). The first type applies to interlocal cooperation sanctioned or authorized by state statutes between two or more governmental units, in which the parties contract for or agree on the performance of a specific activity through a

mutual or delegated provision such as an interlocal service agreement, mutual aid agreement or an operational assistant agreement (Atkins 1997; ACIR 1985; Zimmerman 1974). For example, in contracting services within the public sector, the Advisory Commission on Intergovernmental Relations (1985) has provided three broad categories based upon the extent to which transfer of functions are made between two or more governments: (1) “Intergovernmental service contract” is an agreement that is only between two governmental units in which one pays the other for the delivery of a particular service to residents in the jurisdiction of the paying government. In contemporary literature, it is often referred to as “interlocal contracting”; (2) On the other hand “joint service agreement” involves two or more local governmental units for the joint planning, financing, and delivery of service to all residents of all jurisdictions participating in the agreement; and (3) “Intergovernmental service transfer” involves the permanent transfer for the total responsibility of the provision of a service from one local government unit to another.

The second set of contractual arrangements involving interlocal cooperation are those arrangements that are not legally sanctioned by specific statutes but had been used in everyday administrative practices in metropolitan areas such as Memoranda of Agreement (MOA) and Memoranda of Understanding (MOU) or letters of agreement. Atkins (1997) refers to this type of arrangements as “cooperative intergovernmental ventures” or efforts resting strictly on the good faith of the participating parties (Atkins 1997: 2). They have been used by local governments to establish general guidelines for locally-coordinated efforts. Although not legally binding, such arrangements are commonly used to address short term and specific issues. They are more flexible but rarely used without local council or commission approval.

Technically, MOUs are used when different units of local governments act cooperatively and in parallel to accomplish a joint end. The documents define general areas of understanding between two or more parties, i.e., they explain what each party plans to do but the actions of one party do not depend on the actions of the other party. Memoranda of Agreement (MOA), on the other hand, are conditional agreements in a

sense that an action of one party depends on what the other party does. The document establishes responsibilities for providing recurring reimbursable support and is usually supplemented with agreements that define the support, the basis for reimbursement for each category, the billing and payment process, and other terms and conditions of the agreement. MOA is not a substitute for formal agreement, but it can be used to show an informal agreement before a formal agreement is written.

Other types of interlocal contractual arrangements include informal arrangements. For example, prior to Florida's Interlocal Cooperation Act of 1969 (and still used today), informal agreements between local governments are often used outside the purview of state legislative oversight. They have been described as "innovation networks" (Nunn & Rosentraub 1997: 207) and they are usually "paperless," involving everything from handshake commitments by adjoining municipalities and counties to mutual understanding that one local will help the other "upon verbal request." Sometimes, such an arrangement simply involves an informal written letter of agreement between two jurisdictions in response to a particular emergency. Although informal agreements are more difficult to determine, they are "widely used" by local governments.

3.3 RESTRICTIVE AND ADAPTIVE CONTRACTUAL ARRANGEMENTS

We aggregated the different types of interlocal contractual arrangements into two general classifications: "adaptive forms of contractual arrangement" and "restrictive forms of contractual arrangement." In Florida, municipal and county governments have been coordinating their public safety activities either through restrictive forms of contractual arrangements such as interlocal service agreements, contracts, and/or lease agreements, or via a more adaptive forms of contractual arrangements such as mutual aid agreements, Memoranda of Understanding, or informal "gentlemen's handshake" and letters of agreement. The different forms of interlocal contractual arrangements are "commonly accepted ways" (ACIR 1985:1) to adjust local governments' resources and capacities to their service responsibilities given the uncertainty of interlocal transactions.

These broad classifications are important to our analysis because they determine the different working rules embedded in different types of interlocal contractual arrangement. These working rules, determined by local governments' negotiation and the procedures involved in early stage of a formation of interlocal agreements, are essentially "rules about rules and about authority" (Lowi 1985:74). They structure local actors' behavior and can be changed by actors themselves, so they are also affected by the strategic choice actors make when crafting contracts, i.e., whether to have clearly-defined working rules or flexible working rules governing a transaction. Moreover, we are most interested to determine not only the general pattern in which different levels of interlocal relations have affected contractual choice, but also the context in which the contractual arrangements are formed.

3.3.1 Restrictive Contractual Arrangements

A contractual arrangement is restrictive if the specific set of rules governing that transaction are specified clearly and the outcomes of the transactions are predictable and included in the contract. A contractual arrangement is restrictive to the extent that all negotiating parties can come to a consensus on the effectiveness of an agreement that governs their transactions. To be effective, the arrangement must be backed up by specific state statutes that are feasible to defend (in an economic and legal sense) in the legal system. The contractual perspective would posit that such contractual arrangements promote stability and decisiveness in a transaction because the set of working rules determining specific outcomes produces stability to all parties involved in the arrangement. Once such a contractual arrangement exists, localities involved in the transaction will clearly know how the established arrangement can resolve potential disputes and enforce outcomes in predictable ways. Each locality involved knows that others also know this arrangement and thus will ensure cooperative acts.

Interlocal service agreements, for example, oftentimes require strictly fulfilling the terms of an agreement. Such agreements may include some or all of the following elements that specify the rules: the nature of the assistance to be rendered, discretion by

the parties as to when and to what extent assistance will be available, the agency or entity that shall bear any liability arising from acts undertaken under the agreement, the procedures for requesting and authorizing assistance, the agency or entity that has supervisory responsibility, a time limit for the agreement, the amount of any compensation or reimbursement to the assisting agency or entity, and any terms and conditions necessary to make the agreement effective (FLCIR 2001). If parties to the agreement follow these specified rules, resources will be allocated more efficiently, interlocal conflict will be reduced, and the services will be sustained over time.

However, there are tradeoffs to clearly defined sets of rules and outcomes. A clearly defined set of rules embedded in the contractual arrangement determines the effectiveness of the monitoring mechanism to cope with the problems of uncertain future and the risks of opportunism. Once an agreement is adopted, it becomes legally binding. The rules governing the transaction can only be changed with the agreement of all involved. Parties to the agreement can only act on the basis of the negotiated agreement, unable to respond to changed conditions, leading to suboptimal outcomes. That is, the fear is that they may be “locked-in” when relying too much on outside contractual arrangements. Individual parties to the agreement will then have lost the freedom of unilateral action or local autonomy and control in meeting their community needs even though external circumstances or preferences might change in ways that render the standing agreement unacceptable to one party. This situation is more acute when multiple localities are involved--referred to by Friesema (1970) as multilateral agreement--where renegotiation would involve high transaction costs. The agreement now turns into the “joint-decision trap” (Scharpf 1988), where the party gaining the most from the established agreement can block any changes, or at least extract an exorbitant side payment unless the decision to change can be made by consensus².

² Consensus is defined here as the interactions among involved localities in discussion for alternative rules until no one insists on opposing a proposed solution, yet having the possibility of a clearly-defined set of rules in the presence of blatant obstruction (Coleman 1990; Scharpf 1997).

Another problem with a restrictive form of interlocal contractual arrangement is that, since opportunism imposes increases with sanctions and incentives to curb the dilemma of collective action (Ghoshal & Moran 1996), a contract that is inflexible can also create a self-fulfilling prophecy leading to tougher and more elaborate sanctions or more restrictive forms of contractual arrangements. When this occurs, actions by local governments curbing opportunistic behavior only lead to “crowding out” of members’ “spirit of cooperation” and diminish the intrinsic motivations crucial to building strong institutional ties (Miler & Whitford citing Titmuss 1971). The transaction costs of restrictive contractual arrangements are particularly acute when local governments attempt to work together in complex and highly unstructured tasks, making any written contract difficult to write and enforce. It becomes even more problematic when joint planning or collaborative production is involved because independence creates ambiguity about how much each agency actually contributes to the final output.

This is not a new phenomenon. Since 1960s, there have been reported cases that formal service contracts and agreements had been slow to develop in the police field because of the transaction costs of developing, maintaining, and monitoring a contractual arrangement for police services are relatively high compared to services such as sewage and waste management. Gordon Misner’s (1961) early study in city of Lakewood, California--the first incorporated area with which Los Angeles County contracted for the performance of police service--documented that city-county contracts contained a “built-in” review provision for adjusting costs on a strict cost accounting basis. In his study of police service contracts in California, Misner reported that police functional responsibilities are often the last to be given up by a political jurisdiction.

There are monitoring and legal costs to maintain standards of service provisions across local jurisdictions. It is also uncertain whether comprehensive legal agreements or restrictive forms of interlocal contractual arrangements would not be challenged through a litigation process. These concerns can also be exacerbated by State legal doctrines of non-delegation (Gillette 2001; Reynolds 2003). Dillon’s Rule precludes local governments from engaging in activities for which they have not received explicit

authority from the state legislature. Although this restriction may not apply to those localities that have Home Rules or Charters, the Courts have systematically upheld those interlocal service agreements that have been challenged as violations of home rule provisions (Gillette 2001; Bradley 1994). These statutes may limit the capacity of localities to overcome contacting costs and the threat of strategic behavior.

A survey by the Advisory Commission on Intergovernmental Relations identified several local disincentives to interlocal cooperation through interlocal service agreements for specific services. For one thing, the receiving unit is likely to be wary of the potential loss of local autonomy and control resulting from the relinquishment of its authority over service production and provision because local governments fear that their contracting partners will not apportion costs equitably (ACIR 1985: 39-40). Loss of control and the fear that other organizations might “drop the ball” are also among the many structural barriers to interlocal cooperation unless a restrictive form of contractual arrangement can be crafted to protect the agreed arrangements. Notwithstanding these perceived drawbacks, interlocal service arrangements are widely used across the country.

3.2.2 Adaptive Contractual Arrangements

Alternative sets of working rules exhibiting adaptive or flexible features may be necessary to accommodate unanticipated changes in future conditions (Gillette 1990; Baird 1990; Maser 1998; Heckathorn & Maser 1987). Such adaptive contractual arrangements can greatly reduce the transaction costs of writing a contractual arrangement and a monitoring credible commitment if the decisions to provide public goods and services are based upon consensus. Baird (1990) examines a “flexible contract” in terms of local governments’ ability to diversify risks when entering into agreements in the presence of uncertainty. Sclar (2000) for example considered a flexible relational contract as an agreement established by parties in complex settings that leave the details to be filled in later. In interlocal contractual arrangements, the ability of local governments to agree upon a set of rules that allows them to perform services that are

nonobligatory, reciprocal, and yet easily terminated without legal consequences, is regarded as adaptive.

One advantage for having adaptive contractual arrangements under consensus lies in the norm of reciprocity based on the expectations that none will engage in a strategic act to free ride on the efforts of others. Such reasoning seems a far stretch on goods and services having the characteristics of common pool resources such as water resources. But within the realm of public safety, mutual aid agreements for emergency first responses--the expectation that a locality will render assistance during disasters--is not unforeseeable. In situations such as this, viewing interlocal contractual arrangements as relational contracts implies an intensive process of socialization and the existence of established long term associations serves as an effective means of control.

From a metropolitan governance standpoint, multilateral agreements (or other adaptive contractual arrangements such as memoranda of understanding and memoranda of agreement) have not been used widely by local governments as a means to provide a truly regional solution to metropolitan area problems. Rather, and perhaps because of the need for ongoing monitoring and involvement, such arrangements tend to be purposely designed to allow parties to the agreement to exit easily when necessary, to be legally nonobligatory but flexible enough to take into account unanticipated circumstances. Some of these contractual arrangements are based upon a narrowly-defined set of working rules for a particular service while somewhat limited in scope. This is necessary to avoid a complete transfer of authority in the event of an emergency or the provision of a specific service, i.e., they are used as authorization by one locality to another in order for the other locality to operate within the boundaries of the neighboring political unit. These arrangements are only entered into by both parties for a specific function and power relating to that service as opposed to transfer of regulatory powers.

Generally, most mutual aid agreements are purposively designed to be adaptive. They are not an attempt by local governments to implement a grand joint vision for improving the overall welfare of the constituents of all participating local governments,

but rather a carefully delineated description of specific ways in which joint action will complement pre-existing local government policy.

Mutual aid agreements, given their adaptive features, offer a potential advantage over interlocal service agreements or contracts for services because they require meaningful cross-boundary collaboration and joint exercise of powers, and they may create an opportunity for highly segregated local governments to become acquainted with each other. An example is mutual aid agreements that established special task forces or response teams. Unlike interlocal service agreements or contracts for services, in which one government may cede total responsibility for performance and implementation of contract obligations to the providing entity, a mutual aid agreement involving multiple jurisdictions may provide an intangible boost to the reduction of barriers to interlocal cooperation because they are usually entered into with good faith and thus the enhancement of a sense of true metropolitan governance that fosters a regional community.

However, a mutual aid agreement involving multiple parties to an agreement may also blur or eliminate the lines between provider and recipient of services making it difficult to determine the scope of the powers being shared by the participating entities. The continuous involvement of multiple entities of government may create difficult questions regarding legal liability. For example, the nature of local government's involvement in a mutual aid agreement may have important implications for tort immunity or workers compensation issues as reflected by a few case laws around the country. In Texas, a city may be liable for actions of a county employee who responds pursuant to mutual aid agreement; in Washington, the extent of recovery by a widow of the firefighter depends on whether the deceased was acting pursuant to normal firefighter duties, a mutual aid agreement, or as a member of a special search and rescue team; in Arizona, a city police officer injured while responding to a mutual aid agreement request is not limited to workers compensation relief because the mutual aid agreement does not transform requesting city into statutory employer of injured officer; in New Jersey, the court decision holds that local governments responding to an alarm pursuant to a mutual

aid agreement to be liable to estate of firefighter killed during fire in summoning municipality pursuant to such agreement (Reynolds 2003).

3.4 DETERMINANTS OF INTERLOCAL CONTRACTUAL ARRANGEMENTS

Strictly speaking there are no interlocal contractual arrangements unless officials who administer or govern the different units in different jurisdictions enter into an agreement with each other. Paul Peterson's (1981) notion of the “unitary interests of the limited city” notwithstanding, it is important to note that it is the people not local municipalities per se that made these arrangements. But no contractual arrangement is perfect in the sense that written contracts are never complete, subjecting local officials to uncertainty over the threat of litigation and political disputes. Consequently, to examine a local official’s decisions to enter into an interlocal contractual arrangement, either through a restrictive or adaptive contractual arrangement, we must consider the nature of the transaction in terms of the characteristics of the service involved, the composition and number of parties to an agreement, the political institutional characteristics, and the local politics that might influence local government decisions. The dilemma for local officials is to consider the forms of institutional arrangements that best produce their desired outcomes.

3.4.1 Characteristic of Goods and Services

Previous studies have shown that local governments’ decisions to enter into a contractual arrangement with the private or nonprofit sectors are based on their response to key characteristics of goods and services (Ferris & Graddy 1986; Post 2002; Stein 1990, 1993; Brown & Potoski 2003). In a private alliance, where firms are involved in interorganizational exchanges, the nature of assets affects the optimal configuration of contractual and relational governance mechanisms (Hoeker & Mellewig 2004; Gulati 1995). Following a similar logic, we argue that the likelihood that local governments will enter into interlocal contractual arrangements also depends upon the characteristics of goods

and services since neither party wants to expose itself to the inherent risks involved in a highly asset specific transaction.

As physical asset specificity increases, placing the transaction more at risk, a more complex and costly contract with a more sophisticated set of associated activities becomes worthwhile (Klein, Crawford, & Alchian 1978). According to the transaction costs theory, a transaction specific durable investment that cannot easily be redeployed to other uses would encourage local governments to enter into a restrictive contractual agreement in order to create mutually agreed upon (or a range of acceptable) behaviors, backed by the option of redress to the legal system in the event of disputes. This is important because, when local governments make mutual investments in specific assets, they create a mutual dependence. By placing credibly enforceable limits on the action of each party, a restrictive contractual arrangement constrains the subsequent ability of one party to extract additional rents from the other if one party should fail to perform as agreed. Note that the argument here is not on the amount of asset specificity but on the nature of that specificity. That is, as the asset specificity of service increases, local governments are more likely to opt for a clearer set of working rules to govern their transactions and thus, a restrictive form of contractual arrangement will be crafted.

On the other hand, when services involve knowledge-based specificity, local governments would prefer to enter into an adaptive form of contractual arrangement. Examples include standardized procedures, planning and mitigation strategies, technical reports etc. Specifying the exact processes and outcomes in advance for such services creates difficulties in the sense that they are costly to enforce in a legal system and economically costly to monitor. In addition, measurement problems hinder monitoring and effective enforcement because they require quantitative measures of what counts as an appropriate level of activity by a service provider, or the extent to which the services achieve their desired impacts. For example, what constitutes the best service qualities for fire suppression and prevention or emergency services is highly subjective, making outcomes of advanced planning and mitigation strategies difficult to include in a

restrictive contractual arrangement. In this circumstance, a more adaptive form of contractual arrangement will be established to govern local governments' transactions.

Transaction cost theory is not the only approach to analyze the form of interlocal contractual arrangement. A number of studies in industrial economics, inspired by the Resource-Based Theory, provided useful insights (Pastor & Sandonis 2002; Comino, Mariel, & Sandonis 2004). According to this approach, an organization is defined by the set of tangible and intangible resources it owns and seeks to optimize their combination. It can use the contract as a vehicle to gain access to other organizations' resources. The contract represents an effective way of accessing or transferring resources such as tacit knowledge, specialized skills, and technical know-how embedded in organizations, but not perfectly tradable in the spot market. The guiding principle in choosing which form of interlocal contractual arrangement to employ balances two effects: being able to produce valuable resources from another locality without losing control over its own resources.

Compared to a restrictive form of contractual arrangement, adaptive contracting such as mutual aid agreements in planning or mitigation efforts can provide the best opportunities to transfer embedded resources and therefore is more likely to be employed by a locality whose primary objective is that of appropriating or accumulating resources. Thus, an adaptive form of contractual arrangement is suitable for knowledge or a highly technical form of asset specificity.

3.4.2 Number of Collaborators

The number of collaborators participating in a contractual arrangement is also an important determinant to the form of interlocal contractual arrangement. But, the effects are ambiguous (Pisano 1989; Gulati 1995; Gulati & Singh 1998). On the one hand, the larger the number of collaborators, the greater the possibility of division of labor and specialization and thus the more likely local governments will cooperate and benefit from the agreement. On the other hand, the larger the number of collaborators, the greater the

difficulty of communication among the members and the less stable the interlocal cooperation.

The latter is based on the conventional wisdom that cooperation is less likely as more parties are involved in an agreement unless there are mechanisms whereby the parties can agree to make a binding commitment. This argument is directly related to Olson's (1965) notion of group size. It dictates the relative distributional gains, monitoring and enforcement costs of others' behavior. The smaller the group, the easier it is to form a contractual arrangement because there are fewer problems determining how benefits will be distributed. The monitoring costs will be lower and thus there will be fewer shirking problems. A large number of collaborators involved in a contractual arrangement will make the relative benefits to individual collaborators decrease. The higher the number of collaborators, the greater the organization costs, and the easier it is to free ride on the efforts of others. In short, the transaction costs are higher in a large collaboration leading to less stable interlocal cooperation unless the parties to an agreement enter into a legally binding contract, in this situation, a contract that sets out the obligations which particularly might be in a local government's best interest. The legal regime that induces the desired cooperative behavior is the one that enforces the promises to the letter.

A qualitative study conducted in Iowa by Irene Rubin (2004) reports evidence that local governments entering into a multilateral agreement require a level of ongoing participation to keep the service going and solve problems. The need for ongoing participation creates some informal limits to how many multilateral agreements can be entered into by localities. One of her interviewees reports that "the more parties you have to an agreement, the more time it is going to take to make sure you develop consensus. If you want to have a 28e government with multiple levels of government, local, and state, that is going to take more time too."

We anticipate that local government's decision to enter into a particular form of contractual arrangement is influenced by the number of potential collaborators because

size determines the costs of negotiating, maintaining, and enforcing a transaction. In a multilateral agreement the transaction costs are especially high if it is based on a restrictive form of interlocal contractual arrangement unless the reason for cooperation is based on long-lasting relationships. The extent to which this approach is feasible depends on whether there are pre-existing relationships that allow partners to an agreement to motivate others to contribute to the collective. Given the geographical proximity of local governments, pre-existing relationships may not be an immediate issue, but local politics often complicate future policy preference and thus affect the motivation for cooperation. When coupled with uncertainty that future circumstances may change, local governments may also find themselves trapped by the agreed set of rules--leading to a joint-decision trap. While the costs to renegotiate the existing agreement may be less with only two parties to an agreement, as the group gets larger, the costs to renegotiate the agreement also increase.

An adaptive contractual arrangement is an alternative arrangement for multilateral agreements that can avoid a joint-decision trap in the presence of uncertainty (Baird 1990; Gillette 1990; Scharpf 1998). It is also an alternative to costly pursuit of those mostly benefiting from the contract to renegotiate and adjust to an unanticipated change of conditions. In this situation, a flexible or adaptive contractual arrangement will be preferred because parties to such an agreement may best be able to behave flexibly according to changed circumstances. The fulfillment of the arrangement is generally nonobligatory, reciprocal, and yet easily terminated without legal consequences. It should encourage and maintain cooperative behavior (without the strict device of binding commitment as in restrictive contractual arrangements) by signaling intentions to punish defectors using informal norms. As a result, the transaction involved in renegotiating an adaptive contractual arrangement is less costly when calculated in terms of the number of collaborators as opposed to a restrictive form of contractual arrangement.

Empirical evidence of the effect of the number of parties joining an alliance on the form of governance structure does not always produces the predicted effect. While Pisano (1980) observes that a larger number of partners involved in an agreement makes

it more likely that an alliance will be based on relational contracting, Gulati (1995) and Gulati and Singh (1998) conclude that this variable has no statistically significant impact on the choice of governance form. By contrast, Oxley (1997) found a larger scope for an alliance has a significant and positive effect on the probability of relational contracting defined in terms of minority equity holding, i.e., agreement involves the sharing of equity.

3.4.3 Characteristics of Political Institutions

Political institutions can also influence a successful interlocal cooperation because they shape the information available and structure the incentives available for local government officials to enter into an agreement (Feiock 2005). There are two approaches to evaluate this proportion. First, administrators and elected officials each play a role in forging cooperative alliances with other local governments but they differ in their bargaining resources and institutional positions and thus, form of government influences the type of agreements that make with other localities. Second, the interactions between levels of local governments, city and county governments' relations, can also influence the type of agreements in the provision of services.

According to the first approach, political institutions, as defined by the form of government, provide certain incentives to local officials. The political and career incentives of local leaders have implications for their willingness to enter into cooperative arrangements and their attentiveness to the level and timing of collective benefits. Elected officials may be more inclined to enter into interlocal contractual arrangements if such actions would promise to bring some electoral benefits. LeRoux and Carr (2005) recently argued that when public demand for additional services is high, mayors or city council members may initiate resource sharing with other governments to provide the desired services without increasing taxes. Saving money through cooperation can serve as an important credit-claiming opportunity on which elected officials can stake their re-election bids. Elected officials may also favor interlocal cooperation as a means of bringing public visibility to a favored political issue.

Professional administrators, i.e., those generally found in a council-manager form of government, are also motivated to enter interlocal agreements, but for different reasons (Wood 2004; Thurmaier & Wood 2002; Bartle & Swayze 1997; Hirlinger & Morgan 1991). Sonenblum, Kirlin, and Ries (1977) suggest that professional administrators might be inclined to enter into interlocal agreements as a means of promoting minimum service standards in metropolitan areas. The ACIR (1985) reported that council-manager cities used interlocal contractual arrangements more than cities with other governmental forms. Frederickson (1999) argues that the longer tenure and long-range outlook of public servants creates incentives for joint action. Morgan, Hirlinger, and England (1988) found that the council-manager form of government has one of the largest effects on public safety contracting. One reason is that local council-manager government is more progressive or innovative in the contracting process. Stein (1990) argues that professional administrators may be motivated to engage in intergovernmental contracting in order to produce efficiency gains that help to establish their track record and pave the way for upward mobility. Bartle and Swayze's (1997) finding that the presence of a city manager is a highly significant determinant of interlocal cooperation also suggests the importance of political institutions in explaining the likelihood that professional administrators will enter into interlocal agreements on behalf of their constituents.

Although these studies add insights to our understanding that either political institutions influence the decisions of local officials to enter into an agreement or not, they seldom yield predictions as to which forms of contractual arrangements are more likely to get to the negotiation table and which ones do not. Depending on the type of services to be rendered, we argue that local governments, particularly those with council-manager form of government, are more likely to enter into restrictive forms of contractual arrangement than local governments that are dominated by elected officials (i.e., manager-council form of government). There are two reasons for this argument: first, agreements involving professional administrators tend to require detailed administrative attention. Elected officials are seldom the catalyst for such agreements. Second, elected officials are more concerned with interlocal activities that can yield a greater impact on the region and they generally would engage in those interlocal activities that can cut

across multiple jurisdictions. Hence, adaptive forms of contractual arrangements would be more preferred by elected officials than professional administrators because they are relatively easy to form without strict legal obligations and yet are broad enough to bring public visibility to their favored political issue.

We also expect interactions between city and county governments to influence the form of interlocal contractual arrangements chosen to govern their transactions. Several scholars have argued that cities are apprehensive of county governments because city-county relations are often beset by conflicts over turf and hostile takeovers, i.e., either through annexation or service consolidation attempts. This has implications for their relationships and thus influences the form of contractual arrangement chosen to govern their transactions. Under such conflictual relations, city-county government transactions are likely to be based on a restrictive form of contractual arrangement.

On the other hand, for certain type of goods and services, such as those services that have outcomes that are difficult to measure and yet have an immediate impact on the region, there are motivations to share the burden of providing them with other units of government. City governments would rather shift the burden to county government if they could diffuse costs and give the appearance of limited involvement in these services. Peterson (1981) argued that municipalities have an overriding interest in economic development and a disincentive to engage in redistributive programs. Bearing this in mind, cities are more inclined to enter into an adaptive form of contractual arrangement with higher level governments in redistributive programs or services, and once produced, would benefit the whole region. Mutual aid agreements on emergency responses that cut across multiple jurisdictions are examples of services that are likely to be rendered by county governments. Such arrangements usually are less controversial when compared to a more restrictive form of contractual arrangement that city governments would rather enter into with the county, state, or other higher governmental units in order to transfer or share the responsibility for such services.

What about the nature of county-county relations? Any contractual arrangements involving county-county relations can be regarded as an attempt to integrate the region as a whole. Multiple counties, when working together in the provision of public safety, can take advantage of redundancy in local emergency response in terms of capital resources and personnel. The capacity for region-wide services improves responses to emergencies and minimizes risk to local residents and businesses. Such region-wide arrangements are undersupplied, however. The number of mutual aid agreements between county governments has been limited to regional task forces and automatic disaster responses, regional planning, and mitigation strategies. Some agreements including two or more county governments also involved their respective municipalities, independent special districts (such as independent fire control and rescue districts and school districts), and nonprofit organizations such as medical foundations and churches. Activities covering such wide geographical areas involving relatively large number of multi-jurisdictional boundaries require a contractual arrangement that has a broad impact and yet is adaptive to conditions or changes. So, we would anticipate an adaptive contract to be most likely in interlocal relations involving county-county interactions.

3.4.4 Characteristics of Local Communities

According to Institutional Collective Framework, characteristics of communities such as the political, economic, and demographic composition of cities' population are salient to local governments' interest in, and ability to, negotiate interlocal contractual arrangement (Feiock 2005). City size influences the anticipated benefits of cooperation for certain types of services because the unit cost of service production is minimized when services are produced to capacity and costs spread over a large population. Larger governments generally possess greater tax base and access to capital markets as well as a larger population of service recipients. They also may have greater ex-post monitoring capacity (Kreuger 2005). This allows large cities to take advantage of scale economies. Smaller governments, with less resources and a smaller population of service recipients are less likely to be able to realize scale economies in service production (Hirsch, 1965; Levin & Tadelius 2004). This is particularly true for capital-intensive services (Post

2002). Both small and large units may benefit in agreements where one unit produces service for others and scale economies are realized.

Economic, social and political characteristics of community populations shape preferences for public goods and help determine the potential gains and transaction costs of entering into interlocal contractual arrangements. Homogeneity of preferences both within units and across units is also salient. Similar to individual collective action situations, there is an expectation that homogeneity across jurisdictions can signal potential common interests and service preferences. For the public officials that are the bargaining agents for their governments, knowledge that counterparts in other jurisdictions represent similar constituencies provides a better understanding of their counterparts' preferences and indicates similar political as well as economic interests.

Dye, Liebman, Williams, and Herman (1963), which examined interlocal contractual arrangements in Pennsylvania metropolitan areas and found evidence that interlocal cooperation is a function of the social and economic distance between communities. Agreements were greater in the semi-rural than the urban areas because of lesser social distance among localities than those cities located in urban areas. Agreements among these communities occurred because they have similar social status in the sense that they resemble each other more closely than do non-agreeing communities. Social status defined by the educational level of the working population in a community is an important factor in explaining the likelihood of interlocal cooperation because it generally reflects local communities' preference as expressed through their particular cultural and social styles of living. Based on this observation, because demographic homogeneity in a local government unit's population reduces agency costs for officials negotiating interlocal agreements on behalf of citizens, we can expect intra-jurisdictional homogeneity will increase the likelihood of interlocal contractual arrangements. Homogeneity of preferences within local government units is also likely to improve the efficiency of interlocal agreements by reducing agency costs.

One of the most important contextual factors is geographic location. Fixed geographic border requires repeat play among neighboring jurisdictions, and thus reduces transactions costs by creating interdependencies. Governments with common borders are not stuck in a one-shot prisoner's dilemma; the impossibility of exit means defection from cooperation exposes the defector to retaliation. The prospect of future play with the same party constrains opportunism so it is then in the interest of each government to cooperate with neighbors who cooperate. This provides opportunities for mutual assurances that each government will contribute to the provision of the collective good.

Cooperative actions with actors beyond direct neighbors can be more costly. Much recent work demonstrates that the welfare of suburbs is linked to the welfare of central cities. In theory, suburbs should be willing to join collective action that assists the central city out of a desire to protect their own financial well-being (Savitch & Vogel 2000; Post & Stein 2000). Nevertheless, each has a self-interested incentive to withhold contributions and free ride on those of others, with the result that no one engages in the conduct from which all would benefit. If joint action is advantageous because of the geographic range of spillover effects, affected governments may only participate in the agreement if all affected governments are included.

3.5 CONCLUSION

This chapter provides the theoretical ground for classifying interlocal contractual arrangements and the explanatory mechanisms for their decisions to enter into interlocal contractual arrangements fall into two general categories: restrictive and adaptive forms of contractual arrangement. According to the transaction cost approach, they are institutionally designed by involved parties to reduce the transaction costs of contracting. In order to understand local governments' decision to enter into either of these forms of contractual arrangement, i.e., the factors that explain local governments' institutional choice, four major contextual factors were developed: the nature of the services to be rendered, the number of parties to an agreement, the political and institutional characteristics of jurisdictions, and the demography, economic and social composition of the jurisdictions.

In the next chapter, we focus on interlocal contractual arrangements in the realm of public safety in Florida. Here, we become more specific on the substantive area of study by focusing on and exploring the different types of agreements used by local governments in the provision of public safety under the specific regime of the state statutes. In addition to the contextual factors that explain local government's decision, state statutes are influential in assisting local governments to make an institutional choice. That is, Florida's state statutes illustrate the effect of a state's procedural requirements in explaining local government's institutional choice. We also explore the politics behind local government's decisions in making such a choice and determine the reasons certain forms of contractual arrangements may be preferred over another.

CHAPTER 4

INTERLOCAL CONTRACTUAL ARRANGEMENTS IN THE PROVISION OF PUBLIC SAFETY: THE CASE OF FLORIDA

While interlocal contractual arrangements in the provision of public services and goods are increasingly common across the country, interlocal cooperation on the provision of public safety involving the police, fire services, and emergency medical services have proven far more difficult to achieve (Carr & LeRoux 2005). Public safety contracting presents a dilemma for public managers. On the one hand, local governments devote a substantial budget to these services. Yet, given the importance of public safety expenditure in the budgets of local governments, it may be impossible to reduce the costs of local governments without reducing spending on police and fire services. The fear of lost jobs and lower quality of services will often make interlocal contracting highly controversial in the community. Also, collaboration involving police and fire services often cuts across political and administrative boundaries making any collaborative effort susceptible to interlocal politics. Unlike other service areas where the contractors may be private or non-profit organizations, public safety contractors are often other local governments themselves and the baggage of their past conflicts and rivalries may thwart any possible interlocal collaborative efforts.

In the realm of emergency management, Roger Park's (1990) study of interlocal cooperation (a contract, joint service agreement, and mutual aid as a means to facilitate interlocal cooperation) between the city of Pittsburgh, Pennsylvania and Allegheny County's 250 volunteer fire departments argued for the importance of interlocal contractual arrangements that could increase available resources and expertise to cope with emergencies. More recently, Phil Lynn (2005) pointed out that mutual aid agreements are important for a region to address the threats of international and domestic

terrorism and that they are a “key component of the National Incident Management System, which provides the framework for emergency response” (Lynn 2005: vii).

However, to get local governments to enter into interlocal contractual arrangements on emergency management issues is also difficult, at best, because of the: (1) high diversity of and uncertain risk from hazards and disasters; (2) low salience of emergency management as an issue with historical resistance of local governments to regulation and planning as well as an economic and political milieu inhospitable to expanding government activities; and (3) technical complexity of some regulatory, planning, and response efforts (Waugh 1990, 1994; Petak 1985; Cigler 1999; May & Williams 1986). While effective preparedness and mitigation programs require the willingness and capacity to plan and regulate land use and building codes cutting across region-wide political boundaries, such region-wide regulatory efforts often involve political wherewithal, especially when there are strong local interests opposing any regulatory limits on issues such as coastal development and restriction of building codes.

In the realm of law enforcement, fire rescue, and emergency medical services, local politics often create barriers to establishing interlocal contractual arrangements. In Indianapolis, Indiana, for example, the politics of interlocal contractual arrangements generate heated debates over who should have authority to control the provision of the services. A proposal to merge the Indianapolis Police Department with Marion County generated controversy in 2003 between the Fraternal Order of Police President and the City-County Council. The opponents of police consolidation argued that a three-person committee to oversee the transition to a merged department would result in a lack of clear leadership; this arrangement according to the opponents, would be similar to a “three-headed snake” (Indianapolis Star, 13 November 2005)³. In Florida recently, the proposal to merge fire rescue and paramedic services under the Broward County Sheriff’s Office faces opposition from the Union, which argues that “Broward County government has not maintained the integrity of the port’s fire delivery system” and “they [the County

³ Ostrom, Park, and Whitaker’s (1973) study of local community control of police in Indianapolis has suggested higher levels of police performance in small-scale independent communities when compared to a large scale city-wide police force.

Board of Commissioners] have no commitment to make this department better” (Miami Herald 2003). This was contrary to a previous effort when an interlocal agreement was entered into by 20 cities in Broward County. Here, they consolidated their mutual fire aid services in 1985 and subsequently, the fire mutual aid service was operating under one fire chief or his designee from each of the participating parties.

Take another example. In Leon County, Florida, touting the success of its Emergency Medical Services system, Leon County officials have been making a pitch to take over the role of the Tallahassee Fire Department (Tallahassee Democrat 2005). Headlined by the local newspaper as the “politics of take over,” the debates are affecting renegotiation of previous contractual arrangements in the provision of fire services. In their previous agreement, it was agreed that Tallahassee Fire Department handling fire services throughout Leon County would receive reimbursement from the County as considerations for the services. The payments have not been forthcoming; subsequently, the Tallahassee Fire Department with its \$23.5 million budget has been providing fire service to residents who live outside the city limits and that the service has been subsidized by city taxpayers (Tallahassee Democrat 2005). The “politics of take over” is affecting the renegotiation of previous agreement, i.e., the Advanced Life Support (ALS) agreement. According to City Commissioner Allan Katz, who has been charged with the unenviable task of trying to get the county to consider renegotiating the fire-services agreement, the suggestion that the county take over fire “doesn’t help negotiations ... I don’t think our firefighters want to become county employees, and I don’t think the city wants to give up the Fire Department. I would be very surprised if something like that would happen” (Tallahassee Democrat 2005).

4.1 PUBLIC SAFETY AND INTERLOCAL CONTRACTUAL ARRANGEMENTS IN FLORIDA

Conventional wisdom suggests localities are highly competitive with each other because they face greater obstacles to divide bargaining surplus from cooperative efforts. Yet, municipalities are most vulnerable to the incidence of urban crimes and often the one to act as frontline responders during emergencies. Although they share similar

concerns, their attempts to improve conditions are impeded by dilemmas of collective action because competitive jurisdictions will act strategically to capture the greater share of the surplus. But this is a constrained view in the sense that some studies have shown local governments are most competitive in developmental programs rather than allocational programs such as public safety (Peterson 1981; Schneider 1987)⁴. This might not often be the case.

Getting local governments to enter into contractual arrangements with other jurisdictions given the potential loss of local autonomy and control in meeting community needs is also beset by local politics. That is, the range of interlocal contractual arrangement in the provision of public safety services is really about choosing the appropriate rules of the game that define who should provide what and at what costs. In fact, the decision of local government to enter into interlocal contractual arrangements is more than that: It is about taking control of another jurisdiction's functional responsibilities; it is about the ability to expand administrative boundaries without altering political boundaries; it is about how far and how wide a provisional unit can distribute its administrative muscle. Through interlocal contractual arrangements, local officials can discover ways to maximize their individual welfare, guaranteeing for themselves benefits that these arrangements allow them to receive regardless of whether these arrangements benefit society as a whole (Knight & Sened 1995; Feiock & Carr 2001). In that process, local governments are caught between two conflicting trends: rising demand for urban services and declining local government capacity and the potential loss of local autonomy and control in meeting community needs.

In Florida, the need for local governments to work together occurs out of demands made by a rapidly growing population, state mandated services, and/or fiscal constraints (Bradley 1994; Florida Commission on Local Government II 1998). The rapid economic and population growth in Florida complicates the politics of urban governance and administration because "growth manifests itself" (Bradley 1994: 279). It affects the

⁴ While developmental programs can enhance the economic position of a community; allocational programs can benefit the whole community without affecting much of the local economy.

delivery of local services, the possibilities of social injustice, the relations among governments, and the very nature of urban problems which must be faced together. Florida's state mandates require local governments to perform various services without commensurate funding and the problem with Florida's local tax structures is that they do not keep pace with the rising costs associated with urbanization (Florida Commission on Local Government II 1998). Both have significant effects on local governments' abilities to fund local services and thus affect the likelihood of interlocal cooperation.

The dilemmas to cooperation would have been considerably more acute without the flexibility in other State statutes that reduced the costs of developing and maintaining such arrangements (Florida Commission on Local Government II 1998). State can also provides a process for municipalities, counties, and special districts to resolve conflicts regarding the delivery and financing of local services through state statutes. They allow local governments to resolve disputes with other governmental entities before litigation is filed. State statutes are also important because they provide guidance about what can be expected of local governments, especially when attempting to form an interlocal contractual arrangement. In other words, because local governments are essentially creatures of the state, one must look to state constitutions and to state statutes for an understanding of the framework for interlocal cooperation. That is, state laws provide a range of institutional choices for local governments attempting to work collectively across multiple jurisdictions; they have an effect on their decision to be either involved in joint activities or to act independently.

4.2 FLORIDA'S STATUTORY FRAMEWORK

4.2.1 Florida's Interlocal Cooperation Act

The expansion of interlocal service agreements in Florida came with the passage of the "Interlocal Cooperation Act of 1969" (s. 163.01, Fla. Stat.). The Act provides a *broad* legal framework for local governments to enter into agreements with either the public or private sector. The identified benefits of this Act to local governments is to reduce the risk from litigation, especially in areas relating to utility coordination, school

concurrency, gas tax splitting, planning issues and annexations (FLCIR 2001). Florida's Interlocal Cooperation Act reflects a general law allowing a mix of approaches adopted by local governments to deliver public services, and this has led to an extensive use of it by county governments in Florida (Florida Advisory Council on Intergovernmental Relations 1991:85). Motivated by fear of litigation and legal liability, most local governments protect themselves by confining interlocal service agreements to a specific entity when conducting continuous governmental functional responsibilities. Under Section 163.01(5) Fla. Stat., the Act provides broad terms and definitions under which interlocal agreements may be entered into, including but not limited to the purpose, duration, organization, and manner by which contracted parties will provide financial support and disbursement of funds (FLCIR 2001).

Interlocal agreements, or restrictive forms of interlocal contractual arrangements, have been used by local governments in Florida on any existing or proposed arrangements for service delivery, i.e., when a municipality annexes an area within an independent special district and county government to address service delivery issues, real estates assets, equipment, and personnel. This Act is also pursuant to Section 171.093, Fla. Stat. In a case involving a special district, if a municipality proceeds with the annexation in the absence of an interlocal agreement, the special district continues to provide service for a 4-year period and will receive an amount from the municipality equal to the *ad valorem* taxes or assessments that would have been collected on the property. In this instance, it is to the municipality's best interest to establish an agreement with the special district on the equitable distribution of property assessment. In a situation when annexation involves a county government having jurisdiction over an enclave, the State statute encourages a local government to adopt a more restrictive form of contractual arrangement such as an interlocal agreement in order to expedite the annexation of the enclave into an appropriate municipality if the land area is 10 acres or less in size. However, such provision does not apply to underdeveloped or unimproved real estate (The Florida Senate 2004).

Interlocal service agreements, although somewhat restrictive, are most important in two arenas: (1) when local government makes a permanent transfer of total responsibility for the provision of a service to another governmental unit such as functional consolidation (ACIR 1985; Atkins 1997; FLCIR 2001); and (2) when transactions involve some forms of exchange for payments, revenue sharing, or impact fees. The contractual arrangements for these transactions, as authorized by the Act, are legally binding. This is particularly important because, unless an interlocal agreement is very specific, the passage of time and the “changing of the guard” of local decision makers can erode and obscure the original basis of an interlocal agreement, potentially causing significant problems for those left to interpret its original goals (FLCIR 2001).

4.2.2 The Growth Management Act

Another important state statute designed to offer intergovernmental relations a higher priority is Florida’s “1985 Local Government Comprehensive Planning and Land Development Regulation Act,” amended in the 1990s (Growth Management Act). Under this Act, the “Intergovernmental Coordination Element” is a mandatory element of a local government comprehensive plan, which ultimately created a state requirement for local governments to coordinate planning activities with school boards, regional agencies, and state government.

According to Florida’s Legislative Committee on Intergovernmental Relations (2001), the Growth Management Act has “had a significant impact” on interlocal coordination in two ways: First, it has increased the use of joint planning agreements, which are agreements local governments enter into in order to plan for an area prior to its becoming available for development such as in the provision of water and sewer services, mutually maintained traffic corridors, police and fire protections, or mitigation strategies. For example, municipalities and counties have been known to reach joint planning agreements relating to the provision of water and sewer services, mutual maintained traffic corridors, police and fire protections, and a variety of other type of governmentally-provided services. Second, it has made it mandatory for municipal

governments to enter into interlocal service agreements for planning coordination purposes, especially service responsibilities that potentially enhance the role of county government. They are signed by local governments in the event of an emergency or prior to a particular piece of land becoming available for development. Local governments negotiate and set standards or limitations on what actions can be taken by the parties involved.

Both joint planning agreements and interlocal service agreements formed by localities in compliance with the Growth Management Act can potentially benefit local governments in several ways. In a broader sense, both forms of contractual agreements can provide valuable information about localities' growth management activities because so much of local governments' activities are unobservable to most state agencies. By entering into these contractual arrangements and reporting them in the Intergovernmental Coordination Element, they are akin to building local governments' reputations, their values are in the visibility of local governmental actions to cooperate and interact with regional agencies, state departments, and other local jurisdictions. Aside from the advantages of economies of scale, elimination of duplicative local government services, and increased effectiveness of growth management, the interlocal agreements incentive lies in eligibility requirements for participation in state or federal programs where coordination with other governmental entities is a prerequisite (Lynn 2005).

There are several differences between these two types of contractual arrangements, however. First, local governments entering into a joint planning agreement have often been assumed to have a strong commitment to a formal and an ongoing relationship. That is, each party to a joint planning agreement is satisfied that the other units of governments have consistent policy preference with each other. To some extent, compared to an interlocal service agreement, local governments entering a joint planning agreement generally take on a certain risk of incompatibility of policy preference especially in the execution of the agreement. Second, in contrast to an interlocal service agreement, joint planning agreements are less likely to involve a relinquishment of local police power or other governmental autonomy. For example, law enforcement activities that cut across

multiple jurisdictions encourage ongoing involvement, though it may be more costly, and have the added benefit of making it more likely that each unit will be able to ensure compliance with local governments' goals and interests. Again in contrast to interlocal service agreements, because of the cooperative implementation of a joint planning agreement, in the realm of public safety, the danger of subversion is minimized (Reynolds 2003).

4.2.3 Florida Mutual Aid Act

The third most important state statute can be found in Part I, Chapter 23, Florida Statutes, the "Florida Mutual Aid Act," which authorizes local and state law enforcement agencies to enter into a mutual aid plan, i.e., to provide for the coordination of law enforcement planning, operations, and mutual aid across jurisdictional lines. The Legislature determined that, under Section 23.121(1)(g), Fla. Stat., it is necessary "[t]o allow a law enforcement agency to enter into a mutual aid agreement with another law enforcement agency of this state or any other state or with any law enforcement agency of the United States or its territories." It is important to note that mutual aid agreements in Florida can be classified into three general categories (FLCIR 2001): (1) Operational assistance agreements between law enforcement agencies or between one or more law enforcement agencies and school boards that employ safety officers for the rendering of assistance in a law enforcement emergency, (2) Voluntary agreements used by local law enforcement agencies in protecting lives and property in event of disaster or emergency, and (3) The combination of both types of agreements.

One of the reasons why local governments might enter into these types of contractual arrangements is because the terms and conditions of such agreements are generally non-obligatory; participation in the agreements is also generally voluntary and reciprocal. The agreements are flexible and adaptive in the sense that their usage is for sharing of capital outlay and personnel resources. But note that mutual aid agreement is somewhat limited in scope when it is related to a contract for law enforcement services. For example, Florida's Attorney General Opinion 96-78 stated that a city may not use a

mutual aid agreement for complete assumption of law enforcement services in an adjoining municipality. Compared to interlocal service agreements that emphasize the fulfilling terms of an agreement in the provision of continuous governmental functional responsibilities, mutual aid agreements have generally been regarded as a way local governments can share resources during an emergency without fear of being locked in to a contractual trap. Furthermore, mutual aid or operational assistance agreements “are operative only when certain conditions come into existence and they remain in operation only so long as these conditions are present” (Bollens & Schmandt 1965:77).

Local law enforcement agencies are motivated to craft mutual aid agreements or operational assistance agreements for four reasons: (1) when emergency conditions come into existence and, upon request, employees of a law enforcement agency rendering aid outside their jurisdiction pursuant to the written agreement would have “the same powers, duties, rights, privileges, and immunities as if the employee were performing duties inside the employee’s jurisdiction.” The agreement allows a law enforcement agency to provide assistance beyond its political boundaries; (2) a local agency rendering aid outside its jurisdiction would also be able to request reimbursement of the actual costs of providing the mutual aid either from the requesting jurisdiction or the state or federal government; (3) they would have the benefit of accumulation of resources, especially when the capacity for local emergency services to respond to a large-scale regional event is questionable. Mutual aid and operational assistance agreements focusing on developing redundancy in local emergency response resources and personnel can limit the need for, and reliance upon, geographically-distanced assistance especially during the initial stages of an emergency; and (4) the benefits also flow from the adaptive features such as non-mandatory requirements for assistance and the incentive of not holding them liable for anything that might happen in the process of trying to help, especially in the event of emergency. In an area of mutual concern, services identified are highly specific in nature and yet the contractual arrangement does not require a complete assumption of authority by the other jurisdictions.

As for the emergency medical services, in addition to written contracts and interlocal service agreements, an EMS provider can respond and render services under a written mutual aid agreement at the request of a signatory to the agreement during a major emergency. Other state statutes also encourage interlocal cooperation such as Chapter 252, Fla. Stat., known as the State Emergency Management Act⁵. Although this Act may also apply to the provision of fire rescue, it only applies to cooperation during an event of emergency. However, there are very few guidelines for fire departments (voluntary or otherwise) and communities wishing to establish cooperative relationships in Florida. For example, according to a special report by the Office of Program Policy Analysis and Government Accountability (OPPAGA 2001: 7), currently the state of Florida provides “limited guidance to fire departments seeking to strengthen their local fire protection planning, coordination, and cooperation.” Under Chapter 191 Fla. Sta. that governs special fire districts, for example, the statute suggests but does not require special fire district fire chiefs to “organize and meet as a county fire chiefs’ association to coordinate the planning and activities of all entities that provide fire protection and suppression services.”

However, a more restrictive contractual arrangement may also be used. Interlocal service agreements, for example, in the provision of fire suppression and prevention services are often crafted when institutional arrangements such as merger or functional service consolidation are considered. That is, they are often used in transactions involving a limited set of standardized goods and services for a stable, relatively unchanging market.

There are several advantages when two or more independent fire districts cooperate through interlocal service agreements, i.e., for temporary merger or joint

⁵ After Hurricane Andrew in 1993, the Department of Community Affairs developed and implemented a statewide strategy to reduce the deficit of suitable public shelter spaces and began to develop a statewide evacuation and sheltering plan. The state developed and distributed the Statewide Mutual Aid Agreement to municipalities and counties to enhance intergovernmental coordination. That is, after execution, participating counties and municipalities “can use it to request resources, be reimbursed for resources requested of them, track their use, etc” (Florida Department of Community Affairs 1995: 29). According to Elliott Mittler (1997), the Department of Emergency Management received 122 submissions of the Agreements, of which 84 have been approved for sufficiency, and 38 are pending approval upon verification of additional information in 1997.

production as a single entity, or consolidation of functional services. According to the special report in Manatee County by OPPAGA in 2001, benefits are realized when fire departments can spread their combined labor pools and fixed costs over larger service areas, purchase equipment and apparatus in bulk, and even alleviate the need to build a new fire station in an area of growth, especially if another department already has a station in close proximity to the area. One significant advantage is related to an improved insurance rating from the Insurance Services Office (ISO) for all parties involved in such arrangements. Good insurance ratings are often used as benchmarks for measuring the effectiveness of fire protection services and help insurance companies establish premiums for fire insurance and thus benefit from cost savings associated with sharing administrative expenses and working jointly in the provision of fire rescue at the regional level.

4.3 MAKING SENSE OF INTERLOCAL CONTRACTUAL ARRANGEMENTS

For a better sense of a range of interlocal contractual arrangements used by local governments in Florida, consider a combined mutual aid/operational assistance agreement in the realm of public safety. The agreement is aimed to coordinate multiple-jurisdiction activities in an event involving an emergency response to bomb threats, explosives, hazardous devices, and weapons of mass destruction in the Florida Big Bend region. Under the Big Bend Bomb Squad agreement authorized by Section 23.12, Fla. Stat., a front line task force was established in 2005 consisting of four law enforcement agencies in Leon County: the State of Florida Division of Fire Marshals, Florida Department of Law Enforcement (Division of Capitol Police), Leon County Sheriff's Office, and Tallahassee Police Department. The agreement promulgated standards of conduct targeted to produce public benefits through a redundancy in local emergency response resources and personnel because a local emergency service's capacity to respond alone to a large scale event was questionable. As the producer of this service, the task force responsibility remains in Leon County at all times and may provide first line response to the other 12 counties in the Big Bend region only upon request.

Take another example. In 2002, an Evidence Storage agreement was entered into between Leon County Sheriff's Office and the Florida Department of Transportation. A relatively straightforward agreement, the contractual arrangement involved two signatories and provided temporary access for the Florida Department of Transportation to store the department's property/evidence on a large shelf within the Sheriff's evidence storage vault. No financial transfer was involved in this agreement, but the obligations specified in the contract were unique only to this agreement such as the familiarization training regarding submission procedures and retrieval of evidence, packaging of evidence, identifier log, and firearms. The highly-specified working rules gave protection to both parties in the event of any claims if any of the signatories should default. Contrary to the mutual aid agreement, the evidence storage agreement between two public organizations provided specific safeguards to both parties' legal rights.

We observe several differences between these two contractual arrangements. First, the Mutual Aid/Operational Assistant Agreement has often been used by local governments in protecting lives and property in the event of disaster or emergency. They are voluntary and reciprocal arrangements and not obligatory; therefore they are more flexible in their usage of resources compared to interlocal agreement or contracts. They emphasize fulfilling the terms of an agreement rather than protecting lives and property. Each party agrees to provide mutual support in a specified area when requested, e.g., for emergency management provisions. As mentioned earlier, these forms of institutional arrangements are usually limited to a particular type of emergency. It is also understood that a city entering into a mutual aid agreement is under no obligation to furnish aid when requested if such aid will endanger or jeopardize its personnel. However, as has been pointed out by Lynn (2005), it is difficult to imagine an instance in which a jurisdiction in critical need of assistance would not be provided with assistance by neighboring governments even if the requesting jurisdiction had elected not to participate in a mutual aid agreement. Under such circumstances, the responding jurisdictions, without the benefit of a written mutual aid agreement, would provide services and resources at their own risk.

A mutual aid agreement is not limited to an arrangement involving multiple agencies interested in forming a special regional task force. In an instance when local law enforcement must enforce traffic law uniformly across political boundaries, local governments may also enter into a mutual aid agreement. For example, in Pinellas County where there are twenty-four municipalities but only twelve have their own police departments, municipal police departments would be able to enforce laws uniformly throughout under a mutual aid agreement. However, such a mutual aid agreement must specify the nature of the law enforcement assistance that will be rendered, the agency or entity that will assume liability arising from acts performed under the agreement, the procedures for requesting and authorizing assistance, the agency or entity with command or supervisory authority, the duration of the agreement, any compensation or reimbursement due an assisting agency, and any other terms and conditions necessary to effect the agreement. The main point here is that a mutual aid agreement is partly an adaptive contractual arrangement in the sense that when it is related to general law enforcement, a local law enforcement agency does not require the transfer of law enforcement powers from one municipality to another (Attorney General Opinion 2002-46, 2002). Practically, in this instance, a law enforcement agency from one jurisdiction could not exercise traffic control or investigate a traffic offense in another jurisdiction without informing the other jurisdiction of its actions. Such a requirement usually is addressed in the mutual aid agreement.

Second, interlocal contractual arrangements used by local municipalities to manage regional activities also vary. They depend upon the nature of the problems parties to the agreement seek to resolve and the possible outcomes of the transactions. For example, a bomb squad task force is a rare event but the provision of the service benefits surrounding counties in terms of capital outlay; while a storage vault facility benefits only a specific entity in conducting continuous governmental functional responsibilities. The latter serves to resolve the state agency's lack of storage space. Although, a region-wide task force such as a bomb squad task force under the mutual aid agreement may provide the region with a task force, other region-wide task forces may not be based on the mutual aid agreement. For example, an interlocal agreement, which is a more

restrictive form of contractual arrangement, was used in 2000 to establish the North Central Florida Regional Hazardous Materials Response Team by the cities of Gainesville, Starke, and Lake City and the counties of Alachua, Bradford, Columbia, Gilchrist, and Union. The agreement is more restrictive than the Big Band Bomb Squad task force in the sense that it actually specifies that the “regional response team ... *will respond*, on request, to hazardous materials incidents which occur within the incorporated and unincorporated areas of the five-county area.” It also establishes rules regarding membership, representative, and voting procedures as they are related to elected officials and the by laws of the regional respond team. The agreement also provides a detailed procedure involved in terminating monetary and non-monetary obligations if one member should decide to withdraw from the respond team.

Third, the type of arrangement chosen defines the scope, stringency of requirements, and the degree to which local governments can enforce their claim if signatories default; this therefore shapes the number of contractual ties local governments enter with their neighbors. In other words, the type of contractual arrangements determines the number of ties/relationships formed. For example, the number of ties for storing evidence between Leon County’s Sheriff and the Department of Transportation only involves two signatories (a bilateral agreement); the bomb squad mutual aid/operational assistant agreement has 16 signatories (multilateral agreement) because, in the latter, an additional participant added to the agreement does not add to the marginal costs of supplying the service. On the other hand, given the nature of the emergency and the significant investment in equipment, personnel, and financial resources involved, an interlocal agreement may be drafted specifying procedures for reimbursement for the actual costs to the respective parties regardless of the number of parties in the agreement.

A particularly interesting interlocal agreement established between Cape Coral and Lee County Board of County Commissioners addresses the county’s hurricane shelter deficit. The county established an Adopt-A-Shelter Program, which promotes both public and private sector partnerships in providing basic shelter management services. In

this agreement, both parties agreed that the City of Cape Coral will furnish the necessary personnel to operate a county emergency public shelter. In return, the City of Cape Coral employees trained in shelter management operations and their family members can stay at a designed facility or like facility for shelter purposes. The County will reimburse the City for actual costs involved when City's employees are used in providing public shelter management operations at the County managed emergency public shelter. The specific costs include hourly wages and specific mandatory benefits. The agreement would also allow the County to seek emergency or disaster public assistant funds from state or federal government. Any available funds the County might receive from the federal or state government will be retained by the County to reduce any costs paid to the City. The agreement remains in force for a period of three years.

One of the problems with restrictive contractual arrangement is that any changes or modifications to such an agreement require the writing and signing of another agreement--involving another round of negotiation. For example, the City of Cape Coral and Lee County entered into an Amendment and Change Order to an interlocal agreement set in 1995 for the purpose of providing fire protection service to properties located within the Burnt Store Area Fire Service Municipal Service Taxing Unit (MSTU). Due to population growth and increased construction activities in the MSTU, the city of Cape Coral experienced an increase in operating costs and has increased the number of personnel assigned to provide services to the area within the MSTU. The County, on the other hand, prefers that the City expand its responsibilities within the boundaries of the MSTU to include the provision of fire prevention services for other than one and two-family residents. An interesting insight about the interlocal agreement is that most of these services stated in the agreement are governmental responsibilities, mandated or required by the State. Although interlocal agreements generally are somewhat specific and restrictive in their stated considerations, the process involved is not trivial; it defines the scope, stringency of requirements, and the degree to which local governments in Florida can enforce their claim if signatories default.

4.4 INSTITUTIONAL CHOICE: RESTRICTIVE AND ADAPTIVE FORMS OF INTERLOCAL CONTRACTUAL ARRANGEMENTS-EVIDENCE FROM FLORIDA'S URBAN COUNTIES

So far we have argued that Florida's state statutes can encourage municipal and county governments to enter into contractual arrangements. These statutes have provided a foundation for further interlocal cooperation in the provision of services because they allow a mixed approach to cooperation. To capture the different forms of interlocal contractual arrangements structuring metropolitan governance, we classified the different types of agreements into two general forms: restrictive and adaptive. Conceptually, an adaptive contractual arrangement is viewed as a relational contract or a contract that displays adaptive features. An agreement is adaptive to the extent that it can accommodate unanticipated changes in future conditions (Gillette 1990; Baird 1990; Maser 1998; Heckathorn & Maser 1987). Baird (1990) examines a "flexible contract" in terms of local governments' ability to diversify risks when entering into agreements in the presence of uncertainty; while Sclar (2000) considers a flexible relational contract as an agreement established by parties in complex settings that leave the details to be filled in later. It is advantageous to a local government because it specifies the activities to be rendered without unnecessarily intruding on the authority of the other jurisdiction. It is nonobligatory, voluntary, and easily terminated without legal consequences to either party.

Alternatively, municipal and county governments can choose a more legally-binding contract in the presence of regional politics and avoid future disputes by using more restrictive forms such as interlocal service agreements, contracts or leases. A contractual arrangement is restrictive to the extent that all negotiating parties can come to a consensus on the effectiveness of an agreement that governs their transactions. To be effective, the arrangement must be backed up by specific state statutes that are feasible to defend (in an economic and legal sense) in the legal system. The contractual perspective would posit that such contractual arrangements promote stability and decisiveness in a transaction because the set of working rules determining specific outcomes produces stability to all parties involved in the arrangement.

From the various interlocal service delivery reports, which is discussed further below, we found the following types of interlocal contractual arrangements were commonly used by local governments in the provision of public safety: informal interlocal agreements based on mutual understandings or letter of agreement to assist other jurisdictions “upon verbal request”; Memorandum of Understanding, typically used to establish general guidelines for a specific locally-coordinated activity; intergovernmental coordination agreement or interlocal service agreement that establishes a formal agreement between governments on specific roles and responsibilities and; mutual aid/operational assistance agreement between jurisdictions on public safety services that cut across multiple political boundaries. Other types of contractual arrangements include contracts or leases, permit agreements, local ordinance, joint planning agreement, and resolutions. The different approaches define the scope, stringency of requirements, and the degree to which local governments can enforce their claim if signatories default, and thus encourage cross-jurisdictional activities to span administrative and political boundaries.

In the following section, we test whether local government’s decision to enter into a restrictive or adaptive form of contractual arrangement is influenced by interlocal relations, the characteristics of goods and services, functional service area, and the number of collaborators in the provision of public safety using logistic regression model. Utilizing the data compiled by the Florida Department of Community Affairs from various *Interlocal Service Delivery Reports* prepared by 33 county governments with a population greater than 100,000 residents, we identified 2,251 different types of contractual arrangements in the provision of public safety. Our results show that there is a positive and significant association between city-county relations and the form of interlocal contractual arrangement. There is evidence to suggest that when a specialized investment is required in the provision of public safety services, a restrictive form of institutional arrangement will be preferred; and when measuring and monitoring the outcomes of the services are relatively difficult, a more flexible or adaptive form of institutional arrangement will be preferred. We note that there are some underlying

relationships between the forms of institutional arrangements utilized by local governments to govern their institutional ties and the characteristics of goods and services. Homogeneity of a single functional service area represents similar policy preferences affecting the transaction costs of negotiating, operating, and enforcing contractual arrangements; so did the number of collaborators involved in an agreement.

The rest of this chapter is organized as follows: the next section develops testable hypotheses based on arguments developed in Chapters 3. Following this section, the chapter then explores the data used in the analysis and statistical models to test the general hypotheses. The results and the implications of our findings are discussed against the backdrop of the general objective of this dissertation. That is, on the formation of metropolitan governance.

4.5 TESTABLE HYPOTHESES

4.5.1 Characteristics of Goods and Service Effect

Our key test is on the effect of characteristics of goods and services. Previous studies suggesting that local governments choose different types of contractual arrangements are based on their response to key characteristics of services (Farris & Grady 1986; Post 2002; Stein 1990; Brown & Potoski 2003). In the study of private alliances, where firms are involved in interorganizational exchanges, empirical studies have also shown the extent to which the nature of assets effects the optimal configuration of contractual mechanisms (Hoeker & Mellewigt 2004; Gulati 1995). Following similar logic, we argue that the likelihood that local governments will enter into interlocal contractual arrangements also depends upon the characteristics of goods and services since neither party wants to expose itself to the inherent risks involved in a highly asset-specific transaction.

If the nature of the goods and services involved in a transaction is physical asset specificity, placing the transaction more at risk, a more complex and costly contract with a more sophisticated set of associated activities becomes worthwhile (Klein, Crawford, & Alchian 1978). Here, a restrictive form of contractual arrangement is likely to govern the

transaction. On the other hand, when the transaction involved is related to knowledge-based specificity or outcomes that are difficult to measure, local governments would prefer to enter into an adaptive form of contractual arrangement. To specify the exact processes and outcomes in advance in such services leads to difficulties in the sense that they are costly to enforce in a legal system and economically costly to monitor.

4.5.2 Interlocal Relations Effect

Do interlocal relations affect local government's decision to enter into a particular form of interlocal contractual arrangement? To answer this question, we focus on three levels of political and administrative boundaries--county-county, county-city, and city-city relations--and we seek to understand how these relations have affected the forms of interlocal contractual arrangements.

First, the choice of interlocal contractual arrangements is explained by city-county relations involving municipal and county governments. Research on intergovernmental relations has long identified the importance of vertical integration in the area of planning for emergency and policing activities (Waugh 1994; Rubin & Barbee 1985), regional cooperation (Savitch & Vogel 1996), or city-county consolidation. County-city relations in Florida are often beset by conflicts over turf and annexation problems. For example, when streets bordering another city lie within an adjoining municipality, it may make sense to standardize planning efforts uniformly throughout a patchwork of fragmented jurisdictions but it is less sensible for any single jurisdiction unwilling to forgo control or autonomy. Municipal and county governments can choose a legally-binding contract in the presence of regional politics to avoid future disputes. A negative and significant association between city-county relations and the form of contractual arrangement suggests a preference for a more legally-binding contract with clearly-stated working rules.

Second, the choice of interlocal contractual arrangements is explained by city-city relations. Such arrangements aim to integrate local municipalities operating within or

across county political boundaries. Local municipalities are most vulnerable to the incidence of urban crimes and often act as frontline responders to emergencies. However, conventional wisdom suggests that localities are highly competitive and face greater obstacles to dividing bargaining surplus from cooperative efforts. They share similar concerns, but their attempts to improve conditions are impeded by collective action problems. For example, competitive jurisdictions will act strategically to capture the greater share of the surplus (who should get the credit). Specifically, each is likely to use private information about costs incurred and benefits gained from any joint project to indicate why it requires certain concessions to make participation worthwhile. Hence, contractual arrangements between municipal governments are likely to be based on a clear set of working rules governing transactions in order to secure distributive surplus.

Third, the choice of interlocal contractual arrangements is explained by county-county relations. These arrangements integrate the region as a whole when multiple counties working together take advantage of redundancy in local emergency responses, resources and personnel. The capacity for region-wide services improves responses to emergencies and minimizes risk to local residents and businesses. Activities covering a large and multi-jurisdictional boundary require a contractual arrangement that has a broad impact and yet is adaptive to conditions or changes. So, we would anticipate an adaptive form of interlocal contractual arrangement to be most likely in intergovernmental relations based on county-county interactions.

4.5.3 Number of Collaborators Effect

The number of collaborators involved in a contractual arrangement is an important determinant of collective action. The number of collaborators entering into a contractual arrangement is directly related to Olson's (1965) notion of group size in that it dictates relative distributional gains, and the monitoring and enforcement costs of behavior. The smaller the group, the easier it is to form a contractual arrangement because there are fewer problems determining how benefits will be distributed; the monitoring cost will be lower and thus there will be less shirking problems. A large

number of collaborators in a contractual arrangement decreases the relative benefits to individual collaborators. The higher the number of collaborators, the greater the organization costs, and the easier it is to free ride from the efforts of others. The transaction costs are higher in large-size collaboration.

The number of collaborators determines the type of contractual arrangement when the anticipation to renegotiate a contractual arrangement involves high transaction costs, especially in multilateral agreements. Inability to renegotiate a term of a contract can turn into a joint-decision trap unless those mostly benefiting from the contract are willing to renegotiate and adjust to an unanticipated change of conditions. Under this situation, an adaptive form of interlocal contractual arrangement will be preferred because the fulfillment of the arrangement is nonobligatory, reciprocal, and yet easily terminated without legal consequences. So, the higher the number of collaborators, the more likely an adaptive interlocal contract will be adopted.

4.5.4 Functional Service Effect

A list of variables on functional service area attempts to capture whether agreements within a particular functional service area (such as law enforcement for police departments, ambulance services for EMS, and fire prevention/suppression for fire departments) affects the form of interlocal contractual arrangements. A single functional service area represents homogeneity of policy goals and preferences. A single functional service area can reduce the transaction costs of negotiating an agreement, and encourage the development of mutual trust among local governments. A contractual arrangement in the presence of homogeneity in a functional service area reduces transaction costs of negotiating, operating, and enforcing contracts, and motivates local government to choose an adaptive form of interlocal contractual arrangement.

Traditional public safety functional roles are eroding, however. The provision of public safety can cut across multiple functional agencies' responsibilities. Some localities combined EMS and fire department responsibilities such that some ambulance dispatch

services and emergency helicopter services were carried out by fire departments. Increasingly in Florida, interlocal agreements have been used in the provision of public safety involving multiple agencies. When a service cuts across multiple provisional units, parties to the agreement having additional responsibilities compromise their traditional functional roles; the high transaction costs of negotiating, operating, and enforcing will be anticipated in the contract. We would expect a restrictive form of interlocal contractual arrangement would be appropriate to avoid future disputes over operating and enforcing the provision of a service. High transaction costs in combined functional service areas, involving seemingly different functional agencies, would also indicate a likelihood of a restrictive form of contracting to mitigate future uncertainty.

4.6 RESEARCH DESIGN AND DATA DESCRIPTIONS

4.6.1 Identifying Interlocal Contractual Arrangements

In identifying the different types of interlocal contractual arrangements, we utilized the data compiled by the Florida Department of Community Affairs (FDCA) from various *Interlocal Service Delivery Reports* (hereafter the Report). Under Chapter 2002-296, Law of Florida, added sections 163.3177(6)(h)6., 7, and 8., Fla. Sta., all counties in Florida with greater than 100,000 population, municipalities, and special districts were required to prepare and submit the Report to Florida Department of Community Affairs by 1 January 2004. The various reports (33 counties in total) identified all existing or proposed interlocal service delivery agreements regarding eight functional areas: education, sanitary sewer, public safety, solid waste, drainage, portable water, parks and recreation, and transportation facilities. Clearly, given this method of information collection, there is a bias in the database towards interlocal contractual arrangement formed by municipal and county governments in large counties.

Our substantive area focuses on the different types of interlocal contractual arrangements in the provision of public safety, which includes police, fire, and emergency medical services. The data from the various Reports includes information on the type of agreements and the activities carried out by local governments, the number of

partners in an agreement, the functional unit that provide the services and, the status of an agreement, i.e., the effective date, the expiration date, or whether automatically renewed. No other agreement-specific information at the local government level is available.

In order to systematically identify the different types of interlocal contractual arrangements in the provision of public safety, we tried to ensure that the agreements listed were in accordance with statutory definitions as discussed in earlier. Although most localities generally made implicit reporting on the types of agreements governing their transactions, others did not. To overcome this problem, we relied on the substantive titles of reported agreements to gain insight on the forms of contractual arrangements used by local governments to govern their transactions. For example, the Big Bend Region Bomb Squad Mutual Aid and Operational Assistant agreement in Florida would fall under the mutual aid agreement classification; the Evidence Storage agreement between Leon County Sheriff Office and the Department of Transportation would fall under the interlocal service agreement. From the Reports we found a range of institutional arrangements used by municipal and county governments to coordinate their activities in the provision of public safety services. The range goes from interlocal service agreements to contract and lease agreements, from mutual aid agreement to memoranda of understanding and mutual aid agreements, to informal “gentlemen’s handshake” and letters of agreement.

To capture the different governance structures that bind local governments together in the provision of public safety, we classified the multiple types of institutional arrangements into two general forms: restrictive and adaptive contractual arrangements. The adaptive form of contractual arrangement includes mutual aid agreements, memoranda of understanding, mutual aid agreements, informal “gentlemen’s handshakes” and letters of agreement; the restrictive form of contractual arrangements includes interlocal service agreements, contracts, and lease agreements. This approach for the classification of different types of contractual arrangement is important because we are particularly interested in the voluntary aspects of interlocal cooperation within a particular contractual arena. That is, we are interested in the factors that might explain the

motivation for local governments within a specific arena to voluntarily establish ties to resolve institutional collective action problems. Table 1 summarizes the different types of agreement by forms of interlocal contractual arrangement (i.e., restrictive and adaptive) between 1962 and 2003.

Table 1 shows that the restrictive form of contractual arrangements was mostly formed by interlocal agreements (i.e., about 52 % of the total interlocal contractual arrangements) whereas, the adaptive form of contractual arrangements was mostly formed by mutual aid agreements and memoranda of understanding. When combined they constituted about 34 % of the total interlocal contractual arrangements. At a glance, the information in Table 1 suggests interlocal contractual arrangements in the provision of public safety in Florida were mostly conducted through restrictive contractual arrangement rather than a more adaptive and flexible contractual arrangement.

Table 1. Percentage of Total New Agreements by Forms of Contractual Arrangement: Provision of Public Safety in Florida (1962-2003)

	Percentage
Adaptive Contractual Arrangement:	
Mutual Aid Agreement.....	29.59
MOU/MOA.....	4.64
Informal/Letter of Agreement.....	0.48
Restrictive Contractual Arrangement:	
Interlocal Service Agreement.....	52.76
Contract/Lease Agreement.....	2.69
Others (unspecified).....	8.61
Total	100

In Florida, between 1962 and 2003, there has been a general increase in the usage of interlocal contractual arrangements for the provision of public safety. For example, in

Figure 1 below, the general trend seems to suggest an increase in the frequency of new agreements in 32 major counties in Florida⁶ between these two periods. As discussed previously, the entry of local governments into new agreements has been encouraged partly by state statutes especially since the enacted Interlocal Cooperation Act of 1969 (among others state statutes that encourage interlocal contractual arrangements in the provision of public safety), and partly by natural disasters and man-made emergency situations such as 1992's Hurricane Andrew and the September 11th attacks in 2001. They have markedly accelerated the usage of interlocal contractual arrangements. Although our analysis does not empirically test the marked increase of interlocal contractual agreements across time, the general trend associated with these events seems to provide a logical explanation.

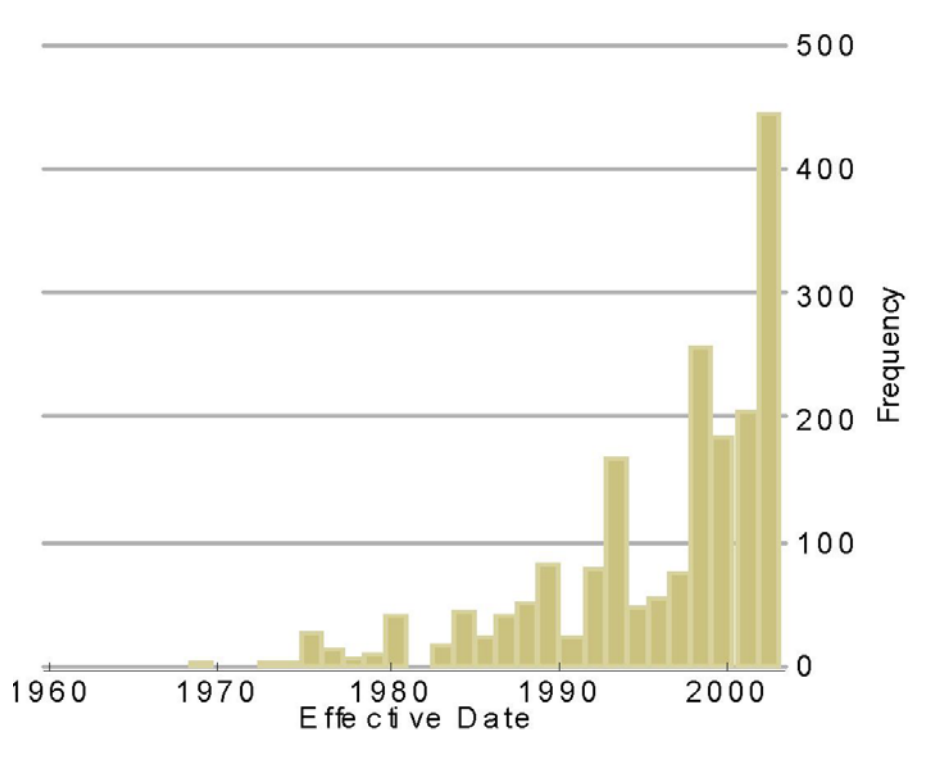


Figure 1. A Growing Usage of Interlocal Contractual Arrangements in the Provision of Public Safety between 1962 and 2003 (All Types of Agreements)

⁶ Santa Rosa County did not report having interlocal agreements in the provision of public safety.

4.6.2 Identifying Types of Goods and Services

In the study of municipal services, there have been some disagreements about the degree to which certain public safety services could be classified as “collective goods,” i.e., whether certain public safety services are divisible and whether other jurisdictions and their residents can be excluded from enjoying them. For example, whether public safety services with high asset-specificity could be classified as collective goods or not has been subjected to theoretical debate. Certainly, some public safety services can be supplied through the private market; while others are produced internally and some are contracted out to other local governments could be categorized as private goods rather than collective goods (Borcheding & Doodman 1972; Savas 1982). Despite some widely-heralded changes, local governments have, in fact, not extensively privatized their services with high asset-specificity.

There is no general consensus among scholars as to the best way to classify the multiple dimensions of local services. Nevertheless, the literature seems to focus on two broad dimensions: (1) categories of services, and (2) characteristics of services (Shrestha 2005). Most empirical studies examining alternative forms of local government service delivery have used the category of services as a proxy to categorize the different types of local services such as police, sewage, water, and, library (Jossart-Marcelli & Musso, 2005). Post (2000) for example, used a broader category: the capital-intensive versus labor-intensive services as the nature of the services. Her study shows that interlocal cooperation is more likely to occur in a capital-intensive category than a labor-intensive category. Theoretically, Savas (2000) has suggested both dimensions (i.e., service category and characteristics of service) are important factors to determine a local government’s choice of production and provision arrangements. Several scholars have argued for the importance of both dimensions (Bish 2000; Brown & Potoski, 2003).

For the purpose of this study, depending on the assumed transaction costs involved in writing and implementing a contract associated with output or performance desired by the parties to an agreement, the characteristics of goods and services in the production and provision of public safety have been loosely grouped into two categories:

(1) asset specificity and (2) service measurability problems. Following Brown and Potoski's (2003) extension of Williamson's transaction costs approach, characteristics of goods and services are regarded as having high asset specificity when specialized investment is required to produce the services and/or whether specialized investments needed for the production of one service can also be used for the production of other services. On the other hand, service measurability problem is defined as the relative difficulty in measuring and monitoring the outcomes of the services. The range of interlocal activities in the metropolitan areas was summarized by these two broad categories: asset specificity and service measurability. The classification of goods and services based on these two broad dimensions differs from Williamson's expectation about the effect of the characteristics of goods and services on the comparative advantage of governance structure. For example, in our classification, we would expect the effect of asset specificity in the form of interlocal contractual arrangements would differ from the effect of the service measurability problem. That is, we would expect that when a transaction involves outcome that is relatively difficult to measure, local governments would prefer to enter into a more adaptive form of interlocal contractual arrangement; whereas, when a transaction involves goods and services that has a high asset specificity problem, local governments would prefer to enter into a more restrictive form of interlocal contractual arrangement to safeguard their transactions.

The classification of goods and services involves the following procedures: First, we identify and develop a list of goods and services based on previous empirical studies, i.e., a list of goods and service developed by various ICMA surveys on local governments' contracting-out decisions and the empirical studies conducted by Brown and Potoski (2003). Second, we identify the types of goods and services involved in interlocal contractual arrangements in the realm of public safety that closely match the list. This is conducted based on the information found in each of the interlocal contractual arrangement that is examined in order to determine the type of goods and services that would best match the list we have developed from the previous studies, i.e., a title of the agreement and a brief description of the agreement. Third, we match each type of goods and services with those goods and services that have been categorized by Brown and

Potoski as having a high asset specificity or a high service measurability problem. This is discussed below. In Table 2, we have identified 14 major types of goods and services in the provision of public safety, which were then further aggregated into three broad groups of goods and services: high asset specificity, a high service measurability problem, and high on both asset specificity and service measurability problems. The category of goods and services that have low asset specificity and service measurability problems was not evidenced in this table since such goods and services would generally be contracted out to the private sector or left to the private market to produce. Our data only capture the contractual arrangements involving special districts, municipal and county governments, state and federal agencies.

In order to establish the differences in characteristics of goods and the association they may have with the forms of interlocal contractual arrangements, we have aggregated the types of goods and services based upon Brown and Potoski's (2003) two general dimensions. That is, Brown and Potoski identified and categorized a list of goods and services into four categories: (1) high asset specificity and high service measurability problems, (2) low asset specificity and low service measurability problems, (3) high asset specificity and low service measurability problems, (4) low asset specificity and high service measurability problems. Based upon their empirical study, each type of goods and services would fall under each of these categories.

In our current study, a list of goods and service in the provision of public safety was categorized as either having a high asset specificity or high service measurability problem following the types of goods and services that were categorized by Brown and Potoski. They measured asset specificity and service metering difficulty based upon average scales that range from 1 to 5; the higher the points in scale, the higher the asset specificity and metering difficulty. For example, based on Brown and Potoski's results, the equipment/vehicle maintenance has a high point on the asset specificity category of goods and services, whereas the EMS has a high point on the service measurability problem category. However, we must not forget that this is a constrained view, especially when goods and services may contain both dimensional properties. Thus, for example,

the joint planning and mitigation strategies would also fall under a realm that is difficult to measure, but the key action required is related to the need to plan a detailed strategy to mitigate a specific problem. The action required would be highly procedure specific and asset specific. When the outcomes of developing and planning for mitigation strategies, joint terrorism task forces, or a mutual aid operating plan are relatively difficult, a potential free-rider problem is inevitable. In addition, because of the specialized investment required to meet the region-wide efforts, actors in the contractual arrangement may also subject themselves to opportunistic behavior by others in the agreement. For these reasons, a third category is presented to capture services that have high asset specificity and high service measurability.

Table 2 below gives an overview of the types of goods and services and the forms of contractual arrangements in the provision of public safety in Florida. It shows that goods and services that have high asset specificity generally involve restrictive contractual arrangements (i.e., about 60 % of the total restrictive contractual arrangements are in asset specificity), whereas goods and services with high service measurability generally have adaptive contractual arrangements (i.e., about 67 %). At a glance, the information in Table 2 suggests that restrictive contractual arrangements in the provision of public safety were pretty evenly distributed across these two dimensions of goods and services. In terms of specific services in the provision of public safety, services related to mutual assistance/disaster relief were mostly conducted through adaptive contractual arrangements (i.e., about 59 %). This is not surprising. In the previous section we have argued that Florida's state statutes such as mutual aid agreements authorized by the Mutual Aid Act were generally used by local governments to govern emergency services; interlocal service agreements as authorized by the Interlocal Cooperation Act of 1969 were mostly utilized for continuous service provision. This is not necessarily true across the board, however. The patterns illustrated in Table 2 suggest that restrictive contractual arrangements have also been used for mutual aid or disaster relief; adaptive contractual arrangements have been used in high asset specificity dimension such as crime prevention and law enforcement services.

Table 2. Types of Goods and Services in Provision of Public Safety in Florida, by Forms of Interlocal Contractual Arrangements Between 1962 and 2003 (Percentage)

Types of Goods and Services (Public Safety)	Adaptive Contractual Arrangements (%)		Restrictive Contractual Arrangements (%)	
<i>High Asset Specificity</i>				
Equipment/Vehicle Maintenance	14	(1.60)	95	(6.64)
Building Expansion & Shelters.....	13	(1.49)	155	(10.84)
Police/Fire Communication.....	18	(2.06)	146	(10.21)
Crime Lab/Investigation	24	(2.74)	36	(2.52)
Crime Prevention/Law Enforcement....	83	(9.49)	167	(11.68)
Billing/Financial Payment.....	11	(1.26)	173	(12.11)
Prisons/Jails.....	-		11	(0.76)
Licensing	-		8	(0.56)
Technical Training.....	7	(0.80)	51	(3.57)
Sub-Total	170	(19.42)	843	(58.99)
<i>High Service Measurability Problem</i>				
Emergency Medical Services.....	5	(0.57)	64	(4.48)
Fire Prevention/Suppression.....	62	(7.06)	179	(12.52)
Mutual Assistant/Disaster Relief.....	524	(59.88)	112	(7.84)
Sub-Total	591	(67.54)	355	(24.84)
<i>High Measurability and Asset Specificity</i>				
Joint Planning/Mitigation Strategies.....	109	(12.45)	173	(12.11)
Technical Assistant/Joint Studies	2	(0.23)	14	(0.97)
Sub-Total	111	(12.68)	187	(13.09)
Others (unspecified).....	3	(0.34)	45	(3.15)
Total	875	100.0	1429	100.0

4.7 STATISTICAL MODEL AND RESULTS

A local government's decision about whether to enter into a restrictive or adaptive form of contractual arrangement is based on the extent to which they could reduce the transaction costs of their interjurisdictional exchanges. To test this proposition, we aggregated different types of interlocal contractual arrangements into two general classifications: adaptive and restrictive forms of interlocal contractual arrangement. The logistic model has a dependent variable that takes a value of 1 for an interlocal

contractual arrangement having an adaptive form of contractual arrangement; and 0 otherwise. For example, the Big Bend Region Bomb Squad agreement with its nonobligatory and voluntary features would fall under the adaptive form of contracting classification; the Evidence Storage agreement with its strict requirements for fulfillment of the contract will fall under the restrictive form of contracting classification. This difference for form of interlocal contractual arrangement $i (y_i^* = \prod_i^a - \prod_i^r)$ is not observable but we model it as

$$y_i^* = x_i' \beta + \varepsilon_i \quad i = 1, 2, \dots, n$$

Where β are unknown parameters to be estimated, x_i is a vector of explanatory variables, and ε_i is the error term. We observe the final decision, whether a restrictive or adaptive interlocal contractual arrangement has been chosen, so that we define as follows:

$$\begin{aligned} y &= 1 \text{ if } y^* > 0 && \text{(adaptive contractual arrangement has been chosen)} \\ y &= 0 \text{ if } y^* \leq 0 && \text{(restrictive contractual arrangement has been chosen).} \end{aligned}$$

In what follows we estimate the logistic regression model ($\text{Prob}(y_i=1) = \Phi(x_i' \beta)$, where Φ is the standard normal distribution function) using as possible determinants of the governance form the variables we have described in the previous section. The model is designed to explain whether interlocal relations, the characteristics of goods and services, the functional service area, and the number of collaborators in the provision of public safety influence the forms of interlocal contractual arrangement. The unit of analysis is at the level of interlocal agreement. The following list describes variables which are used in our estimates.

Characteristics of Services: Three dummy variables are included in the estimates to capture the transaction costs of interlocal contracting mediated through the characteristics of goods and services. The third dummy variable--high asset specificity

and high service measurability problem--is taken as the base for comparison. The category of goods and services that has low asset specificity and service measurability problems was not evidenced in the dataset presumably because such goods and services would generally be contracted out to the private sector or left to the private market to produce. Our dataset only captures the contractual arrangements involving special districts, municipal and county governments, state and federal agencies.

Asset Specificity: Dummy variable equal to 1 if an agreement is carried out involving asset specificity, otherwise 0.

Service Measurability: Dummy variable equal to 1 if an agreement is carried out involving service measurability, otherwise 0.

High Asset Specificity and Service Measurability: Dummy variable equal to 1 if an agreement is carried out involving high asset specificity and service measurability, otherwise 0.

Interlocal Relations: There are four dummy variables that capture the transaction costs of interlocal contracting mediated through interlocal relations. The dummy variable--interorganizational organization, which includes nonprofit, private, special districts, state and federal agencies--is used as the base for comparison in the analysis.

City-county Relations: Dummy variable equal to 1 if an agreement is carried out city and county government, otherwise 0.

City-city Relations: Dummy variable equal to 1 if an agreement is carried out among cities, otherwise 0.

County-county Relations: Dummy variable equal to 1 if an agreement is carried out by among county governments, otherwise 0.

Other relations: Dummy variable equal to 1 if an agreement is carried out with interorganizational organizations such as nonprofit, private, special districts, state and federal agencies, otherwise equal to 0.

Functional Service Areas: There are four dummy variables to analyze whether specialized provision units in areas of police, emergency medical service (EMS), and fire service affect the decision of local governments to choose certain forms of interlocal contracting. An agreement that involves two or three functional service areas is referred to as “combined service area.” This is not uncommon in Florida. There has been a gradual increase in the trend where local governments are merging or consolidating their EMS with other functional areas such as fire or police in order to reap the economies of scope and scale. The fire service is used as the base for comparison.

Combined Service Area: Dummy variable equal to 1 if an agreement is carried out by local governments involves a combined service area, otherwise 0.

Police: Dummy variable equal to 1 if an agreement is carried out by law enforcement agency, otherwise 0.

EMS: Dummy variable equal to 1 if an agreement is carried out by EMS, otherwise 0.

Fire: Dummy variable equal to 1 if an agreement is carried out by fire department, otherwise 0.

Number of Collaborators: A count variable that includes the total number of partners in an agreement. The number of collaborators entering into a contractual arrangement is directly related to Olson’s (1965) notion of group size: it dictates the relative distributional gains, monitoring and enforcement costs of others behavior. The smaller the group, the easier it is to form a contractual arrangement because there are fewer problems determining how benefits will be distributed, the monitoring cost will be lower and thus, less shirking problems. A large number of collaborators in a contractual arrangement make the relative benefits to individual collaborators decrease. The higher the number of collaborators, the greater the organization costs, and the easier it is to free ride from the efforts of others. The transaction costs are higher in large size collaboration. So, we would expect the variable to have a positive effect on the adaptive form of

contractual arrangements.

Table 3 provides the summary statistics. The incidence of contractual arrangements between city and city, and between county and county were low compared to the incidence of contractual arrangements among municipal and county governments. The incidence of contractual arrangements in emergency medical services was also low compared to police, fire, and the combined functional service areas. The average number of collaborators was about 2.5 per agreement suggesting that most agreements were conducted between two jurisdictions. Diagnostics performed to detect multicollinearity above 0.8 suggest no serious problem--the independent variables were dependent to each other.

Table 3. Descriptive Statistics

Variables	Mean	Standard Deviation	Min	Max
Adaptive Contractual Arrangement	.611	.488	0	1
Characteristics of Services				
Service Measurability	.420	.494	0	1
Asset Specificity	.448	.497	0	1
Measurability and Asset Specificity	.132	.339	0	1
Interlocal Relations				
City-City relations	.075	.263	0	1
City-County relations	.435	.496	0	1
County-County relations	.181	.385	0	1
Others intergovernmental relations	.293	.455	0	1
Functional Service Areas				
Combined	.299	.458	0	1
Police Services	.375	.484	0	1
Emergency Medical Services	.070	.255	0	1
Fire Services	.256	.437	0	1
No. of Collaborators	2.53	2.08	2	20
No. of Observations = 2,251				

Our results in Table 4 below show that there is a positive and significant association between city-county relations and the type of contractual arrangement chosen to govern those relations. The evidence also supports the argument that when specialized

investment was required in the provision of public safety, a restrictive form of interlocal contractual arrangement was preferred. On the other hand, when measuring and monitoring the outcomes of the services were relatively difficult, an adaptive form of contractual arrangement was preferred. A single functional service area as a proxy to similar policy and goal preferences also affected the transaction costs of negotiating, operating, and enforcing contractual arrangements and thus determined the form of arrangement chosen by local governments to govern their transactions; so did the number of collaborators involved in an agreement.

In Table 4, the overall Model 1 chi square is 645 and is statistically significant (df9, $p < .01$). The model correctly predicts about 74 percent of the cases and the Proportional Reduction in Error is about 32 percent. To interpret the effect of each independent variable, the results show that the coefficient operating on city-county relations is negative and statistically significant at the .01 level. This indicates that for city-county relations, the probability that an adaptive contractual arrangement was used in the provision of public safety decreases compared to other levels of interlocal relations. Specifically, for a vertical political structure involving city-county relations, the log odds ratio of having a flexible or adaptive contract is .68 lesser than the other form of interlocal relations, holding all other variables constant. The effects of the other boundary-spanning variables on flexible contracts are anticipated though statistically not significant.

The effects of characteristics of goods and services variables on flexible or adaptive contracts are both statistically significant. For example, when outcomes of services are relatively difficult to measure and the monitoring and enforcement costs are high, a flexible or adaptive contract is preferred to safeguard the arrangements. On the other hand, when the services have high asset specificity, a restrictive contract is preferred. The log odds ratio of a contractual arrangement involving asset specificity having an adaptive contractual arrangement compared to a restrictive form of contractual arrangement is .26 less than other types of goods and services, holding other variables constant.

Table 4. Logistic Regression Coefficients (and Standards Errors) Predicting Potential Adaptive Contracting in the Provision of Public Safety

Adaptive Contractual Arrangement	Model 1	Model 2
<i>Characteristics of Services</i>		
Service Measurability Problem	1.339*** (.153)	1.358*** (.154)
Asset Specificity	-1.345*** (.159)	-1.347*** (.160)
<i>Interlocal Relations</i>		
City-County Relations	-.379*** (.124)	-.402*** (.124)
City-City Relations	-.039 (.202)	-.0475 (.202)
County-County Relations	.135 (.156)	.131 (.157)
<i>Functional Service Areas</i>		
Combined Functional Service Area	.484*** (.138)	.410* (.237)
Police Services	1.124*** (.146)	1.510*** (.220)
Emergency Medical Services (EMS)	-2.030*** (.297)	-2.605*** (.515)
<i>No. of Collaborators</i>	.032 (.025)	.096* (.055)
<i>Interaction Effects</i>		
Combined Functional Area * No. of Collaborators	—	.031 (.081)
Police Services * No. of Collaborators	—	-.145** (.064)
EMS * No. of Collaborators	—	.229 (.173)
Constant	0.944*** (0.185)	1.041*** (0.223)
No. of Observations	2,251	2,251
LR Chi squared	645.00***	660.85***
Pseudo R-squared	.21	.22
Log Likelihood	-1185.37	-1177.44
% Correctly Predicted	73.67	73.80
Proportional Reduction in Error	32.40%	32.82%

Note: Level of significance: ***p<.01, **p<.05, *p<.10

The effects of individual functional service area on flexible contracts are statistically significant, but the type of contract used to govern transactions differs. For example, in a combined functional service area, where more than one specialized functional agency is involved in the provision of public safety, the contractual arrangement is more likely to be an adaptive contract. The effect of a law enforcement functional area on an adaptive form of contractual arrangement was anticipated and statistically significant. This is particularly important. Law enforcement agencies entering into an agreement with other law enforcement agencies and having similar policy and goal preferences generally preferred to have a flexible or adaptive form of contractual arrangements because they shared similar concerns, interacted and trained under the philosophical approach of professionalism. This is not to say that law enforcement agencies were generally cooperative in the provision of public safety; the main point to emphasize here is that when compared to other functional service areas, in the area of law enforcement, the contractual arrangement generally involved a flexible or adaptive contract. This is because the transaction costs of negotiating and enforcing interlocal contractual arrangements are relatively lower than restrictive contracts. Emergency medical services, on the other hand, generally employed restrictive contracts. The directional effect of EMS on the type of contractual arrangements formed was also anticipated by the model.

One of the surprising results is related to the provision of public safety that cut across multiple functional agencies' responsibilities. Increasingly in Florida, interlocal agreements have been used in the provision of public safety involving multiple agencies. The theoretical model argues that when a service cuts across multiple provisional units, parties to the agreement having additional responsibilities compromise their traditional functional roles; the anticipated high transaction costs of negotiating, operating, and enforcing will be observed in the provision of the contract. Compared to other functional service areas, the results of the model show that an effect of the combined functional service area on flexible or adaptive contract was likely. One explanation has to do with the motivation to avoid a contractual trap, especially when there is a need to accommodate multiple preferences. This is discussed further below.

Theoretically it is also possible that the effects of functional service area on the forms of contractual arrangement varied by the number of collaborators in an agreement. A contractual arrangement involving combined functional service areas such as law enforcement, fire, and EMS must reflect the diverse policy preferences of those concerned. Negotiations involving a larger number of agencies with multiple functional service areas would lead to an adaptive form of contracting because a large number of parties with different preferences can potentially lead to disputes over policies and goals more likely than with a homogeneous functional service area. Moreover, a joint decision trap is highly probable when there are a large number of parties to an agreement, especially in a contractual arrangement that is less flexible or adaptive to unforeseen circumstances. This proposition predicts a positive association between the interactive terms of a combined functional service area and the number of collaborators on the form of contractual arrangement.

In Model 2, we introduced the interactive effects of the number of collaborators and functional service area on the type of contractual arrangement. A likelihood ratio test was used to determine whether the inclusion of the interactive terms contributed to the overall effect of the model. The inclusion of the interactive terms is statistically significant ($LRX^2 = 15.86, df = 3, p < .0012$). The predicted probability in the model ranges from .033 to .996, with a mean predicted probability having an adaptive form of contractual arrangement of .611.

In Model 2, the results also show that the anticipated effect of the combined functional service area on the type of contractual arrangement varying by the number of collaborators was correctly predicted but statistically not significant. A similar conclusion was reached on the effect of EMS and number of collaborator interactive terms. The total number of collaborators represents the number of collaborator in the fire functional service area.

Theoretically, it is also possible that the effect of a single homogeneous functional service area on the type of contractual arrangement varies by the number of collaborators. The results in Model 2 suggest that the effect of the law enforcement functional area on the type of contractual arrangement indeed varied by the number of collaborators. The effect is negative and statistically significant. We compared the differences between law enforcement and the other functional service areas to predict the form of interlocal contractual arrangement. Our calculation indicates that the probability of having an adaptive form of contractual arrangement is less likely for law enforcement than the other functional service areas (i.e., the fire service), or when the interaction term was taken into account and the other variables were held at their mean. Specifically, the predicted probability was .264 less for law enforcement than the other functional service areas.

4.8 DISCUSSION ON THE IMPLICATIONS OF RESULTS

The decision to enter into an interlocal contractual arrangement with another government is usually viewed as a technologically driven choice to reap the benefits of economies of scale (Ferris & Graddy 1986) and influenced by the characteristics of goods and services that are the product of transaction costs (Brown & Potoski 2003). For example, when there is the difficulty of imposing jurisdictional boundaries or exclusion of other users such as cultural and recreational services, local governments are more likely to enter into an interlocal agreement (Stein, 1990). When outcomes of the services are difficult to monitor and the investment required is highly specific and lacks transferability, local governments are more likely to contract with each other rather than with the private sector (Brown & Potoski 2003). And, when a large service area is required to attain scale economics in capital-intensive investment and another local government is currently providing the service, other local governments are likely to enter into an arrangement with that government (Farris & Grady 1986; Post 2002).

Although these studies have provided theoretical grounds to examine local governments' contractual choice in meeting local residents demand for services, they fall short of explaining the different types of existing interlocal contractual arrangements capable of coping with uncertainty. As shown in our analysis, the type of contractual

arrangement chosen by parties in the provision of public safety depends on the characteristics of goods and services; outcomes that are difficult to measure generally relied on an adaptive form of contractual arrangement because the service outcomes cut across inter-jurisdictional boundaries. On the other hand, compared to other characteristics of goods and services, services that have high asset specificity tend to be governed by a restrictive form of contractual arrangements. Our results are also consistent with the evidence presented in the industrial economic studies that high asset specificity is associated with a more restrictive form of contractual arrangement. What are the implications of these results for the formation of metropolitan governance?

As discussed in Chapter 3 and 4, institutional ties embedded in a range of interlocal contractual arrangements are also influenced by the transaction costs mediated through the characteristics of goods and services involved in a transaction. The classification of characteristics of goods and services into two broad dimensions--asset specificity and service measurability--is important in reaching the conclusion that there are some underlying relationships between these dimensions and institutional arrangements. In doing so, we are more confident of the action arenas in which local governments have conducted their exchanges and the set of rules they have used to govern those transactions. This is discussed further in the following chapter. By establishing the underlying relationships, we are also able to generate testable hypotheses regarding the formation of institutional ties that are associated with different structures of metropolitan governance. For these reasons, the general association between characteristics of goods services and forms of interlocal contractual arrangements is important to determine the formation of metropolitan governance.

Another implication is the risk and uncertainty involved in forming institutional ties through interlocal contractual arrangements. There are costs involved in using the adaptive form of interlocal contractual arrangements. For example, without a clear set of working rules, uncertainty from opportunistic behaviors is relatively high in transactions involving services with high measurability difficulty. Policy interests or preferences of local governments may diverge over time but neither of them can perfectly monitor the

action of the other without involving a costly enforcement mechanism. In addition, neither of them can effectively acquire the information available or possessed by the other without involving a costly exercise. Taken together, the transaction costs of adaptive contractual arrangements can lead to the possibility of opportunistic behaviors among local governments in the long run. It is also uncertain whether an investment that was made in building strong institutional ties would guarantee the original intention of the agreement, especially since the passage of time and the “changing of the guard” can potentially cause significant problems for those left to interpret its original goals (FLCIR 2001).

We argue that the adaptive form of contractual arrangements, which is generally established to govern institutional ties in outcomes that are difficult to measure, tends to display tightly or highly clustered ties to maximize joint returns. We develop this argument further in the following chapter, but suffice it to say that the outcomes of particular services that are difficult to measure such as emergency management or disaster relief presents a greater risk of opportunistic behaviors by those who do not meet the standard requirements spelled out in their contractual arrangements. In order to constrain such behaviors and minimize cooperation problems, monitoring and enforcement can be observed through a web of institutional ties that displays tightly or highly clustered ties. A dense network structure is advantageous in reducing the transaction costs of enforcing and monitoring the social obligations because any actions taken or not taken by a locality are made public. Other localities whose common concerns and shared beliefs can provide threats of collective sanction will enhance the credibility of punishments being imposed.

On the other hand, when local governments used more restrictive form of contractual arrangement, they have generally done so in order to safeguard transactions in service areas that have high asset specificity problems, and we anticipate a service delivery system that displays sparse or less densely connected institutional ties to emerge. The benefits of a sparse network structure flow to local governments because, given the nature of the service, local governments tend to be selective with whom they form a

contractual partner. A sparse network structure can be conceptualized to explain two possible phenomena: first an injunction that commands should flow downward and information upward in the organizational and collaborative approaches to the provision of services, thus displaying a centralized governance structure, or second, an opportunity with diverse institutional ties that provides different types of resources necessary for innovation and information flows.

Local governments can also craft a more restrictive form of contractual arrangement in the transaction involving services that have high measurability problems. Although such arrangements may reduce the uncertainty of contracting, the establishment of restrictive contractual arrangements is also problematic given the nature of such services. This is particularly acute when the transactions involve relatively high administrative and enforcement costs.

4.8.1 Provision of Services

The provision of public safety cutting across multiple agencies' responsibilities traditionally have been provided by a single provisional unit such as law enforcement for police department, ambulance services for EMS, and fire prevention/suppression for fire departments, and represents homogeneity of policy goals and preferences. According to transaction cost theory, such a structural arrangement would present a relatively low cost for local governments to negotiate an agreement. A single provision unit with a single functional responsibility also expends fewer resources and encourages the development of mutual trust among local provisional units.

Our analysis shows that a contractual arrangement in the presence of homogeneity in a single specialized agency that reduced the transaction costs of negotiating, operating, and enforcing contracts, would motivate local governments to choose an adaptive form of contractual arrangement. However, when an agreement involving multiple services cuts across multiple provisional units, parties to the agreement having additional responsibilities compromise their traditional functional roles. As a result there may be an

anticipated high transaction cost of monitoring and enforcing the legal terms of a contract. Under this circumstance, we predicted that a restrictive form of contractual arrangement will be used to avoid future disputes over operating and enforcing the provision of such a service by seemingly different agencies.

Contractual arrangement involving the provision of EMS is particularly interesting, especially when compared to other functional services such as law enforcement or fire suppression and prevention. This is because local government transactions involving EMS are usually formed under the restrictive form of contractual arrangement. One of the many reasons for this is because EMS generates revenues to local government. For example, in east central Florida, there have been some reports that EMS can generate revenue to the tune of \$8 million to \$10 million a year (The Ledger, March 17, 2005). The operation costs, on the other hand, are relatively high and the provision of EMS is labor intensive. So, to protect their investment and to ensure parties to the agreement do not act opportunistically, a restrictive form of contractual arrangement is generally employed. Furthermore, according to Florida's Commission of Intergovernmental Relations (2001) when transactions involve some forms of exchange for payments, revenue sharing, or impact fees, a restrictive form of contractual arrangements for these transactions is generally advisable.

The main motivation for local governments to provide EMS is money. But, local government's attempt to provide the service faces competition from the private and non-profit sectors. This makes a local government attempting to establish itself as a provider of these services somewhat difficult to justify financially. Although some localities have jointly established interlocal agreements to set up joint production of EMS in their jurisdictions, increasingly across the country local governments are also outsourcing EMS to either the private or nonprofit sectors. For example, according to Robin A. Johnson (2006), a Senior Fellow in the Reason Public Policy Institute's Privatization Center in Los Angeles, in a 1988 survey of municipalities conducted by the International City/County Managers Association (ICMA), none reported the presence of private-sector

ambulance services. A similar survey only 9 years later found such services in approximately 16.3 % of cities nationwide.

In Florida, as provided in Table 2, the percentage of interlocal contractual arrangements involving EMS between 1962 and 2003 were relatively low compared to the other public safety services (i.e., less than 1 % in the adaptive contractual arrangement and just under 5 % in the restrictive contractual arrangement). In fact, one of the reasons for such a low percentage in the provision of EMS reflects an increasing trend where local governments are merging or consolidating their EMS (e.g., interlocal agreement entered into by Lake County and Sumter County to establish a bi-county corporation to form the Lake-Sumter EMS Inc.). Indeed, the traditional “single service provider” role in the provision of public safety is eroding in Florida.

4.8.2 Interlocal Politics

Research on intergovernmental relations has long identified the importance of the vertical structure of American federalism in the area of planning for emergency and law enforcement activities (Waugh 1994; Rubin & Barbee 1985). Previous studies have proposed that county government should take on a larger role in the provision of public safety for a region, arguing for the benefits of economies of scope and the importance of resources accumulation. Our results seem to suggest that county governments played a major role in public safety. Cities are highly dependent on county governments because they are politically and administratively closer to state and federal governments in terms of receiving state resources and technical assistance. They may be more able to act as mediators to inter-municipality policy goals and policy preferences. They generally have a larger geographical base, greater ability to reap the benefits of economies of scope, and a broader perspective to respond to regional needs. Another argument is that smaller and isolated municipalities lack the incentive to cooperate with each other in the provision of public safety, and thus the county should fill the role as central coordinator (Waugh 1994).

With whom and what forms of contractual arrangement have municipal and county governments formed in the provision of public safety? Typically, the form of arrangement chosen by localities when vertical interjurisdictional relations are involved tends to be based on restrictive forms of contractual arrangement. That is, the evidence suggests that when municipal and county governments entered into a contractual arrangement with each other, the preferred form of agreements is restrictive in nature. A restrictive form of contractual arrangement is suited for the provision of public safety within the context of vertical exchange because municipal and county governments are highly dependent on each other. Furthermore, municipal governments are also apprehensive of county government over intralocal inequality of service provision such as decisions about allocation of fire or police stations. In order to avoid uncertainty and opportunistic behavior, municipal and county governments entered into the restrictive form of interlocal contractual arrangement. Vertical boundary spanning--expanding political and administrative boundaries that rely on restrictive contracts--can produce a happy compromise based on stylized contracts that enumerate the obligations of each party.

The results have a number of implications for the formation of metropolitan governance. The results suggest that the formation about institutional ties via restrictive or adaptive contractual arrangements is affected by inter-jurisdictional politics. That is, when local officials have to conduct their internal and external affairs, they must enter into formal or informal agreements with another jurisdiction for the purpose of joint returns. Here, they may rely on their institutional ties to bargain for desired outcomes. In public safety, because the nature of the services to be rendered often cuts across multiple jurisdictions and because power and responsibilities are shared by different levels of government, the politics of interlocal contractual arrangements seen in this light is often about which level should make the decision.

4.9 CONCLUSION

Theoretically, uncertainties impose costs on the formation of institutional ties (i.e., in the course of coordinating multiple activities to meet local demands they may be

affected by unforeseen natural disasters or anticipated interjurisdictional strategic acts). Absent foresight, local governments in any transactions cannot agree on a substantive response to uncertainty, so in order to minimize costs of planning, adapting, and monitoring task completion across jurisdictions, interlocal contractual arrangements are crafted as a procedural safeguard to reduce uncertainty. The existence of multiple types of interlocal contractual arrangements provides alternative mechanisms for managing uncertainty because the ability of municipal and county governments to cope with uncertainty differs given their available capital and human resource endowments. They strategically align the safeguard guaranteed to them by a particular contractual arrangement against uncertainty accordingly, because alternative arrangements also impose different costs on their relationships. So, local governments enter into a contractual arrangement in a bounded rational fashion by selecting an arrangement to achieve task completion that simultaneously minimizes the transaction costs of contracting. In other words, a variety of interlocal contractual arrangements provides local governments with institutional choice. The one that is chosen is the one that enables local governments to carry out their functional responsibilities jointly with other units of government at lower costs.

So far we have examined the factors that might explain such institutional choice, i.e., the different forms of interlocal contractual arrangements. We argue that institutional arrangements were also the product of state statutes employed by local governments to span their political and administrative boundaries. We have shown that vertical intergovernmental relations involving municipal and county governments generally employed a restrictive form of interlocal contracting. We have also shown that the characteristics of goods and services as the product of transaction costs also influenced the forms of interlocal contractual arrangements in the provision of public safety. Functional service area and the number of collaborators involved also play an important role in explaining a local government's decisions to enter into particular form of interlocal contractual arrangements.

In the next chapter, we focus on adaptive and restrictive forms of contractual arrangements as distinctive action arenas in the provision of public safety. If two local governments are connected via a contractual arrangement, their transactions not only involve some forms of exchange but also encourage different types of institutional ties to develop. In an action arena where local governments rely on an adaptive form of contractual arrangements, a dense network structure will be anticipated to emerge to overcome the threat of credible commitment problems. In an action arena where local governments rely on a restrictive form of contractual arrangement, a sparse network structure will be anticipated to emerge to bridge diverse policy preferences and effective flows of resources across jurisdictions. We also extend our theoretical framework by using network analysis to examine the formation of metropolitan governance. Here, we shift our approach from a dyadic level analysis to a macro-level structure.

CHAPTER 5

THE EMERGENCE AND DYNAMIC PROCESSES OF METROPOLITAN GOVERNANCE

In giving an explanation of metropolitan governance using the social network perspective, either of its maintenance and stability or of its development, this chapter focuses on the different forms of contractual arrangements discussed in the previous chapters as the action arena that defines local governments' institutional ties. The emphasis is on local government relations--municipal and county governments. Because this dissertation is interested in the emergence and dynamic of metropolitan governance from the institutional collective action perspective (the mechanism that connects the “*what*” with the “*how*” and “*why*”), social network analysis is employed to supplement the theoretical development. The main objective of this chapter is to develop the theoretical framework to answer the second set of questions of this dissertation, i.e., on the mechanisms connecting/explaining the benefits of particular contractual arrangements forming metropolitan governance with the intentions of local governments.

What does it mean when two local governments form an institutional tie? A link between two units of local government is interpreted as a joint production or provision of goods and services that cuts across political boundaries. Depending on the forms of contractual arrangements adopted, the presence of an institutional tie implies that the provision of services can be carried out jointly or independently by another jurisdiction with considerations such as monetary or non-monetary payments, but without having to surrender a complete assumption of law enforcement authority or regulatory power or impose direct taxation upon residents in other jurisdictions. In the absence of a link, there is no institutional tie.

Take a simplified example. In the provision of emergency medical services where each locality has its own first response team, an institutional tie represented by an agreement between two localities determine who should act as first responder in a particular circumstance. In the absence of an agreement, one locality will not be able to act independently in another city's political jurisdiction. If both formed an institutional tie, that link is interpreted as having a coordinated provision of first response agreement where one locality does not have to refrain from providing first response assistance and vice versa. An institutional tie between two units of local governments has a direct effect on the quality and quantity of services provided--as there will be a lesser flow of communication and availability of shared resources (possibly in both directions) in the absence of an institutional tie. There are indirect effects from institutional ties. Local governments not directly involved in a contractual arrangement still feel some effects in a joint coordination effort (i.e., the effectiveness of emergency response and strategies adopted may change the region's standard responses and procedures as a contractual arrangement between the agencies is put into place).

In the simplest examples presented above, there is a specific action arena in which institutional ties developed and evolved. In order to explain the phenomena in which metropolitan governance evolves or emerges, consider two cities: City A and City B. Here, the action arena consists of four possible dyadic ties: (1) City A and City B are not forming any contractual ties, (2) City A initiates a contractual arrangement with City B such that the dyadic relations can be represented as City A \rightarrow City B, (3) City B initiates the contractual arrangement with City A such that their dyadic relations can be represented as City B \rightarrow City A, and (4) City A and City B have a mutual agreement about the contractual arrangement and thus form a mutual dyadic relationship such that City A \leftrightarrow City B. But, metropolitan governance is a complex phenomenon. When increasing the number of local governments forming institutional ties in a metropolitan area by n number of actors, the number of possible configurations rises faster than exponentially such that for a set of six local governments establishing multiple institutional ties, the action arena already contains more than a million possible

configurations of ties (and the rules accompanying these relationships). The dynamic of these ties for a specific action arena implies a stochastic process.

5.1 THE EMERGENCE AND DYNAMIC OF METROPOLITAN GOVERNANCE AND THE PROBLEMS OF INSTITUTIONAL COLLECTIVE ACTION

The theories of institutional collective action explaining the emergence and dynamic of metropolitan governance and the effect of metropolitan governance on local government behavior can be classified into two theoretical foundations: evolutionary institutional theories and intended design theories. To appreciate the theoretical differences, the terms “emergence” and “dynamic” require further explanation. A distinction is drawn here between (1) emergence of a particular behavior, and (2) dynamic/evolution of a particular strategy (Watts 1999). In a game theoretical model, emergence can occur in a homogeneous population, in which all players adopt the same strategy given an initial state of affairs. For example, if a small number of local governments cooperate with other local governments and this strategy leads other local governments which previously did not cooperate to change their strategy to a cooperative strategy, then interlocal cooperation has *emerged* in the metropolitan governance.

On the other hand, evolution or dynamic of metropolitan governance refers to a dominant strategy adopted by a set of heterogeneous population given the different level of payoffs associated with different strategies. The basic idea associated with the term *dynamic of metropolitan governance* is that, given a set of payoffs associated with differing sets of strategies, the one that has the best payoffs has selected the best strategy. If interlocal cooperation is one that dominated the metropolitan governance structure over a period of time, then interlocal cooperation is said to have evolved i.e., it is more dynamic than the other strategy. While emergence of metropolitan governance refers to the changed behaviors of local governments, the dynamic of metropolitan governance refers to the dominant strategy adopted over time i.e., the dominant structure. The implicit distinction between emergence of metropolitan governance and the

dynamic/evolution of metropolitan governance is based on assumptions about change over time (Steglich & Snijders 2005).

In most applications of network analysis, the notion of *interdependence* generally refers to the relationships between network structure and the characteristics of individual actors in a network. This notion is conceptually different from the one generally associated with the neo-progressive movement (Miller 2002) or the public management scholars (Agranoff & McGuire 2001; O'Toole 1997). In their lines of argument, when one local government is dependent upon another to implement a set of policies, they are regarded as being interdependent for the successful implementation of a particular set of policies. For us, interdependence follows the logic of network dynamic i.e., the changing relationships between network structure and individual characteristics of actors over a period of time.

5.1.1 Evolutionary Institutional Theories

Evolutionary institutional theories use spontaneous emergence, market-coordinated exchange, or social selection as mechanisms to explain the dynamic of metropolitan governance. These mechanisms, in order to explain the ongoing stability of metropolitan governance, emphasize the importance of rules as a means to stabilize relations or coordinate exchange in order to provide collective benefits. Oakerson (2004) for example, emphasizes that the dynamic of metropolitan governance as a structure does not come from governments, but instead from the efforts of human beings doing the work of a civil society. Changes in the structure reflect local efforts at problem solving, as the people living in these communities alter existing arrangements of governance and government political structure in ways that best serve their needs to solve their own particular sets of problems. He further suggests that “governance structures provide regularized means for identifying and diagnosing problems, elucidating information, arraying and assessing alternatives, and crafting rule-based solutions, as well as monitoring those arrangements for both implementation and possible alteration” (Oakerson 2004).

Based on Oakeson's explanation of the development of metropolitan governance, the process of change appears to reflect self-governance in its purest form (Carr 2004). This variant explained metropolitan governance as a process of spontaneous emergence or market-coordinated exchange, where local actors modify the institutional base of government in the community because the new governance form is better able to meet the needs of the community; this change is the product of actions of freely consenting local actors and was not imposed through coercion by government. Metropolitan governance evolving through organic variation of nested rules is selected by people living in metropolitan communities on the basis of the efficiency of a set of rules. Like arguments made by classical theorists such as Vincent Ostrom, Charles Tiebout, Charles E. Lindblom and others, the basic setting for facilitating both variation and selection is through the market via the processes of competition or mutual adjustment. That is, local governments have the capacity to create and select a set of rules that will do the best job of minimizing the costs of their collective efforts.

There are several problems with this perspective. First, local governments faced with collective action problems may not have the information and knowledge necessary to produce such efficient sets of rules governing their relations; they may opt for creating a set of rules themselves, but lacking the information necessary to do so, such as knowledge of the costs of monitoring long term performance, they will have inadequate subjective models about the effect of their efforts on the institutionalization of the actions of others. Second, the costs of producing socially efficient institutions may be prohibitive, especially if the causes of inefficiency are introduced by third party enforcers such as state or federal governments, whose own utility functions influence outcomes (North 1990: 73). Because state or federal governments may have interests that are in conflict with those of local governments and because they choose a set of rules that maximizes their own interests, they may produce a set of rules that do not maximize the collective welfare. Thus, the creation of institutionally efficient governance is thwarted by the contrary interests of political actors.

Another variant of the evolutionary theory relies on the adaptability of natural selection mechanisms (March, Schulz, & Zhou 2000). A set of rules governing interlocal relations is suited to a particular condition of a particular environment. The environment will “select” a set of rules for its efficiency in monitoring, sanctioning, and maintaining interlocal relations, while the rest are simply ignored, fail or disappear (or at least modified or changed). Formal structures, leadership styles, and other organizational characteristics of an optimal solution, say in contractual arrangements, are truly selected for maintaining such transactions even though those involved might not be aware of the causal connection. Less efficient alternatives are falling by the wayside. The resulting forms of arrangements are not necessarily optimal, for the system of delivery can only select from a set of arrangements that are tried by local officials involved in a variety of transactions. And there is no guarantee in a world of uncertainty and bounded rationality that an optimal solution to the arrangements will be discovered and put into operation. Nonetheless, natural selection favors better contractual arrangements over time, and in that process (the missteps and myopic choices occur at the dyadic level), it creates and provides options for local officials.

In fact, the natural selection process does more than this. The advantage of the natural selection process is that it takes those arrangements that were poorly designed or inefficient and upgrades them to the macro level--the metropolitan level. To a larger extent, this is what the whole selection process is all about. Just as mutation operates among biological mechanisms, innovation--whether consciously designed or internally unintended--generates new forms of arrangements available for selection by the system. Of course, through trial-and-error, imperfect imitation and sheer chance may result in/produce contractual failure; some portion of the new arrangements produced tends to be well suited to particular conditions of a transaction, if not better than the existing ones, in governing interlocal relations.

Similar to the theory of metropolitan governance proposed by Oakerson, the evolutionary approach of natural selection faces parallel criticisms mentioned above. In addition, another criticism (which is theoretically more interesting) is that, although both

approaches explain the dynamic of a set of rules--that is the best set of rules performed the best set of outcomes and therefore was allowed to reproduce preferentially--both approaches somehow fail to take into account how local governments might be influenced by the actions of others in adopting the proposed or agreed set of rules. In other words, both approaches generally fail to separate the dynamic effects of metropolitan governance from the emergence effects of metropolitan governance.

5.1.2 Intentional Design Theories

Another set of theories of institutional collective action is based on the logic of intentional design. The approach adopts a contractual or legal statute as a framework to examine the development of metropolitan governance and how governance facilitates collective action between units of governments, nonprofits or private sectors. That is, the intentional product of either (1) an enforceable exchange of resources or benefits among actors, or (2) political competition over the influence of public policymaking.

The first variant of intentional design theory is based on Carr (2004), who posits that a set of rules imposed by state or federal intention influences the form of cooperative relationships of local governments and their communities (Carr 2000, 2004; Post 2002; 2004; Burns 1994). The argument is as follows: state and federal laws present collective action problems that actors face. They create institutional arrangements that have predictable effects on local actors i.e., some statutes confer on certain groups more advantages than others. They shape the strategy options and the solutions to collective problems. Relying on Olson's work to examine the collective action problems facing local officials in pursuing a particular policy objective, Carr (2004) argued that special interests groups used state and federal statutes strategically to achieve their goals. The predictable effects of state and federal statutes increase the probability of choosing a winning strategy. In the case of cooperative behavior, by the same token, local governments can use and have used statutes introduced by state government to influence the action of others. They choose the types of contractual arrangements based on the contextual factors that can minimize costs in the transaction.

Differing levels of influence insert differing levels of state-granted authority to local governments in their activities with others. According to the intentional design perspective, any form of chosen institutional change can be argued to be the winning strategy for overcoming collective action problems such as bilateral or multilateral types of contractual arrangements between local governments. To pick the right set of rules is to win the game. The point here is that the approach seeks to understand what, if any, restrictions are placed on local governments participating in contractual arrangements. These restrictions have a predictable effect on local actors and therefore are used by local governments to overcome their collective action problems. The choice is also based on the stability of rules that have evolved over time. These rules define who will be at a disadvantage or advantage. Given the stability and predictable effect of a set of rules, the intentional design perspective argues that social actors play by the rules of a game in a sense that they choose which set of rules to use in order to win. But as Schattschneider reminds us: “Resources sufficient for success in one game may be wholly inadequate in another” (Ibid: 47-48).

The second variant is based on the “bottom-up” conception of institutional design. That is, the emergence of metropolitan governance is influenced by a cohesive set of interest groups (Molotch 1973; Stone 1989). Clarence Stone’s (1989) observation in Atlanta reminds us that informal cooperation between interest groups and local governments is one form of effective metropolitan governance from below. Governance as a set of rules that govern such coalition relations is based on “the informal arrangements by which public bodies and private interests function together in order to be able to make and carry out governing decisions” (Stone 1989: 6). A cohesive set of local elites build an informal cross-sector coalition or partnerships with business elites and others who control needed resources to guide the coalition in setting goals and achieving social production performance. Any governance structure that can create a capacity to govern under seemingly ungovernable conditions has power, “power to” undertake complex objectives and solve problems in a politically fragmented and gridlocked world. Such a coalition also provides an incentive structure for what Stone calls “small

opportunities” in the form of jobs, housing, and other selective benefits that attract the support and allegiance of average citizens (Stone 1989: 206).

Despite the normative appeal of the regime theory proposed by Stone, the application of this theory to the emergence of metropolitan governance fails to specify the political, economic, and institutional contexts that shape regimes. In particular, they fail to specify how the interactions within the regime coalition are maintained when strategic preferences change. That is, given the multiple actors in the coalition and their different preferences, how do the actors influence each other’s behavior to comply with the dominant set of formal and informational institutions governing their behaviors? This line of work is concerned much more with the regime coalition than with the institutions that govern their coalition.

5.2 ALTERNATIVE THEORY IN INSTITUTIONAL COLLECTIVE ACTION FRAMEWORK

We advance the theoretical developments of institutional collective action by combining aspects of both the evolutionary and intentional design approaches-- intentional design at the micro-level that is subject to some competitive selection process at the macro-level. The important consequence of such a theoretical framework implies the following conception of metropolitan governance: Governance in metropolitan areas affects the collective benefits and selective incentives of local actors’ on-going affairs and relations, both in their competitive and cooperative exchanges. First, governance may be deliberately designed by state or federal government statutes affecting local actors behaviors; but in some situations, actors may also take their institutional environment for granted and the actions of others as a given e.g., the logic of the public goods market governing exchange and the social norms constraining their actions.

Second, governance is also a by-product of relational actions of local institutional entrepreneurs. Here, local institutional entrepreneurs are confronted by actions of other local governments such that their actions are dependent on (of influenced by) each other’s actions as well. In this situation, local governments choose their partners and a

set of rules strategically by incorporating the expectations of actions, not only of their immediate partners, but also the actions of other governments with whom their partners are interacting. When making strategic decisions, they are aware that the outcomes of their interactions are the product of mutual choice and that their choices are affected by the choices of others (Elster 1986). They take into their calculus of decision-making the actions of others that are not directly linked to them.

5.2.1 Metropolitan Governance Revisited

We view a metropolitan area as buzzing with contractual activities and that these activities are nested at different levels in the action arena. Local governments involved in contractual activities are connected through their contractual arrangements, forming what we refer to as institutional ties. A network of interconnectedness of institutional ties represents a pattern of relations between local governments. Such a network structure is not static but evolves over time.

Figure 2 shows the theoretical framework used in the rest of this dissertation to understand the emergence and dynamic processes of metropolitan governance. It reflects the process of change in the formation of metropolitan governance i.e., the interconnectedness of a set of institutional ties, together with relevant attributes or characteristics of local governments evolving simultaneously in a dynamic process. In other words, institutional ties formed and established in metropolitan areas change and evolve; the social actors' relations that establish these ties are also influenced by a configuration of other relational ties as well as other contextual factors, i.e., physical and institutional attributes such as proximity or forms of government. These factors are explored further in the next chapters. Suffice to mention the model suggests that dynamic and emergent processes are explained partly by the contextual factors, i.e., the changed process of the all possible configurations of institutional ties established by local governments and partly by a pattern of network structures.

In this model there are 4 continuous moments, the first metropolitan governance structure (at the previous moment) affects the process of change of the actor's contextual factors; the contextual factors at the previous moment affects the process of change of the metropolitan governance in the next moment. Note the effects are on the process of change.

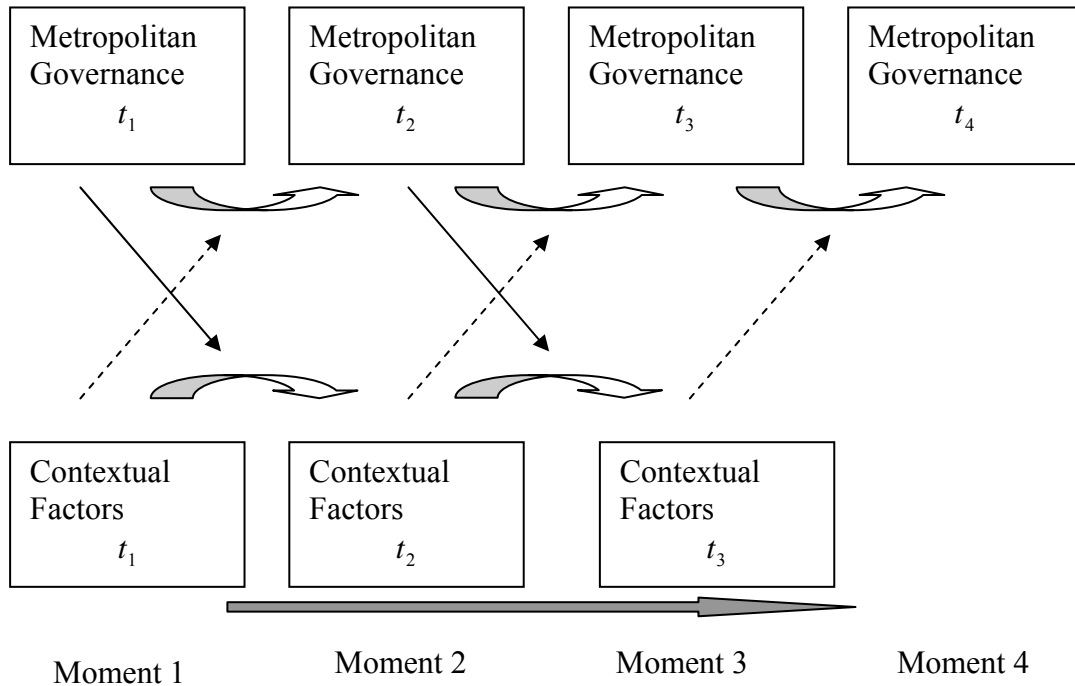


Figure 2. The Dynamic Process of Metropolitan Governance in Four Observation Moments

What explain the formation of metropolitan governance? A local government's institutional ties form and dissolve, typically cover a limited period of time, and are partly determined by their contractual requirements and obligations. Such changes can also be purely structural--explained by endogenous network mechanisms such as reciprocity, density, or transitivity. Also, there are other factors that might influence the change in dynamic of metropolitan governance such as local government's institutional characteristics i.e., forms of government, level of government, number of council members, and municipal charters. Other factors include demographic characteristics such

as median income, racial composition, and/or political boundaries among others that can also influence the rate of change of a network structure.

A set of factors that explains the emergence and dynamic processes of metropolitan governance has been referred to as the “contextual factors” or “institutional context” (Kirlin 2001; Feiock 2004, 2005). That is, the ability of local governments to absorb transaction costs of establishing and maintaining institutional ties depends on the contextual factors that could ease the transaction costs of creating solutions to the problems of coordination of local government preferences, negotiation of payoffs, and enforcement of an agreed set of rules. Hence, it is determined by the rate the formation of metropolitan governance occurs.

Stephanie Post (2004) examines five contextual factors influencing the level of local government cooperation: the geographic density of metropolitan governments; the number of local governments and the heterogeneity of their population; the extent to which local governments have common policy preferences; the extent to which local governments can act as institutional entrepreneurs; and the extent to which actions of state and federal governments facilitating selective incentives encourage local governments to cooperate. Recently, Feiock (2005) proposed four broad contextual dimensions: the characteristics of goods and services, community characteristics, political institutions, and policy networks. According to Feiock, these dimensions can capture the extent to which local governments can ease the transaction costs of negotiating, implementing, and monitoring their interlocal contractual arrangements.

The following section elaborates the effects of network structures on the formation of metropolitan governance. It then explores the other contextual factors such as political institutions and characteristics of jurisdictions.

5.3 THE STRENGTH OF INSTITUTIONAL TIES

In order to understand the dynamic process of metropolitan governance structure in the provision of public safety it is also of crucial significance to appreciate the

differences between the configurations of institutional ties that display a dense and a sparse network structure i.e., the strength of institutional ties. For example, in the provision of public safety (or any other type of collective goods), each local government spends its resources working on multiple tasks of negotiating, planning, implementing, and monitoring agreements. They have only a fixed amount of time, labor, and financial resources to spend on a contractual arrangement such that resources that a locality spends on a given arrangement is inversely related to the number of agreements it has with other local governments. In other words, the partner(s) who local governments have joined in an agreement is as important as how many other local governments with whom they have entered into agreements.

Scholz, Feiock, and Ahn (2005) recently proposed two general hypotheses relating to the formation of institutional ties in mitigating the problems of collective action. One emphasizes the role of tightly-clustered or “strong ties” relationships capable of enhancing the credibility of commitments among network members, which they called the “credibility-clustering” hypothesis. The other hypothesis emphasizes the role of extensive “weak ties” relationships linking diverse organizations in enhancing shared information required to coordinate collective decision, which they called the “information-bridging” hypothesis. The general hypotheses are consistent with the theoretical framework developed in the previous section--the dynamic process of metropolitan governance can be explained by the endogenous factors such as the effects of network structures. That is, depending on the prevalence of particular network structures, the dynamic process can be captured to explain why certain metropolitan governance occurred over time.

5.3.1 Credibility-Clustering Hypothesis

The credibility-clustering hypothesis suggests that the credibility advantage of clustered institutional ties becomes increasingly important when there is a potential problem of shirking by localities involved in the delivery of collective goods. The threats of shirking impose great costs to those who have already invested their resources, efforts

and time in the collective action. From the transaction cost perspective, the advantage of having a clustered network reduces the cost of enforcing the legal terms of interlocal contractual arrangements because any actions taken or not taken by a locality are made public. Other localities whose common concerns and shared beliefs can provide threats of collective sanction will enhance the credibility of punishments being imposed.

The credibility-clustering hypothesis is based on two important assumptions: First, two actors having a memory of past encounters as well as expectations of future dealings with each other are assumed to have an effect on the fulfillment of their contractual obligations. Second, it assumes that such contractual relations are voluntary in the sense that breaching a contractual arrangement, though costly, is still a feasible option. So, for institutional ties established through bilateral agreements (involving only two local governments), it is crucial to understand that such ties are “semi-permanent structures” in the sense that the agreements are short term and can be terminated by the consent of both parties (Scharpf 1997: 137). Although institutional ties arise through a set of bilateral contractual arrangements and are maintained because of the benefits they can provide compared to other sets of contractual arrangements, there are inherent difficulties in knowing other actors’ true intentions. It is also uncertain whether the outcomes from a contractual arrangement can be realized without occur some forms of implementation costs. A set of contractual arrangements, with its terms and conditions and obligations, actually can limit/constrain the opportunities for productive or even mutually profitable exchanges.

At the dyadic level, a set of strong institutional ties implies expectations that the other local government (alter) will avoid a strategy option that is attractive to itself and seriously hurt its collaborative partner’s (ego) interests. Rapoport (1963) referred to highly clustered ties--consisting of triadic relations--as “triadic closure” (See Figure 3). For example, in the case of an emergency, some forms of assistance can be expected from other jurisdictions even if such assistance might entail considerable costs to the helper. To resolve the institutional collective action, parties to the agreements would prefer to form bilateral agreements with other localities (alters) that have established

institutional ties with each other in order to ensure that the terms of the agreement and the benefits of cooperation are also realized.

By the same token, a highly clustered network, it is argued, has the ability to impose constraints on localities that attempt to shirk or act opportunistically, and thus ensure the stability of provision of services. Strong institutional ties can alleviate the difficulties associated with negotiating a contractual arrangement and can also be equated with some degree of reciprocity and trust in implementing the agreed set of contractual arrangements. A highly clustered network provides extensive monitoring mechanisms, facilitates mutual reciprocity and trust, and ensures that members in the network play by the rules of the game. That is, a highly-clustered network structure facilitates parties to the agreement to carry out each side of the agreement. In this sense, the credibility-clustering hypothesis also shares many of the assumptions of a highly dense network structure that contributes to social capital (Coleman 1988; Putnam 1995).

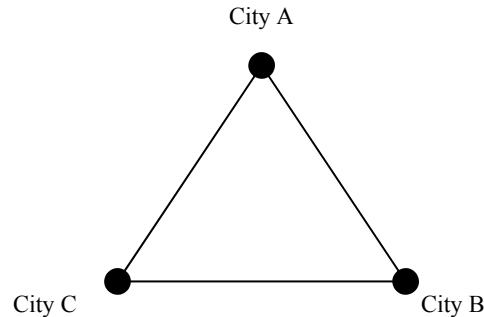


Figure 3. “Triadic Closure”

For densely interconnected institutional ties, the benefits of collaborative efforts can flow to individual units of local government by providing them with access to other potential credible partners and thus increasing available resources and expertise (Park 1990). In this sense, a dense network structure increases the “spirit of cooperation” among its members. On the other hand, strong institutional ties also create conditions under which reliable information (such as important resources) about defectors are accessible. This not only increases the visibility of members that might attempt to act

opportunistically but also increases the severity of sanctions since self-interested actors are likely to distrust partners that are known to have been defectors in other instances. Although credibility is difficult to build and easily destroyed when disappointed, it does provide a mechanism necessary for the trustee to avoid even the appearance of untrustworthy acts in a situation that is transparent to others. So, for a local government to breach a contractual arrangement there follows the anticipation of a costly investment necessary to rebuild its credibility if destroyed. In a dense network structure, it adds greatly to the incentive for members to maintain credible commitments.

The implication therefore is that each actor is able to maintain only a limited number of strong ties because strong ties involve a costly investment. That is, local governments will not be able to establish strong institutional ties with all others in a particular network space. In other words, networks constituted by strong institutional ties at the dyadic level are likely to have a highly selective structure at the macro-level. This notion is closely related to the “preferential attachment” phenomenon explained by the homophily hypothesis. Technically the phenomenon is referred to as a highly-skewed distribution of vertex degree. For example, within the context of our study, the degree of a vertex can be regarded as the number of other local governments (alters) to which a local government (ego) is connected (i.e., the number of institutional ties established by ego). The homophily hypothesis is discussed further in the next section.

5.3.2 Information-Bridging Hypothesis

The second general proposition is based on the information-bridging hypothesis, which suggests that the advantage of bridging information flow varies in terms of how easy or costly it is to transmit crucial information from the source to those that require the information. If vital information for today’s operation arrives a day late, then the information is worthless. In the case of an emergency, what is done during the first few hours may well determine the success and failure of the response and the cost of recovery. For the police or EMS, those few hours make a difference in life and death situations. So, a sparse network structure or weak institutional ties will emerge in the delivery of such

goods. For example, communications services (800 MZ) involving E911 public safety dispatching and emergency medical services (EMS) require a central agency to coordinate and carry out region-wide radio system operation and maintenance. They generally have a sparse communication network to coordinate information flow.

The notion of “information bridging” refers to two possibilities. First, it refers to a path most individuals in a network must transmit information through in order to reach the others directly, and thus a highly sparse network structure may be observed when institutional ties are centered on a few dominant actors (See Figure 4). Richard Emerson (1962) referred to such a structure as having exclusive exchange partners. Here, power is conceptualized as an asymmetrical exchange relationship, in which City B’s dependence on City A is defined by both the importance of the resources (or service) and the lack of alternative sources in their provision. This line of argument led to several important developments of network theories that emerged in sociology during the 1970s, most notably Granovetter’s (1973) piece on the “strength of weak ties”; Freeman (1977) on betweenness centrality; and Cook and Emerson (1978) on the power of having exclusive exchange partners.

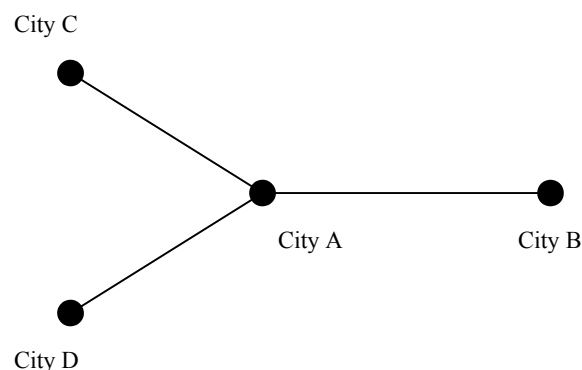


Figure 4. Unilateral Dependence

For example, in a dyadic tie where both cities might have an interest in concluding the deal but might differ in their preference for one or the other outcomes, both of them can obtain their second-best payoff by bargaining. Neither could credibly threaten to break off the negotiations in order to obtain the best payoffs since non-

agreement would lead to both being worse off. However, if City A should obtain an alternative source for the service performed by City B, the configuration of institutional ties will change. Since City A could claim at least its second best payoff, it can threaten to break-off negotiations unless it was offered its most preferred payoff. City B and the other jurisdictions may not have an alternative but to give in. In other words, by being the dominant actor among competing parties, the central actor is able to capture all potential gains from cooperation with either of its partners.

Substantively, if City A, having a mutual aid agreement with City B and City C implies City A can request assistance from City B and City C, logically according to the information bridging-hypothesis, neither City B nor City C could render assistance to each other without incurring financial and legal costs. Scharpf (1997) refers to this network structure as “unilateral dependence.” Here, City A has a better capacity to cope with an emergency than City B or City C unless the State should intervene via a state-wide mutual aid agreement. In most instances, however, cities tend to enter into mutual aid agreements with their county government since the county has a better capacity to host and maintain emergency management. In some instances this might not be the case, especially if the central city is large enough to assist other suburb cities given that its available resources and expertise are comparable to the county government.

The second possible explanation for bridging information is that it allows localities not only to discover a broader set of possible gains from others that are inside and outside the region, but also *opportunity* to reach out and take risks in shaping joint agreements and thus reap the advantage of innovation or visions that are not available within a highly-clustered network. While the first explanation emphasizes the importance of a highly-centralized actor having an exclusive exchange partner, the alternative explanation is based on opportunity. That is, the existence or non-existence of network linkages among specific actors creates a highly selective opportunity structure and thus provides advantages when negotiating contracts. This type of network is usually found amongst actors in search of private information. Thus, a sparse or “thin” network

structure will also be observed. The perspective shares many assumptions that have been proposed by Burt's "structural holes" theories (Burt 1992).

To illustrate Burt's argument, imagine a local government's position in a web of contractual arrangements. Assume also the city's position in that network is its social asset--call that the ego's social capital. Now, imagine that the network is disjointed, where there are disconnected individuals on opposite sides of the network space. The empty space between separate groups is what Burt called *structural holes*, and they actually provide the opportunity to broker the flow of information. By filling the structural holes, ego brings different subgroups together thus having more social assets than the others in the network. The concept of social capital, in this case, is defined in terms of the information exchange ego can provide to two subgroups in the network space, i.e., the comparative advantage of having the position in the network whether to diffuse or retain important information between people that otherwise might be disconnected from each other. According to the structural holes theory, ego will perform better relative to others if he or she acts as broker.

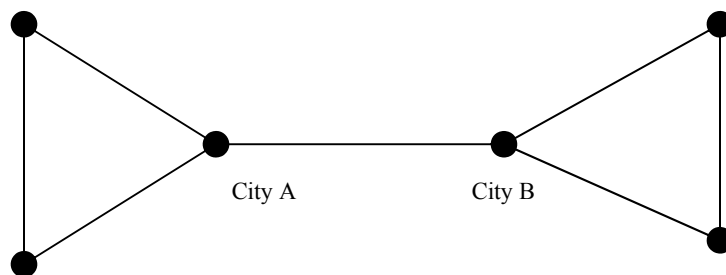


Figure 5. Structural Equivalent

The opportunity that structural holes can provide implies that its influence can be neutralized if either City A becomes dependent on the resources supplied by City B or if City B manages to find other partners from whom it is able to obtain the same resources

(See Figure 5). The latter is of interest here. The structural holes theory places less emphasis on the volume of information but more on the diversity and quality of information that is being exchanged. The importance of information flow between seemingly different sets of groups, which are otherwise disconnected, is the key to Burt's structural holes argument. Burt (1992) does not argue that a sparse network produces social capital. Rather he makes a case for the importance of being a broker or information bridge in that network. Those that fall into a sub-graph having a high clustering score or network density would generally be at a disadvantage and perform poorly because the information they have is generally redundant compared to those who fill the position as a broker. The broker not only bridges useful or quality information between the sub-groups but also controls them and therefore will benefit more in terms of having better payoffs.

To summarize, the contextual factors that explain the dynamic of metropolitan governance can be captured by endogenous effects such as different structures displayed by the formation of institutional ties, i.e., a highly-clustered or sparse network structure. We hypothesize that when there is a potential interlocal cooperation problem, a highly clustered network structure will explain the formation of metropolitan governance; when there is a potential interlocal coordination problem, the effect of a sparse network structure will emerge to curb the coordination problem.

5.4 THE INFLUENCE OF INSTITUTIONAL AND POLITICAL STRUCTURES

The formation of institutional ties is also influenced by political institutions. Certain political institutions would lead local governments to prefer different forms of arrangement to govern their interlocal transactions. Depending on the forms of contractual arrangements, local governments choose their potential partners selectively. This is because there are limits to a local government's ability to form strong institutional ties with all other jurisdictions. The interconnectedness of institutional ties may be clustered around a selected few, or alternatively, sparsely distributed across a diverse number of local governments. While the former gives rise to metropolitan governance that is based on densely-connected institutional ties within a clustered political boundary,

the latter produces a sparse distribution of institutional ties across all other boundaries. How does institutional context influence the formation of these ties?

The formation of institutional ties is influenced by the different incentive structures that may constrain the behavior of institutional entrepreneurs. Within a local municipal boundary, according to Raab (2002), there is a difference between political and administrative actors in a hierarchical structure. Here, the traditional view of political-administrative relations generally implies that the administrator works in the politician's favor. However, in a situation where there is rapid political change or technical difficulties, administrators regularly dominate because elected officials have difficulties in holding control rights and influences. Gary Miller (2000) argues that the progressive reform "myth" of separation of politics and administration institutionalized in reformed council-manager forms of government helps elected leaders resist opportunism. Others have viewed such relations as competitive in the sense that competition drives local officials, elected or appointed, to establish certain institutional ties that would reward them with selective benefits (Post 2002).

To develop my argument that elected officials and professional managers have different motivations for engaging in contractual arrangements, I wish to limit my use of the term "competition" in two ways. First, I speak of competition in terms of political conflict that arises from a local government's choice of contractual arrangement from one that emphasizes collective benefits to an arrangement that potentially could enhance the individual's selective benefits. Second, I speak of only those contractual arrangements that have positive effects on the provision of services. The point here is that everyone benefits from certain interlocal contractual arrangements but some benefit more than others. In this regard, elected officials are particularly competitive over who should get credit for the success of an agreement, while local managers are competitive over the managerial decisions that could improve service provision through arrangements across jurisdictions. Specifically, each is likely to use private information about costs incurred and benefits gained from any joint project to indicate why it requires certain concessions to make participation worthwhile. Although it is not certain whether elected officials are

creating or reacting to controversial issues, evidence seems to suggest the former is the likely reason for elected officials to be competitive, i.e., as a means to set a political agenda for themselves and create political gimmicks to win popular votes, while professional managers generally aim for career advancement.

Feiock (2004) recently also has argued that certain institutions of local political system have been shown to constrain risks of opportunistic behavior by both elected and appointed leaders. Kreuger and McGuire (2005) assert that “the city manager function can be viewed as a mechanism for reducing information costs associated with policymaking in a complex environment” (Kreuger & McGuire 2005: 11). The professional standing and employment opportunities of city managers are improved by service innovations and a record of promoting efficiency at both the city and regional levels (Feiock 2004). LeRoux and Carr (2004) and Kreuger (2005) report that the council-manager form of government predicts interlocal contracting. The role of professional administrators is also highlighted in Thurmaier and Wood’s (2002) account of interlocal agreements among governments in the Kansas City metro area. That is, while department directors identified opportunities for cooperation in specific service areas and the city manager, Chief Financial Officer and/or assistant managers put the deals together.

Although theoretically we are well informed about the motivation behind elected officials and their professional counterparts in entering into an agreement, it is uncertain with whom they are likely to form close relationships. That is, it is uncertain whether professional administrators such as the chief of police, the city manager, the Chief Financial Officer, or assistant managers would prefer to establish strong relationships with similar others, or whether their preference for similar others is also likely to influence their decision on the form of contractual arrangements adopted. The logic is based on the homophily hypothesis, which suggests that the tendency is for people to interact more with their own kind, whether by preference or induced by opportunity constraints (McPherson & Smith-Lovin 1987). The preferences are defined by such individual characteristics as race, gender, educational class, organizational unit, and so on.

The homophily theoretical argument is intriguing: when someone interacts with those that have similar characteristics, it is assumed that the interactions are efficient to the extent that (1) their similarity can facilitate efficient transmission of tacit knowledge (Cross, Borgatti, & Parker 2001:229), (2) make coordination easier (Ancona & Caldwell, 1992; O'Reilly, Caldwell, & Barnett 1989), and (3) avoid potential conflicts (Pelled, Eisenhardt, & Xin, 1999; Pfeffer, 1983). These are some of the empirical questions explored in the next chapter. Suffice it to say, theoretically, it is possible that professional administrators generally prefer to form institutional ties with similar others.

Professional administrators also prefer to enter into restrictive contractual arrangements and when they do, they generally prefer to enter into such arrangements with those that have similar professional backgrounds. Why do they prefer to enter into restrictive rather than adaptive forms of contractual arrangements? First, appointed professional administrators are driven by “low-power” administrative incentives rather than “high-power” political incentives (Frant 1996). They prefer to enter into a restrictive form of contractual arrangements because one of their many administrative responsibilities requires them to identify opportunities to produce or provide services at minimal costs rather than seek political rents. These opportunities when translated to an agreement often involve transfer of rights and responsibilities from one jurisdiction to another⁷. Professional administrators in a council-manager form of local government generally have more of a role to play in establishing restrictive forms of contractual arrangements because decisions, when approved by city commissioners and translated into local ordinances, do not require the approval of local residents. This is particularly true if a city’s charter does not allow petitions or requests for a referendum on an ordinance driven by budget issues. In this sense, local governments dominated by professional administrators are often active in institutional arrangements involving restrictive forms of contractual arrangement.

⁷ Note that the Florida constitutional requirement for a dual referendum to uphold intergovernmental transfer of “function and power relating to services” is not applicable to intergovernmental transfer of regulatory powers--City of New Smyrna Beach v. County of Volusia, 518 So.2d 1379, 1382 (Fla. Dist. Ct. App. 1988).

Second, their dealings with other jurisdictions generally include services that have high asset specificity investment such as vehicles or equipment maintenance. Although such narrow purpose arrangements affecting multiple city and county governments are less controversial, they do require thorough considerations in the planning and implementation of an agreement. They necessitate that professional administrators develop a clear set of working rules to secure and safeguard their transactions. Despite some transaction costs associated with negotiating and implementing the agreement, the costs may be outweighed by the benefits when there is a need to allocate additional revenue and/or spread existing costs over a large population. For example, prior to October 1993, the Village of Key Biscayne paid \$3.7 million annually for a contracted fire and rescue service provided by Miami-Dade County. Believing that these costs were too high, the city manager recommended that the village organize its own fully-paid Fire Rescue Department, augmented by an ancillary service agreement for automatic aid from the adjacent City of Miami. The interlocal agreement with the City of Miami calls for a standard monthly fee of \$ 38,333 for “normal or routine automatic aid” requests and an hourly rate based on the type of fire/emergency equipment required. Originally signed in October 1993 and renewed in April 1998, the city manager estimates that the village has saved approximately \$1.2 million annually due to this contractual arrangement.

Why would professional administrators in a council-manager form of government would prefer recommending agreements with similar others? One view is that the politics of interlocal contractual arrangement, as expressed through interlocal relations, is about the professional administrator’s perspective that emphasizes the importance of efficiency of management. That is, efficiency, responsiveness, and effectiveness should take priority over political considerations. Professionalism creates an administrative culture driven by efficiency and the pervasive influence of administrative technique used to govern interlocal transactions. In this situation, managers would make recommendations to enter into an agreement with *any entities* that they might think could generate potential savings or better value for the tax-payers.

Another view is that professional managers, especially in the council-manager form of government, having established norms of professional conduct through their training and associations with other managers, are more likely to establish institutional ties with each other rather than any other entities. Furthermore, because city managers often enjoy longer terms than elected officials, they are able to develop their ties and thus effectively create what Wood (2002) called “professional bonds” crucial for cooperative governance strategies. Such strong institutional ties develop close knit networks and these ties can influence their decisions to enter into other formal contractual arrangements.

5.5 THE INFLUENCE OF COMMUNITY CHARACTERISTICS

According to the institutional collective action framework, local jurisdictions’ characteristics also play important roles in influencing the formation of institutional ties across jurisdictions and thus the formation of metropolitan governance structure. Economic, social, and political characteristics of community populations shape preferences for collective goods and help determine the potential gains and transaction costs of entering into interlocal contractual arrangements. As argued in Chapter 3, homogeneity of preferences both within units and across units is salient. To expand on this argument and apply it to network analysis, we anticipate homogeneity across jurisdictions can signal potential common interests and service preferences for public officials. These officials, bargaining on behalf of their constituents, can gain knowledge about their counterparts in other jurisdictions more effectively if those they work with local officials that have similar constituency preferences.

Dye, Liebman, Williams, and Herman’s (1963) empirical findings in the Pennsylvania metropolitan areas suggest that interlocal cooperation is a function of the social and economic distance between communities. Interlocal agreements were greater in the semi-rural than the urban areas because of lesser social distance among localities than those cities located in urban areas. Agreements among these communities occurred because they have similar social status in the sense that they resemble each other more closely than do non-agreeing communities. Social status defined by the educational level of the working population in a community is an important factor in explaining the

likelihood of interlocal cooperation because it generally reflects local communities' preference as expressed through their particular cultural and social styles of living. Based on the observation of Dye et al. (1963), because demographic homogeneity in a local government unit's population reduces agency costs for officials negotiating interlocal agreements on behalf of citizens, we can expect intra-jurisdictional homogeneity will increase the likelihood of interlocal contractual arrangements. Homogeneity of preferences within local government units is also likely to improve the efficiency of interlocal agreements by reducing agency costs.

Schneider (1987) showed that income homogeneity within suburbs affects both the number of local services offered and the extent of their funding. In suburbs, which are homogeneous with respect to income, preferences for services will be more uniform and conflict over services will be relatively less severe, thus producing a larger government's expenditure. On the other hand, in a more diverse community, conflict between the interests of upper income and middle income residents will be more frequent and more intense and the strategic considerations of economic implications of services and taxes will limit the size of government, and constrain the expansion of interlocal cooperation between affluent and less affluent communities. In terms of interlocal agreements, we could deduce from Schneider's argument that residents of homogeneous wealthy communities avoid the need to pay for municipal services used by lower income clients, and they used interlocal contractual arrangements as one way of avoiding the transfer of payments to the less affluent communities.

Heterogeneous communities can also shape public support or opposition toward interlocal cooperation on particular services. For example, Morgan and Hirlinger (1991) found that jurisdictions with larger proportions of elderly citizens were less inclined to use interlocal agreements. But, Krueger (2005) did not find the effect of elderly population (measured in terms of proportion of population over the age of 65) on interlocal cooperation to be statistically significant. Foster (1997) argues that social impulses occur in areas that share values and as a result are more likely to be associated with interlocal cooperation. She points out that central cities and suburbs having similar

social characteristics are more likely to forge interlocal alliances than are central cities and suburbs with dissimilar attributes. In addition, localities with mixed political affiliations and geographically concentrated minority groups are less likely to cooperate. One possible reason has to do with the type of services requiring interlocal cooperation. For example, a separate study conducted by Morgan, Hirlinger, and England (1988) shows that communities with a high proportion of African-Americans have a negative effect on contracting of health and social services suggesting that such services may be more responsive to pressures from clientele groups.

On the other hand, central cities and jurisdictions comprised of large proportions of racial minorities are more likely to experience fiscal stress, and thus generally favor interlocal cooperation. Krueger (2005) suggests that cities that have a population with greater needs for public service have an incentive to generate slack resources through collaboration with other jurisdictions because such resources can be put to other uses. That is, localities with populations that have dissimilar economic backgrounds generally would prefer to enter into interlocal contractual arrangement as a means to generate resources for additional services. However, the evidence to support such an argument is still ambiguous when racial composition is taken into account.

What argument is there to support heterogeneous communities entering into an agreement with dissimilar others? Even though local governments facing fiscal stress may want to cooperate with other jurisdictions as a means to reduce unnecessary duplication or conflict, take advantage of economies of scale, and (particularly if the contractual arrangement is long term) can profit from the use of experts, the likelihood that other jurisdictions would voluntarily enter into such arrangement may still be questionable. For example, within a heterogeneous locality, if the demand for services is attenuated by the strategic concern of upper and middle income residents that feel such provision of services only acts to transfer wealth, scholars have predicted that such a policy preference would face opposition (Schneider 1988). Similar logic also applies to an interlocal contractual arrangement if such an arrangement acts to transfer wealth

across political boundaries. Here, interlocal contractual arrangements on certain services may be limited because of diverse preferences within a locality.

On the other hand, within a more homogeneous community, the transaction costs of interlocal contractual arrangements between similar others are often lower than in heterogeneous communities. One reason is that homogeneous communities often face less internal opposition because of a wider core of shared values. It is probably more likely that the intensity of differences in homogeneous communities is more muted than in communities that are more heterogeneous. As a result, agreements on services may be more easily achieved because the lack of social conflict may ease any economically based conflicts, facilitating interlocal contracting between homogeneous communities..

Wealthy suburban communities may subsidize services for lower income residents in the provision of certain services via interlocal contractual arrangement. However, such arrangements may be short lived. Political, legal, and bureaucratic pressures may lead to transactions that are somewhat higher than transactions with wealthy communities because, once the services are provided to lower income communities, they mount to provide equal access for local residents. Wealthy suburbs may be more inclined to enter into interlocal contractual arrangements with higher units of governments than less affluent communities because such services (i.e., in the area of public safety), generally consume only a small proportion of suburb governments' expenditures.

If homogenous communities entered into interlocal contractual arrangement, what form of arrangement would they prefer with similar others? Homogenous communities entering into a restrictive form of contractual arrangement may be motivated by services that deal with technical matters rather than issues of regional concern such as mutual assistants or special task forces. The potential for interlocal cooperation based on a restrictive form of contractual arrangement is advantageous for homogenous communities because it is a principal solution for routine services and is fairly non-controversial. Rarely local municipalities would merge or consolidate their services in the

area of public safety unless county government is involved (ACIR 1985). If they do provide the service jointly, such an arrangement generally involves a joint planning arrangement or a restrictive form of arrangement. On the other hand, homogenous communities may not be selective with whom they cooperate in the area of services requiring an adaptive form of contractual arrangement. Since such arrangements are often nonobligatory and legally non-binding, the transaction costs involved when local governments exit are relatively small when compared to a restrictive form of contractual arrangement.

5.6 CONCLUSION

Metropolitan areas are buzzing with interlocal contractual activities and these activities are nested at different levels in the action arena. Local governments involved in contractual activities are connected through their contractual arrangements, forming what we refer to as institutional ties. A network of interconnectedness of institutional ties represents a pattern of relations between local governments. Such a network structure is not static but evolves over time. The process of change can be explained by several contextual factors, i.e., the endogenous effects of network structures, the political institutions of local jurisdictions, and the demographic characteristics of the local jurisdiction population.

Testing the general network hypotheses regarding the formation of metropolitan governance as the result of a local government's decisions to enter into contractual arrangements using the network approach is complex and difficult to model. It requires modeling the changes in the structure of the network over time as a function of endogenous and exogenous variables. Recently, Snijders and his associations have developed an actor-centered model for the network-behavioral co-evolution approach (Snijders et al. 2001). The approach allows a dynamic process of relational ties to be modeled as a stochastic process. In the next chapter, we present the actor-oriented approach to test the general hypotheses regarding the formation of metropolitan governance in four major metropolitan areas.

The four major metropolitan areas in Florida chosen for this study are Tampa-St Petersburg-Clearwater MSA, Miami-Fort Lauderdale-West Palm Beach MSA, Orlando-Kissimmee MSA, and Duval-Jacksonville MSA. In order to determine whether the effects identified in this chapter determined the dynamic formation of metropolitan governance, network software called SINEA (Simulation Investigation for Empirical Analysis) is used in the analysis. The software estimates the implicit value of the related network structures that best explains the observed changes of metropolitan governance structure. Using repeated measures of a social network, SIENA allows researchers to determine if various endogenous and exogenous variables predict the evolution of that network at the macro-level.

CHAPTER 6

ACTOR-CENTERED MODEL FOR NETWORK-BEHAVIORAL CO-EVOLUTION APPROACH

In order to examine the dynamic process of institutional ties and indirectly the formation of metropolitan governance structures in provision of public safety, we selected four metropolitan areas in Florida: Miami-Fort Lauderdale-West Palm Beach MSA, Tampa-St Petersburg-Clearwater MSA, Orlando-Kissimmee MSA, and Duval-Jacksonville MSA. They are the largest and the most densely populated metropolitan areas in Florida. They are also the backbone of Florida's vibrant economy attracting retirees, tourists as well as international investments and national businesses, making Florida one of the fastest growing economies in the country.

Growth presents a dilemma to institutional collective action. On the one hand, it can provide additional sources of revenue to fund local services; on the other hand, it prevents effective collaborative planning as populations move into enclaves and inhibit suburbs making preparation for emergency events such as man-made or natural disasters difficult. Enclaves make it particularly difficult to enforce uniform traffic violation and effective region-wide planning. That is, the provision of services in public safety involving planning and mitigation strategies for emergency and automatic disaster aids across multiple jurisdictions poses potential coordination problems for localities attempting to resolve region-wide concerns. Duval-Jacksonville, for example, does not address public safety issues in the City's Comprehensive Plan (Duval County ISDA Report 2003). Miami-Fort Lauderdale-West Palm Beach and Tampa-St Petersburg-Clearwater require longer evacuation clearance time compared to other less densely population areas. Coupled with control over turf, an effective provision of public safety can also be thwarted by a complex, fragmented political system. Interlocal cooperation

problems may also present dilemmas to local governments, especially in areas involving emergency responses.

Entering into interlocal contractual arrangement either in the form of restrictive or adaptive arrangements may signal the extent to which localities develop institutional ties with each other, but the different configurations of institutional ties actually influence the extent to which metropolitan governance is structured and evolves. We believe certain network structures influence the formation of metropolitan governance in response to particular types of collective action problems. Theoretically, interlocal coordination problems may be resolved when localities develop a dense network structure, which enhances the credible commitment of each partner to fulfill the terms of the contractual arrangement. However, the interlocal coordination problem can be resolved when localities develop a sparse network structure that is important for coordination.

In the next section, we present the data and research design to examine the formation of metropolitan governance structures, which we believe are responding to particular dilemmas of institutional collective action. We limit our study to the four largest metropolitan areas in Florida and assess the formation of institutional ties within the political boundaries of counties that fall in these areas. First, we provide a brief overview of their geographical, demographic, and political structure characteristics, and public safety infrastructure. We then present the research design and data used in identifying the number of local governments included in this chapter. The application of the actor-oriented model and SIENA are presented before discussing the implications of our findings.

6.1 FOUR MAJOR METROPOLITAN AREAS IN FLORIDA: AN OVERVIEW

6.1.1 Geography, Demography, and Economic Characteristics

The Miami-Fort Lauderdale-West Palm Beach metropolitan area encompasses a tri-county area of the southeastern part of Florida. According to the 2000 census, the

metropolitan area has a population of over five million, making it the sixth largest metropolitan area in the United States. The total number of incorporated municipalities in the tri-county area is 96, which is more than any other metropolitan area in Florida. This is in contrast to the Duval-Jacksonville metropolitan area which has a population just over a million with its 13 municipal governments and three county governments⁸. The four counties are Clay, Duval, Nassau, and St. Johns. In our selection list, Duval-Jacksonville metropolitan area is the smallest metro area.

The Tampa-St. Petersburg-Clearwater metropolitan area is a metropolitan area on the Gulf coast of west-central Florida. It includes the main cities of Tampa, St. Petersburg and Clearwater. For the purpose of this study the Tampa Bay metropolitan area includes Pasco, Hernando, Pinellas, and Hillsborough Counties, where there are about 35 municipalities. The population for the Tampa Bay area currently stands at 2.5 million, as of a July 4, 2005 estimate. The next metropolitan area is the Orlando-Kissimmee metropolitan area, which includes four major counties: Orange, Osceola, Seminole, and Lake Counties and 36 municipalities. The metropolitan area covers about a hundred square miles of water and land with a combined total population of 1.8 million.

The basic economic indicators such as income per capita, unemployment rate, and population growth give a snapshot of local economic conditions in the selected metropolitan areas. Table 5 presents the basic indicators in each metropolitan area. They were compared to the state average as a baseline to make the comparison. Almost all indicators in each of the metropolitan areas do not vary markedly from the state average apart from the population growth indicator for the Tampa-St Petersburg-Clearwater metropolitan area. The Tampa-St Petersburg-Clearwater metropolitan area also appears to have had a lower than average population growth between 1990 and 2000. The unemployment rate in the southeast region is somewhat higher than the state average (4.0%). The central region, where Orlando-Kissimmee metropolitan area is located, has

⁸ Baker and Nassau Counties were not included in this analysis because they were not required to submit their Interlocal service Agreement Report to FDCA.

the lowest unemployment rate. Miami-Ft Lauderdale-West Palm Beach metropolitan area has the highest per capita income compared to the other selected metropolitan areas.

Table 5. Basic Economic Indicators

Metropolitan Area	Per Capita Income (\$)	Unemployment Rate (%)	Population Growth (%)
Miami-Ft Lauderdale-West Palm Beach.....	34,320	4.0	23.5
Tampa-St. Petersburg-Clearwater	31,875	3.7	15.9
Orlando-Kissimmee.....	28,522	3.6	34.3
Duval-Jacksonville	31,305	3.9	21.4
State average	31,469	3.8	23.5

Notes: Per capita income and the unemployment rate are based on region wide calculation for 2004 as reported by the Enterprise Florida, Inc. Population growth is the percentage change of total population between 1990 and 2000 (U.S Census Bureau 2000).

There are three forms of political structure in these metropolitan areas. Duval-Jacksonville is a single tier consolidated local government; while Miami-Dade is a two tier political structure, and the rest of municipal and county governments are autonomous and politically independent units. Most counties with Home Rule Charters in Florida are also found in the selected metropolitan areas. A Home Rule Charter is particularly advantageous to both counties and cities. It gives them authority to govern themselves according to local preferences so long as they are not inconsistent with state law and County Administration Law. Out of the sixteen Home Rule counties in Florida, ten are found in the selected metropolitan areas: Broward (1975), Clay (1991), Dade (1957), Duval (1968), Hillsborough (1983), Orange (1968), Osceola (1992), Palm Beach (1985), Pinellas (1980), Seminole (1989).

6.1.2 Public Safety Infrastructure

The extent to which interlocal contractual arrangements have been used to govern local governments' transactions is also reflected by the number of provision units in these services. For example, in terms of public safety infrastructure in the metropolitan areas,

Table 6 below provides an overview. The information illustrates the relative size of the public safety infrastructure in each of the metropolitan areas by their functional responsibilities, i.e., the number of organizations and special districts. While the providers for law enforcement are relatively easy to identify by simply counting the number of law enforcement agencies in one jurisdiction, the providers for fire services and EMS are not as easy. For example, some fire and EMS services such as first response/dispatch communication centers are either consolidated or provided by the local law enforcement agency. Other approaches used to provide the service include the formation of fire control special districts and EMS special districts. Some localities have also complicated the search when two fire districts merged to provide a region-wide service. Given the nature of emergency medical services, we used special districts as a proxy to illustrate the extent to which these services have been provided to residents in the selected metropolitan areas.

There are some variations in the number of providers of public safety by metropolitan areas. For example, compared to the other metropolitan areas, Duval-Jacksonville metropolitan area has only 7 fire departments and one EMS special district. Miami-Ft Lauderdale-West Palm Beach (having more units of governments generally) has more fire departments and EMS special districts. The Miami-Ft Lauderdale-West Palm Beach metropolitan area has the most accredited police forces while Duval-Jacksonville has the least.

The information in Table 6 reflects more than just figures. In the Orange-Kissimmee metropolitan area, Lake County and Summer County established a bi-county corporation to form Lake-Sumter EMS Inc. The information about fire departments also includes municipalities that maintain fire services using volunteer fire fighters. The fire departments of Fruitland Park, Montverde, and Umatilla, for example, are manned fully by volunteer firefighters. In the area of police, some cities that have no law enforcement department contract with their County Sheriff's Office for additional services, while others rely on regional patrol coverage paid for by county taxes. For example, smaller cities like Minneola and Montverde contracted with Lake County Sheriff's Office to

provide law enforcement services. Some law enforcement services provided by local law enforcement departments in Broward County are consolidated with the County Sheriff's Office in order to avoid duplication of services and reduce operation costs.

Table 6. Public Safety Infrastructure in Four Major Metropolitan Areas in Florida

Metropolitan Area	Law Enforce.	Fire Dept.	Fire District	EMS District
Miami-Ft Lauderdale-West Palm Beach...	30	32	1	11
Tampa-St. Petersburg-Clearwater	13	31	6	5
Orlando-Kissimmee.....	11	23	-	6
Duval-Jacksonville	6	7	-	1

Notes: 1. Law enforcement units include airport and university police departments, city police department, and County Sheriff's Office. Only departments that were accredited by Commission on Accreditation for Law Enforcement Agencies (CALEA) were included in this list (2005).
 2. Fire Departments List was taken from State Fire Marshall Annual Report (2002).
 3. Fire and EMS Special Districts include independent and dependent special districts. EMS districts include health care and health facilities categories (FDCA 2005).

6.2 RESEARCH DESIGN AND DATA DESCRIPTION

In identifying the different types of interlocal contractual arrangements in the four major metropolitan areas, we utilized the data compiled by the Florida Department of Community Affairs (FDCA) from various *Interlocal Service Delivery Reports*. This dataset has been described in Chapter 4. We continue working with this dataset.

Table 7 presents the breakdown of the total number of types of agreements between 1988 and 2003 and the categories they fall into (refers to the form of interlocal contractual arrangements). They include new agreements local governments entered into as reported by the Report. The adaptive form of interlocal contractual arrangement appears to be dominated by mutual aid agreements; the restrictive form of interlocal contractual arrangements is dominated by interlocal service agreements. The Miami-Ft Lauderdale-West Palm Beach metropolitan area has the largest number of interlocal contractual arrangement compared to the other major metropolitan areas; Duval-Jacksonville metropolitan area has the least. Although the literature on interlocal cooperation generally agrees that there are multiple ways local governments can establish

institutional ties, as shown in Table 7, there have been few cases where informal agreements have been reported by local governments in either of these metropolitan areas. This does not mean that there are few informal agreements being established between local governments in Florida's major metropolitan areas.

Table 7. Total Number of Interlocal Contractual Arrangements, by Four Major Metropolitan Areas in Florida (1988-2003)

	Miami-Ft Lauderdale- West Palm Beach	Tampa-St. Petersburg- Clearwater	Orlando- Kissimmee	Duval- Jacksonville
<i>Adaptive Form of Contractual Arrangement:</i>				
Mutual Aid Agreement	263	51	121	10
MOU/MOA	15	2	13	5
Letter of Agreement/Informal ...	1	-	-	-
<i>Restrictive Form of Contractual Arrangement:</i>				
Interlocal Service Agreement.....	302	37	174	24
Contract/Lease Agreement	8	8	15	6

6.2.1 Formalizing Metropolitan Governance Structure

Following the basic network analysis approach, a governance structure for the selected metropolitan areas can be represented as an $N \times N$ matrix reporting all contractual arrangements among all N actors. The entry i, j equals 0 if actor i has no contractual ties with actor j , and can equal 1 to indicate the presence of contractual relationships. The actors are municipal and county governments. As defined previously, our interorganizational field that binds these actors together is based on two different forms of contractual arrangements: restrictive and adaptive. For each structure, the data consists of interlocal contractual arrangement defining institutional ties given by a set of N local governments, changing over time, along $H \geq 1$ changing actor attributes. The set of relations are referred to as institutional ties forming a network structure and representing a particular form of metropolitan governance.

The number of actors engaged in each network structure that represents each form of contractual arrangements varies. That is, the number of local governments that entered into known interlocal contractual arrangement varies across contractual forms as well as metropolitan areas. We regarded the forms of contractual arrangements establishing institutional ties as the network space to be analyzed. For the restrictive form of contractual arrangement we identified 159 actors, while for the adaptive form of contractual arrangement there are 160 actors. However, we also need to identify those localities that have not engaged in contractual arrangement but are located within the metropolitan areas in the analysis. By including them in the final analysis, we can make a comparable analysis on the different forms of network space and how they evolved when responding to particular institutional collective action problems. This is discussed further below.

Each network space is captured by a sociomatrix data file that contains all cities and county governments in all four metropolitan areas. Information on the forms of contractual arrangements that define the network space was transformed into a non-directional sociomatrix at four observation moments: $t_1 = 1988-1992$, $t_2 = 1993-1997$, $t_3 = 1998-2000$, and $t_4 = 2001-2003$. The total number of sociomatrix data files is eight (2 network spaces consist of 4 observation moments). Each data file covers the period of 16 years.

6.2.2 Identifying Local Governments

In what follows, we describe the method used to implement the analysis. But first, several important caveats about the data need to be discussed when trying to identify local governments included in the analysis and the approach used to identify the actors that are included in the analysis.

First, although the number of municipal governments in the selected metropolitan areas is higher than the rest of Florida's metropolitan areas, not all cities engaged in interlocal activities or established contractual arrangements with each other. While some

localities entered into contractual arrangements with jurisdictions within their metropolitan boundaries, others engaged with jurisdictions outside their metropolitan areas. For example, the City of Gainesville has agreements with cities in municipalities in the Orlando metropolitan area reflects the importance of interlocal contracts in spanning local activities. In order to take this into account, local governments that are not located in any of the four metropolitan areas but have established some kind of interlocal contractual arrangement with cities or county governments within the selected metropolitan areas are included in the analysis.

Second, those cities that have not engaged in interlocal contractual arrangements between 1988 and 2003 were also included in the analysis. By taking into account the effect of time in our analysis, it provides insight into the dynamic process of metropolitan governance (and thus interlocal cooperation), but it also introduces a problem. Since cities included in the analysis are selected based on the existence of interlocal contractual arrangements within a certain period, the sample selection for each of these metropolitan areas is not random and the final results might be skewed towards large and more experienced cities. As other scholars have pointed out, this is not uncommon in social network analysis. Preferential treatments are inherent in social settings and local governments which enter into interlocal contractual arrangements with certain others are not the exception. To avoid a non-random bias in sample selection, we included those localities not engaging in interlocal contractual arrangement between 1988 and 2003 but which are located within the four major metropolitan areas in our final analysis.

Third, cities and counties often entered into bilateral agreements. But, given the nature of services, some local governments entered into agreements that involved three or more parties to one agreement forming what we referred to as “multilateral ties.” Such agreements present problems because they give an impression that the action arena is highly clustered. There is no obvious way to resolve this problem. One approach is to analyse both types of agreements separately. The other approach is to include both in the analysis but treat multilateral agreements as a control variable. This way, both types of agreements are included in the analysis, giving a complete picture of interlocal

cooperation that forms metropolitan governance. That is, to determine the effect of network structure influencing the formation of metropolitan governance, we only treat a set of bilateral agreements as the main institutional arrangements forming metropolitan governance and, at the same time, controlling for the effects of multilateral agreements on its formation.

Fourth, the four metropolitan areas selected are geographically distant from each other and it does not make theoretical sense to conduct a network analysis that includes all four metropolitan areas as one structure. While it is possible that private or nonprofit sectors, special districts, state, or federal agencies could provide potential links to cities indirectly across the metropolitan areas, they are not considered here because this dissertation focuses only on local governments. Local governments are assumed to have no direct or indirect ties with local governments that are located beyond their respective metropolitan boundaries. In other words, there is no institutional tie from actor i to actor j if one were to be located in the other three metropolitan areas. Here, a technique called “structural zero” is used to resolve the problem and is discussed further below.

Fifth, the length of interlocal contractual arrangements influences the composition of the network structure and thus the formation of metropolitan governance. An institutional tie is not maintained when the agreement has expired or is not being renewed. In this situation, it is possible that local governments can leave a network between the observation moments, thus changing the composition of the network structure. However, in our analysis, local governments are not allowed to leave a network. Even if the actor decided not to maintain a link before the end of the observed moment, the entries of the adjacent matrix will be zero--absence of a tie. In this sense actors are not “allowed to leave the network.” As for those local governments that might enter into an agreement later in the process, even before joining the network, the estimation procedures will treat the actors as having missing links to all other actors and these links are assigned zero entries. In short, all local governments, if they are part of the network at any of the observed moments, are included in the data matrix.

There are several ways local governments can extend their institutional ties to the next observation moments: automatic renewals, the length of the agreements cut across several observation moments, and because previous arrangements overlap with the new contracts. The information about the effective and expiration dates of contractual arrangements becomes important. The information acts as proxy to actor's actions (or inactions), i.e., whether to enter, maintain, or dissolve a contractual arrangement with others in the network. That is, the information reflects the times in which the configuration of ties changes throughout the observed moments. So, the information on the length of contractual arrangement can capture four scenarios: (1) the moment at which the actor is not yet observed to enter into an agreement, (2) the moment the actor entered into an agreement, (3) the moment the actor dissolved or terminated an agreement, and (4) the length of time the actors jointly implement an agreement.

Table 8. Total Number of Contracting and Non-Contracting Localities, by Metropolitan Areas

	Miami-Ft Lauderdale- West Palm Beach	Tampa-St. Petersburg- Clearwater	Orlando- Kissimmee	Duval- Jacksonville
<i>Adaptive Contractual Arrangement</i>				
Contracting Localities	88	21	40	11
Non-Contracting Localities.....	18	28	12	5
Total.....	106	49	52	16
<i>Restrictive Contractual Arrangement</i>				
Contracting Localities.....	67	26	42	13
Non-Contracting Localities.....	39	23	10	3
Total.....	106	49	52	16

Table 8 presents the number of actors in each metropolitan area that have engaged in interlocal contractual arrangement between 1988 and 2003 and those cities that have not. They are presented here to illustrate the difference in the number of actors' compositions in each of the network structures represented by each form of contractual arrangements. For the restrictive form of contractual arrangement there are 148 contracting localities and 75 non-contracting localities; in the adaptive form of contractual arrangement there are 160 contracting localities and 63 non-contracting

localities. The Duval-Jacksonville metropolitan area has the lowest number of actors and Miami-Ft Lauderdale-West Palm Beach has the highest. The contracting localities here are the cities and county governments that have entered into an agreement with other local governments originated within or from the four metropolitan areas. The total number of localities included in the final analysis is 223.

6.2.3 Explaining Structural Zero

As discussed above, it does not make theoretical sense to analyze the formation of four metropolitan governance structures as one big structure without taking into account the distance between them. For example, local governments in the Duval-Jacksonville metropolitan areas may not interact with local governments in the Miami-Ft Lauderdale-West Palm Beach metropolitan area. They interact frequently with those local governments that are geographically closer to them. Structural zero is a built-in technique in the SIENA software. It offers the possibility of analyzing several network structures simultaneously under the assumption that the parameters are identical. That is, it is possible to analyze the network structures in all 4 metropolitan areas simultaneously without having the actors from different metropolitan areas establish a contractual link.

Structural zero means that we are certain of no tie being formed between actor i and actor j located in two seemingly distant metropolitan areas. For example, in our study, actors located in all four metropolitan areas are assumed to have no institutional tie that links them across different network structures. Furthermore, since one of the metropolitan areas (i.e., Duval-Jacksonville) has a relatively small number of actors from which to obtain good parameter estimates, the technical advantage of using structural zero is warranted. It examines the dynamic process of Duval-Jacksonville's metropolitan governance formation with the other network structure simultaneously but the estimates only reflect the possible connection among actors in the same metropolitan areas. Next, we describe the procedures used to combine all four metropolitan areas' network structures while taking into account the distance between metropolitan areas in the analysis.

From table 6.4 above, the network structure for all four metropolitan areas was integrated into one network of $106 + 49 + 52 + 16 = 223$ actors. Here, the four adjacent matrices representing each metropolitan network structure were combined in one data file in four diagonal blocks. The off-diagonal blocks were coded 10 to indicate structural zero (Snijders et al. 2005). For each observation moment, we have two data files containing a 223×223 data file for each of the network structures representing institutional ties established either through the restrictive or adaptive form of interlocal contractual arrangements. In our study of metropolitan governance, where there are four network structures combined artificially into one bigger network, three dummy variables at the actor level were introduced to distinguish between the different network structures.

6.2.4 Changing Institutional Ties

For each network space, the information on the forms of contractual arrangements was transformed into a non-directional sociomatrix at four observation moments: $t_1 = 1988-1992$, $t_2 = 1993-1997$, $t_3 = 1998-2000$, and $t_4 = 2001-2003$. We estimate which of the network structures (network space) described above were most sought by local governments in the four major metropolitan areas. We have done this by analyzing the changes in their institutional ties from t_1 to t_4 .

For each form of interlocal contractual arrangement, the changes in institutional ties ($0s \rightarrow 1s$ and $1s \rightarrow 0s$) between three periods are summarized in Table 9 and Table 10. In particular, for the network space representing the restrictive form of contractual arrangement, there are 45 new ties being created between t_1 and t_2 ; 56 new ties between t_2 and t_3 ; and 76 new ties between t_3 and t_4 . The total numbers of ties that are maintained within these periods are 19, 27, and 64. It appears that local governments generally maintained their institutional ties and established new ties as time progresses. In the same sequence, the numbers of institutional ties being broken are 32, 37, and 19 respectively. A similar explanation also applies to the information in Table 10. Note that there are more activities in Table 10 than activities in Table 9 suggesting that there are

more interlocal arrangements being established, maintained, or broken in an adaptive form of contractual arrangements.

Table 9. Institutional Tie Changes between Subsequent Observations: Restrictive Arrangements

Periods	No Tie 0→0	New Tie 0→1	Broken Tie 1→0	Maintained Tie 1→1
$t_1 - t_2$	24,657	45	32	19
$t_2 - t_3$	24,633	56	37	27
$t_3 - t_4$	24,594	76	19	64

Table 10. Institutional Tie Changes between Subsequent Observations: Adaptive Arrangements

Periods	No Tie 0→0	New Tie 0→1	Broken Tie 1→0	Maintained Tie 1→1
$t_1 - t_2$	24,641	52	42	18
$t_2 - t_3$	24,586	97	44	26
$t_3 - t_4$	24,546	84	24	99

Simply counting the number of new changes in the structures for each period of network spaces being studied would not provide the test we seek, since random additions of links could account for such changes. That is, as the number of actors in a network gets larger, the number of possible ties in the network increases dramatically. The question then is to understand why the observed ties that formed a network structure occurred out of the rather larger set of other possible ties. For example, the Duval-Jacksonville metropolitan area has 16 actors in its adaptive arrangement network space. Hypothetically, let us consider two extreme states of a network space. At one end of a continuum, all 16 actors might not have established any interlocal contractual arrangement between them; on the other extreme continuum, they all entered into multiple types of contractual arrangements--forming what the literature calls “completely connected networks.” Along these two extreme continuums, there is a very large number of possible configuration of ties to be established that there is a possibility that the 16

actors can each have contractual arrangements to the 15 other local governments. Hence, the Duval-Jacksonville network space for adaptive contractual arrangements can have a total of 240 (16 times 15) potential institutional ties. In a binary network, where a link is either present or absent, there are 2^{240} possible configurations of institutional ties--a staggering number of possible ties.

Now, stand back and think of the possibilities when time is introduced in the analysis. When analyzing network panel data, each measurement of network structure must correspond to the network space containing the number of possible configurations of ties. The explanation of the observed network dynamics (a change in network structure from one network space at t_1 to another network space at t_2 and so on) is formulated in terms of transition probabilities between both network spaces, with the first observed network space being conditioned upon the previous process (taken as starting value of the stochastic process).

To obtain a test of the relative value and significance level for each metropolitan governance structure requires a model that not only accounts for the potential random effects (i.e., possible ties), but also is conditioned on the original network and takes the relative dependence of all ties into account. In the next section we present methods used in the SIENA software that estimates models of network evolution based on what Snijders (2001, 2005) calls the “actor-oriented model.” The model estimates factors that explain the changes in institutional ties--the frequency by which an actor has the opportunity to make a decision over a period of time (Snijders, Steglich, Schweinberger, & Huisman 2006: 17).

6.3 NETWORK FORMATION AND THE ACTOR-ORIENTED MODEL

The basic actor-oriented model utilizes what Snijders (2001) called the “objective function.” According to Snijders (2005), “the **Objective Function** $f_i(\mathbf{x})$ of actor i is the value attached by this actor to the network configuration \mathbf{x} .” (Snijders 2005: 15). The model posits that actor i participating in a network occasionally evaluates his/her current

network structure and makes decisions about whether any single change in the set of connections would increase the benefits obtained from such network. Given a particular configuration of ties \mathbf{x} , the actor will select the change which gives the greatest increase in his objective function. That is, the anticipated benefit drives the actor to change or maintain his existing ties and that this decision is based on the value attached by him to the network configuration \mathbf{x} . So, when actor i changes his relations, he only strives to change *after* he has evaluated the network configuration that is rewarding only for himself (Snijders 2001: 4). The objective function for actor i can be formally written as

$$f_i(\boldsymbol{\beta}, \mathbf{x}) \quad (1)$$

where $\boldsymbol{\beta}$ is a parameter vector and \mathbf{x} represents a particular configuration of the network of which actor i is a member in the family \mathbf{X} of all possible network configurations.

For the next period of his network structure, the actor makes decisions based on his current choice of probabilities. For example, an actor has at least four options: (1) to create a new link, (2) to renew or maintain an existing link, (3) to withdraw or break an existing link, or (4) not to create a new link. The actor's options are transformed into probabilities calculated according to his current network configuration. He considers each option and for each actor it is only considered one tie at a time. Thus the network changes through a mini-step process. The actor makes his decision in such a way that will maximize his objective function with random error included to account for information limitations.

According to Snijders (2005), the random error has a probability distribution similar to Type I extreme value distribution or Gumbel distribution with mean 0 and scale parameter 1. It is similar to the probability distribution used in a multinomial logit regression (Snijders 2005: 16). The random error indicates the unexplained or residual part of the attraction, that is, the random error of actor i 's attraction to each of the other actors in his network. In this sense, an actor's decision is assumed to maximize the implicit objective function with a random term.

In our particular case, the objective function for a local government to establish institutional ties includes a parameter vector containing both structural properties of the network and the particular attributes of local governments in the network. The structural properties of a network refer to some meaningful aspects of the hypothesized network structures discussed in Chapter 5, and the structures are seen from the viewpoint of actor i . With these in mind, following Snijders (2005: 19), the objective function for actor i is represented as a weighted sum dependent on a parameter $\beta = (\beta_1, \dots, \beta_L)$,

$$f_i(\beta, \mathbf{x}) = \sum_{k=1}^L \beta_k s_{ik}(\mathbf{x}) \quad (2)$$

The weights β_k are statistical parameters indicating the strength of the corresponding effect $s_{ik}(\mathbf{x})$, controlling for all other effects in the model. The $s_{ik}(\mathbf{x})$ effects represent aspects of the hypothesized network structures and are the functions expected to impact the network evolution. We next discuss the network structure effects and lay out the method used to operationalize the hypotheses set in Chapter 5.

6.3.1 Network Effects ($s_{ik}(\mathbf{x})$)

For the possible model components in the objective function to test the credibility-clustering hypothesis and the information-bridging hypothesis (that captures the structural effect on the formation of institutional ties), two main network structure effects are used in this dissertation: the “dense triad effect” and the “betweenness effect.”

Transitive Triad effect: The transitive triad effect refers the number of triplets in the network. In a non-directed matrix, it is defined formally as

$$s_{i1}(x) = \frac{1}{6} \sum_{j,h} x_{ij} x_{jh} x_{hi} \quad (3)$$

The equation captures the preference for being part of cohesive subgroups. A transitive triad effect is most relevant to test the credibility-clustering hypothesis. The effect measures the relative number of ties linking organizations together in a metropolitan area. We hypothesize that, in a restrictive form of interlocal contractual arrangement, the transitive triad effect will be negative, while in the adaptive form of interlocal contractual arrangement, the transitive triad effect will be positive. A large and positive coefficient parameter for the number of transitive triad effect in relation to other structural effects suggests that local governments establishing closely-knit institutional ties with each other share similar behavioral expectations to resolve interlocal cooperation problems.

Betweenness effect: The information-bridging hypothesis is tested using the betweenness effect. It is the preference for being in an intermediary position between unrelated others. That is denoted by,

$$s_{i2}(x) = \sum_h \text{between } (\mathbf{i}; \mathbf{h}; \mathbf{j}) \quad (4)$$

The dominant presence of the betweenness effect suggests that the formation of institutional ties in a metropolitan area emphasizes the importance of coordination and leadership. It measures the degree to which a local government plays important coordination roles in the delivery of collective goods. The presence of such a structural effect also suggests a highly centralized metropolitan governance structure, where power is concentrated in very few organizations. We hypothesize that, in the adaptive form of interlocal contractual arrangement, the betweenness effect will be negative, while in the restrictive form of interlocal contractual arrangement, the betweenness effect will be positive. A positive betweenness effect suggests that local governments prefer to form a centralized network structure to resolve interlocal coordination problems.

6.3.2 Actor's Constant Covariate Effects

While the above structural effects represent two components of network structures' objective functions, the other effects depend on the characteristics of ego's attributes (i.e., constant covariate and changing covariate effects). The homophily effects, expressing a preference for similar characteristics of communities or the form of political institutions compared to dissimilar ones, can also be helpful when interpreting the parameter estimates, i.e., they influence the rate of change of metropolitan governance structure over time. In order to keep things simple, we first present the approach used to capture the actor's constant covariate effect and then incorporate other effects such as the homophily effect.

Constant Covariate Effect: As discussed briefly above, the objective function reflects the network effects (endogenous) and covariate effects (exogenous). The covariates, on which the distribution of this stochastic process depends; these can be actor-dependent denoted by v_i or dyad-dependent, also called "dyadic covariates" (depending on a pair of actors) which is denoted by w_{ij} . Each constant covariate has one value per actor valid for all observation moments. The plausibility of a Markov model is increased by including covariates reflecting relevant characteristics of actors or pairs of actors. Next, we discuss the constant covariate effects and variables used to operationalize the political institutions and local jurisdiction's characteristics in explaining the dynamic process of metropolitan governance.

Council-Manager form of government: A jurisdiction which operates under a council-manager form of government, the most common form of government for small cities in the United States, is designed to operate like a corporation: the City Council acting as the Board of Directors and the City Manager as the Chief Operating Officer. Technically, the council-form of government is based on local government's charter. Depending on the language of the charter, a local government can either be a strong mayor form of government or a strong city manager form of government. We have argued that professional administrators in the council-manager form of government are motivated to enter interlocal agreements as a means of promoting minimum service

standards in metropolitan areas; they generally have longer tenure and a long-range outlook, and are more progressive or innovative in the contracting process. Stein (1990) argues that professional administrators may be motivated to engage in intergovernmental contracting in order to produce efficiency gains that help to establish their track record and pave the way for upward mobility.

To operationalize the political institutions of local jurisdiction that operate under a council-manager form of government, a dummy variable is created, i.e., if a local government is operating under a council-manager form of government, it is code 1; otherwise 0. The data was collected through an interview with Ken Small from the Florida League of Cities. We hypothesize that the form of local government makes a difference and has a positive impact on the dynamic process of institutional ties. The hypothesis is supported if the variable on council-manager form of government is positive and statistically significant.

Level of local government: County-city relations have been argued to be administratively different. Theoretically, cities are apprehensive of county governments because city-county relations are often beset by conflicts over turf and hostile takeover (i.e., either through annexation or service consolidation attempts). This has implications for their institutional ties and thus the formation of metropolitan governance structure. On the other hand, conventional wisdom suggests localities are highly competitive with each other because they face greater obstacles in dividing bargaining surplus from cooperative efforts. Previous studies have proposed that county government should take on a larger role in the provision of public safety for a region, arguing for the benefits of economies of scope and the importance of resource accumulation (Waugh 1994; Rubin & Barbee 1985). Another argument is that county governments are politically and administratively closer to state and federal governments in terms of receiving state resources and technical assistance. They may be more able to act as mediators of inter-municipality policy goals and policy preferences; and they generally have a larger geographical base, greater ability to reap the benefits of economies of scope, and a broader perspective to respond to regional needs. Another argument is that smaller and isolated municipalities lack the

incentive to cooperate with each other in the provision of public safety, and thus the county should fill the role as central coordinator (Waugh 1994).

To operationalize the level of local jurisdiction in the provision of public safety, a dummy variable is created, i.e., if a local government is a county government, it is code 1; otherwise 0. We hypothesize that the county government has a positive effect on the dynamic process of institutional ties. The hypothesis is supported if the variable on county government is positive and statistically significant.

Local communities' characteristics: According to the Institutional Collective Framework, characteristics of communities such as political, economic, and demographic composition of city populations are salient to local governments' interest in, and ability to, negotiate interlocal contractual arrangement (Feiock 2005). Larger governments generally possess greater tax base and access to capital markets as well as a larger population of service recipients. A larger population also influences the anticipated benefits of cooperation for certain types of services because the unit cost of service production is minimized when services are produced to capacity and costs are spread over a large population. In addition, economic, social and political characteristics of community populations shape preferences for public goods and help determine the potential gains and transaction costs of entering into interlocal contractual arrangements.

To analyze whether the characteristics of local communities influence the formation of institutional ties, we rely on the U.S Census 2000 data--local jurisdiction's median household income and the proportion of the white population residing in a jurisdiction are used as proxies to determine whether local jurisdiction preferences influence the formation of institutional ties. Population density is also used to control for the effect of community characteristics on the formation of institutional ties. Conventionally, the median household income is converted to a natural log in order to avoid the problems of skew distribution inherent to income data. The median household income and racial compositions are analyzed as constant covariate. This is because our main interest is on the difference of local jurisdictions in terms of their economic and

socio characteristics across jurisdictions rather than across time. That is, we assume that the differences in economic and socio characteristics across time do not vary significantly across the local jurisdictions and that the changes in local jurisdiction's community economic and socio composition across time is held constant. The variables of interest are on the difference across jurisdictions and their effect on changes of institutional ties.

Homophily Effects: The formation of institutional ties established through restrictive or adaptive forms of contractual arrangements can mitigate the problems of collective action. Because the number of potential partners is limited to a selective few, the decision to form institutional ties is based on the argument that only certain local governments can best perform specific services--selectivity implies opportunity but such opportunity is limited given the resources available.

There are two competing hypotheses as to whom and why local governments may be selective when forming institutional ties. One hypothesis argues that local governments will choose partners that are dissimilar to themselves. Another hypothesis argues that they will form institutional ties with similar others, i.e., institutional ties are more likely to be formed by local governments with similar political institutions such as form of local government or level of government. Institutional ties may also be influenced by local government preferences with similar others in terms of population characteristics, i.e., median household income and proportion whites.

According to Barardo and Scholz (2006), most research on homophily effects have been done by sociologists (Laumann 1966; Marsden 1988; Carley 1991). But in the field of public administration scholars studying forms of local government have contributed significantly to the study of shared norms and professional beliefs among city managers. In the public management literature for example, scholars have suggested that city managers tend to align with each other because they share similar professional values towards the provision of urban services. In the current thinking of institutional collective action theory, there is also a belief that localities with similar income backgrounds are more likely to establish institutional ties with similar others. In order to test these

propositions, we analyze the homophily effects on the formation of institutional ties in the following ways:

SIENA can test the homophily hypothesis that actors tend to create links with others with whom they share similar characteristics. Depending on the nature of the data set, it does this by creating a “covariate-related similarity” measure, which adopts a higher value when the similarity of the attribute between actor i and its counterparts grows:

$$X_{ij} (\text{sim}_{ij}^v - \text{sim}^v) \quad (4)$$

where v is the variable in question, X_{ij} represents the existence or not of the link between i and j , sim_{ij}^v is the similarity in the value of the variable between i and j , and sim^v is the mean of all similarity scores. In this case, a positive value of the coefficient translates as a growing utility for actors creating links with other actors with similar positions. The similarity score sim_{ij}^v is defined as

$$\frac{\Delta - |v_i - v_j|}{\Delta}$$

where $\Delta = \max_{ij} |v_i - v_j|$; or the observed range of the covariate v . This gives the variable a minimum value of 0 when the dissimilarity between both actors ($|v_i - v_j|$) is equal to Δ (the maximum possible distance between two values), and 1 when there is total similarity in their positions.

For the constant covariate effects, a positive parameter implies that actors prefer ties to others with similar preferences (on the variable in question) and thus contributing to the network-autocorrelation of that variable. A negative parameter suggests the actors preferences for dissimilar others will drive the dynamic of institutional ties.

6.3.3 Actor's Changing Covariate Effects

Actor's covariates can change between observation moments, but are assumed to have constant values from one observation moment to the next. According to Snijders et al. (2005), if the observation moments for the network are t_1, t_2, \dots, t_m , then the changing covariates should refer to the and $M - 1$ moments t_1 through t_{m-1} . The last value of the changing covariates is assumed to be valid for the period between moment t_m and moment t_{m+1} . Although an actor's changing covariate, due to local governments' decisions to enter into such arrangement, may change over time, the variable operates differently in network dynamics than a variable such as county government or form of government which is constant over time; the representation of their impact on the network evolution is the same (Pearson, Steglich, & Snijders 2006).

In this study, the actor's changing covariate is the total number of multilateral agreements in the provision of public safety. That is, the number of agreements that involves three or more parties to one agreement within the specified time periods, t_1 to t_3 . An actor's changing covariate represents two separate forms of interlocal contractual arrangement, e.g., restrictive and adaptive contractual arrangements. By including multilateral agreement in each of the forms of interlocal contractual arrangement in each of the time period, both types of agreements are included in the model, and thus giving a complete picture of interlocal cooperation that forms metropolitan governance. That is, to determine the effect of institutional ties influencing the formation of metropolitan governance (that is treated as a set of bilateral agreements as the main institutional arrangements forming metropolitan governance) we can control for the effects of multilateral agreements on its formation.

Theoretically, a positive actor's changing covariate suggests multilateral agreement has a positive effect on the formation of bilateral agreements and thus the dynamic of metropolitan governance and vice versa. Another way to think about the potential effect of changing covariate is as follows: if a parameter estimate for a specific property is large and positive, then the metropolitan governance consists of a set of

configuration of institutional ties with that property having large probabilities. If a property has a negative coefficient, then the set of interconnectedness of institutional ties with that property has small probabilities. So, if the multilateral agreement variable has a positive effect due to its changing nature over time, it would mean that those local governments with a higher number of multilateral agreements attach a higher value on the formation of institutional ties. However, a negative sign on the variable would mean that a local government with a higher number of multilateral agreements attaches less value on the formation of institutional ties. That is, multilateral agreements are a substitute rather than a complement to bilateral agreements.

6.3.4 Estimation Procedure

For an undirected matrix, as described in Snijders (2005), Model 2 is chosen for this analysis. Model 2--“Unilateral Initiative and Reciprocal Confirmation”--implies that an actor takes the initiative and proposes a new tie or dissolves an existing tie. If the actor proposes a new tie, the other actor must confirm, otherwise the tie is not formed. The model captures actor’s decision in a two-steps process, i.e., whether to form a tie or not depends whether actor wants to increase or decrease his/her number of ties (degree); and then the actor decides whether to form a tie or not. The same decision process is assumed for the other actor. The decision to form a tie is based on the current number of ties of the individual actor and is determined by the probabilities of increasing or decreasing the number of ties. According to Boer, Huisman, Snijders, Wichers, and Zeggelink (2006), because the initiative is assumed to be one-sided, the rate function is comparable to the rate function in the directed matrix models.

SIENA estimates the model based on a maximum likelihood estimator using the method of moments, implemented as a continuous-time Markov Chain Monte Carlo simulation (MCMC). During the estimation process, a three-phase stochastic approximation algorithm is used to approximate the solution of the moment equation. The first of these phases calculates likely starting values for the parameters of all the variables included in the model. That is, the parameter vector is held constant at its initial

value in order to estimate the matrix of derivatives, i.e., it is based on the number of changes in each variable observed between 3 observation moments: $t_1 = 1988-1992$, $t_2 = 1993-1997$, $t_3 = 1998-2000$, and $t_4 = 2001-2003$.

Phase two simulates the choice process based on the starting values, compares the resultant simulated network with the observed second period network that we have provided to the program, and adjusts values to reduce differences between the observed and the simulated data. This is done in 4 consecutive subphases (more subphases means a greater precision), where a descendant of the Robbins-Monro algorithm is used to refine the starting values based on these differences. Phase two is important because the estimate (output) indicates whether our data yields good convergence. The estimate reflects the deviation between the observed and the simulated data. It searches for parameters values where the deviations' average is close to zero. A good convergence is indicated by a negative or positive value but close to 0.

The third and last phase uses a number of simulations to determine the frequency distribution of errors in prediction, which then are used to calculate the standard errors for the final parameter values. The program simulates the process 500 times by default. The next section presents the model's estimates.

6.4 RESULTS AND ANALYSIS

6.4.1 Descriptive Statistics

The averages of the variables for each metropolitan area included in the study are summarized in Table 11. The county government is coded as 1, otherwise 0. The proportion of county governments is 9.4%. The number of local governments that have council-manager form of government is about half. The proportion of white race, which is logarithmically transformed, ranges from 2.78 to 8.20, with an average of 5.97 and standard deviation of 0.95. The median household income, which is also logarithmically transformed, ranges from 4.17 to 5.30, with an average of 4.62 and standard deviation of 0.16.

For the restrictive form of contractual arrangement, the maximum number of multilateral agreements ranges from 6 to 15. The number of multilateral agreements at t_2 and t_3 is a skewed distribution with an average of 3.08 and standard deviation of 3.39. This is because only 16% of local governments in the major metropolitan areas have entered into multilateral agreements that consist of two other collaborators for this period. Very few local governments have entered into multilateral agreements that have more than three other collaborators to an agreement.

As for the institutional ties that are established through the adaptive form of interlocal contractual arrangements, the maximum number of local governments that entered into multilateral agreements ranges from 1 to 18. The numbers of multilateral agreement for all periods are also highly skewed to only a few localities. The total number of multilateral agreements established through adaptive contractual arrangements between t_1 and t_2 is only 13%, between t_2 and t_3 is about 8%, and between t_3 and t_4 is about 21%. It appears that the number of adaptive form of multilateral agreements established by local governments in the metropolitan areas is less when compared to the number of restrictive form of multilateral agreement between $t_{1,2}$ and $t_{3,4}$.

Table 11. Descriptive Statistics

	Mean	S.D	Min	Max
<i>Political Institutions:</i>				
County Government	0.10	0.31	0	1
Council-Manager Form of Government	0.52	0.50	0	1
<i>Communities' Characteristics:</i>				
Proportion White (log)	5.97	0.95	2.78	8.20
Median Household Income (log)	4.62	0.16	4.17	5.30
<i>Restrictive Interlocal Contractual Arrangement:</i>				
Multilateral Agreement ($t_{1,2}$)	2.67	2.25	0	6
Multilateral Agreement ($t_{2,3}$)	3.08	3.39	0	15
Multilateral Agreement ($t_{3,4}$)	2.86	1.82	0	6
<i>Adaptive Interlocal Contractual Arrangement:</i>				
Multilateral Agreement ($t_{1,2}$)	0.13	0.34	0	1
Multilateral Agreement ($t_{2,3}$)	0.63	2.09	0	18
Multilateral Agreement ($t_{3,4}$)	0.29	0.62	0	2
No. of Observations = 223				

6.4.2 Descriptive Network Statistics

Table 12 and Table 13 present some descriptive network statistics for network density indicators for institutional ties established through restrictive and adaptive forms of interlocal contractual arrangements.

Table 12 presents the density values, average degree, and number of institutional ties established for the restrictive form of contractual arrangement. There is a gradual increase in the density values, average degree, and number of institutional ties between t_1 and t_4 . For example, the density (i.e., the total number of relationships relative to the total number of possible ties) increases from 0.002 to about 0.006. But these values are low suggesting a sparse network structure. The average degree also shows a gradual increase ranging from 0.46 at t_1 to 1.26 at t_4 . The number of institutional ties being established between t_1 and t_4 also shows a marked increase, i.e., 51, 64, 83, and 140 respectively.

Table 12. Network Density Indicator: Restrictive Form of Interlocal Contractual Arrangements

Network Density Indicator	t_1	t_2	t_3	t_4
Density	0.002	0.003	0.003	0.006
Average Degree	0.46	0.58	0.75	1.26
Number of Ties	51	64	83	140

Table 13. Network Density Indicator: Adaptive Form of Interlocal Contractual Arrangements

Network Density Indicator	t_1	t_2	t_3	t_4
Density	0.002	0.003	0.005	0.007
Average Degree	0.54	0.63	1.11	1.65
Number of Ties	60	70	123	183

For the institutional ties that are established through the adaptive form of interlocal contractual arrangements (Table 13), the descriptive statistics show a gradual increase of density values, average degree, and number of institutional ties between t_1 and t_4 . The density value increases from 0.002 to about 0.007. But these values are low suggesting a sparse network structure. The average degree also shows a gradual increase ranging from 0.54 at t_1 to 1.65 at t_4 . The number of institutional ties being established between t_1 and t_4 also shows a marked increase suggesting a gradual increase in the number of interlocal activities in the four major metropolitan areas.

6.4.3 Convergence Diagnosis

Table 14 presents the information for convergence diagnosis for metropolitan governance that is established through restrictive and adaptive forms of interlocal contractual arrangement. Table 14 summarizes only the analysis of the level of the t-statistics, i.e., the results provide a check on the deviations between the simulated values of the statistics and their observed values. For longitudinal modeling, the convergence is excellent when these t-statistics are less than 0.1 in absolute value; a good convergence is indicated by the t-statistics being less than 0.2; and moderate when they are less than 0.3.

For the restrictive form of interlocal contractual arrangement (in the left column of Table 14), the t-statistics for all the variables have excellent convergence. The proportion of white race, which is logarithmically transformed, has the largest t-statistic of 0.11. But this is not large enough to warrant any concern. The convergence diagnostics for the network structure established by the adaptive contractual arrangements (in the right column of Table 14) also show excellent convergence for the adaptive form of interlocal contractual arrangement. The total number of iterations for both networks structure is 2,497; the parameter estimates are based on 1,997 iterations; and the basic rate parameter estimates as well as convergence diagnostics, covariance, and derivative matrices are based on 500 iterations.

Table 14. Convergence Diagnosis: Restrictive and Adaptive Forms of Interlocal Contractual Arrangements

	Restrictive Form of Contractual Arrangement	Adaptive form of Contractual Arrangement
<i>Network Structure Effects:</i>		
Transitive Triads	-0.07	-0.02
Betweenness Status	-0.01	0.02
<i>Political Institutions Effects:</i>		
County Government	-0.05	0.00
Council-Manager	0.02	0.06
<i>Communities' Characteristics Effects:</i>		
Proportion White (log)	-0.11	-0.02
Median Household Income (log)	-0.01	0.07
<i>Homophily Effects:</i>		
County Government Similarity	0.03	-0.03
Council-Manager Similarity	-0.04	0.09
Proportion White (log) Similarity	0.03	-0.02
Median Household Income (log) Similarity	-0.01	-0.01
Multilateral Agreement	-0.09	0.05

6.4.4 Results on Network Dynamic of Institutional Ties

This section presents the results on the contextual factors that explain the dynamic process of institutional ties and the formation of metropolitan governance. But first, we note that the analysis conducted using SIENA (version 1.7) and the results reported in Table 15 do not contain the degree and density effects of the objective function. That is, the model specification in Model-Type 2 (used to analyze a non-directed matrix) has not performed the estimations of degree and density effects. Consequently, we are not able to estimate or control for the costs of creating and maintaining institutional ties. The interpretations of the analysis and results presented here therefore must be taken with caution.

The following section is organized as follows. In the interpretation of the results, we first consider the network's rate parameters followed by the network structure effects (i.e., transitive triad and betweenness status effects), the political institutions effects, as well as the demographic characteristics of local community effects and the effects of similarities. The analysis for the behavioral dimension of local governments, which is

captured by the number of multilateral agreements within the period of study, is also presented.

Because Table 15 aims to compare the results of two separate network spaces, i.e., institutional ties that are established through restrictive and adaptive forms of contractual arrangements, we first interpret the results for the restrictive form of contractual arrangement followed by the adaptive form of contractual arrangement. Unless indicated otherwise, the reported quantitative results (parameters and utility estimates, t-ratios) are taken either from the left or right column of Table 15. The general discussion of our results and conclusions from the analyses are summarized at the end of this section.

Restrictive form of interlocal contractual arrangement: The dynamic process of metropolitan governance as established through the restrictive form of contractual arrangements is represented by the left column of Table 15. The rate parameters (ρ) specify the frequency by which a local government in the network is in a position to change its status quo on the respective sub-model's dimension. Noting that local governments are not allowed to change anything, the rate parameters may not be viewed as strictly behavioral indicators of change frequency, but as indicators of frequency of reconsideration, which may or may not lead to an actual change (Steglich, Snijders, & West 2006).

When looking at the rate parameters in Table 15, we can see that in period 1, local government on average got 0.732 times the opportunity to change one of its institutional ties (established through the restrictive form of contractual arrangement), 0.922 times the opportunity to change its score during the second period, and 0.919 times the opportunity to change its score during the third period. In the current application, we have not encountered problems with the rate parameters but they are somewhat low, i.e., less than one. Low rate parameters may not be a cause of concern as they indicate that under the given model specification, local governments undergo a reasonable amount of small changes in order to come up with a global dynamic that resembles the observed network. That is, the panel waves are not too broadly spaced such that earlier observations serve

well for explaining later observations. We continue working with the data, the predetermined observation moments, and the specified models to explain the dynamic of metropolitan governance.

Table 15. Parameter Estimates and Standard Errors: Restrictive vs. Adaptive Form of Interlocal Contractual Arrangements

	Restrictive Contractual Arrangement	Adaptive Contractual Arrangement
Rate Parameter (rho) $t_{1,2}$	0.732*** (0.108)	0.798*** (0.094)
Rate Parameter (rho) $t_{2,3}$	0.922*** (0.131)	1.320*** (0.128)
Rate Parameter (rho) $t_{3,4}$	0.919*** (0.124)	0.907*** (0.098)
<i>Network Structure Effects:</i>		
Transitive Triads	0.863*** (0.187)	1.197*** (0.227)
Betweenness Status	-0.185** (0.096)	-0.039 (0.156)
<i>Political Institutions Effects:</i>		
County Government	0.154 (1.134)	-0.775 (1.798)
Council-Manager	0.957*** (0.427)	0.405 (0.437)
<i>Communities' Characteristics Effects:</i>		
Proportion White (log)	1.019*** (0.322)	1.206*** (0.375)
Median Household Income (log)	1.331 (1.102)	0.457 (1.524)
<i>Homophily Effects:</i>		
County Government Similarity	-0.434 (0.330)	-0.294 (0.193)
Council-Manager Similarity	-0.037 (0.103)	0.090 (0.119)
Proportion White (log) Similarity	-1.075* (0.616)	-1.535*** (0.698)
Median Household Income (log) Similarity	-0.005 (0.569)	0.494 (0.518)
Multilateral Agreement	-0.205*** (0.062)	-0.641*** (0.284)

Note: Standard errors within parentheses

Level of significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Table 15 results show, judging by the t-ratios of parameter estimate divided by standard error, that there is strong evidence for the network-closure effect as expressed by a relatively low rate function for the betweenness status effect in relation to the transitive triad effect. The transitive triad effect is statistically significant (e.g., $t = 4.62, p < 0.01$). The fact that the betweenness status effect is also significant (e.g., $t = 1.93, p < 0.5$), but its parameter estimate is negative and relatively weak compared to the transitive triads effect, indicating that what drives the network closure is an extra attraction for actor i to other localities j if they also have established ties with each other. This is discussed further below.

The covariate effects of political institutions represented by the council-manager form of government variable show that a local government with a strong city manager tends to have more preferences for choosing the restrictive form of contractual arrangements than a non council-manager form of government. The influence is both positive and statistically significant (e.g., $t = 2.24, p < 0.01$). However, there is no evidence to support the proposition that county governments have a significant influence on the dynamic of metropolitan government. There is also no evidence to support the proposition that local governments with city managers would prefer to enter into agreements with similar others. As for the political institutions represented by the county government variable, the analysis shows that the causality of effect is correctly predicted by the general hypothesis, i.e., county governments generally do not prefer to establish institutional ties through restrictive forms of contractual arrangement with other county governments. But, the analysis does not yield statistically significant results. Further research is warranted.

The covariate effects of local community's demographic characteristics, i.e., racial composition and median household income, also show mixed results. Racial composition as represented by the proportion of the white population residing in local jurisdiction also influences the formation of metropolitan governance. That is, between a range of 2.78 and 8.20, a local government with a high proportion of white population tends to attach more value to the formation of institutional ties. The influence is both

positive and statistically significant (e.g., $t = 3.17$, $p < 0.01$). But, there are racial composition dissimilarity effects suggesting that when one local government has a relatively large proportion of whites while the other has a relatively low proportion of white population, the dissimilarity has an effect on the probability of the rate of change of institutional ties. The homophily hypothesis based on racial composition is refuted by this finding.

The number of restrictive form of multilateral agreements has a negative effect on the formation of institutional ties. The result suggests that a local government with a higher number of multilateral agreements attach less value on the formation of institutional ties established through restrictive form of bilateral agreements. The parameters affect the probability of local governments to enter into bilateral agreements. The influence of multilateral agreements on the formation of metropolitan governance is negative and statistically significant (e.g., $t = 3.31$, $p < 0.01$). This phenomenon can be regarded as the “crowding out” effect of bilateral agreements by multilateral agreements and is discussed further below. That is, multilateral agreements do not complement bilateral agreements. They are generally used by local governments to substitute bilateral agreements rather than complement them to provide services.

Adaptive form of interlocal contractual arrangement: The dynamic process of metropolitan governance as established through the adaptive form of contractual arrangements is represented by the right column of Table 15. The rate parameters (ρ)--the average number of occasions per time local government gets for applying a small change--is also relatively low, indicating a less active evolution process in the formation of institutional ties. In Table 15, we can see that in period 1, local government on average had 0.798 times the opportunity to change one of its institutional ties (established through the adaptive form of contractual arrangement), 1.320 times the opportunity to change its score during the second period, and 0.907 times the opportunity to change its score during the third period.

The results in the right column of Table 15 show, judging by the t-ratios of parameter estimate divided by standard error, that there is strong evidence for the network-closure effect (e.g., $t = 5.27, p < 0.01$). The betweenness effect is negative but statistically not significant. The results support the general hypothesis that metropolitan governance consisting of an adaptive form of contractual arrangements generally is explained by a dense network structure. That is, when local governments encounter problems with interlocal cooperation, they prefer to form a dense network structure to safeguard their transactions.

The effect of proportion of the white race on the formation of institutional ties is also positive and statistically significant (e.g., $t = 3.22, p < 0.01$) suggesting that local governments with a large proportion of white population generally prefer to form an adaptive form of contractual arrangements. There is also evidence to support the argument that local governments generally prefer to establish institutional ties with local governments that are dissimilar in the adaptive form of contractual arrangements (e.g., $t = 2.19, p < 0.01$). This finding refutes the argument that local governments have a general preference to form institutional ties with similar others based on racial composition. There is no evidence to support the general argument that local governments would prefer to form institutional ties with similar others based either on the characteristics of political institutions or median household income.

The influence of an adaptive form of multilateral agreements on the formation of metropolitan governance is negative and statistically significant (e.g., $t = 2.26, p < 0.01$). The result is consistent with the argument that local governments that have high number of multilateral agreements generally attach less value to the institutional ties established through an adaptive form of contractual arrangements. This result is also consistent with the crowding out effect of multilateral agreements on the bilateral agreements that are established by the restrictive form of contractual arrangements. These results warrant further research on the effect of different forms of institutional arrangements, especially in situations where local governments are presented with multiple forms of institutional arrangements to govern their transactions.

6.5 FURTHER ANALYSIS AND DISCUSSION

6.5.1 Restrictive Form of Contractual Arrangements

Being a central actor is costly: In our empirical results (the left column of Table 15), the formation of institutional ties based on the restrictive form of contractual arrangements has a stronger parameter estimate for the transitive triad effects (0.863) than the betweenness status effect (-0.185). The establishment of a betweenness status renders less benefit than the transitive triad effect. Both of these parameter estimates are statistically significant. The interpretation of the coefficient estimates is somewhat complex because the coefficients must be adjusted to account for the number of other members in the networks, i.e., the number of other actors that are connected to ego and alters. For example, in order for a new link to outweigh the cost of establishing a betweenness status, ego must propose and agree to establish a tie with an isolated alter (and the alter agrees) on condition that ego has already established ties with at least two other organizations that are also linked to each other. Following the calculations presented by Snijders (2001), the objective function (rationale for actor i 's actions) can be tested as follows:

$$f_i(\mathbf{x}) = \sum (0.863 s_{i1}(x) - 0.185 s_{i2}(x))$$

The objective function substantively can be interpreted as follows: In Figure 6, based on two endogenous network variables, in the left corner of the diagram, actor i yields 0.863 utility if it were to establish a tie with actor h that already has a tie with actor j on condition that actor h agrees to the proposed new tie. If actor i were to consider a new tie with an isolated actor, say actor w and actor w agrees, actor i will incur a loss of 0.185. What the analysis shows is that the dynamics of metropolitan governance continue to favor a configuration of institutional ties that displays a transitive triplet. Even if the cost of a link is at a minimum, actor i would still not form a new tie with actor w because acting as the central actor in this network structure is a costly adventure for actor i .

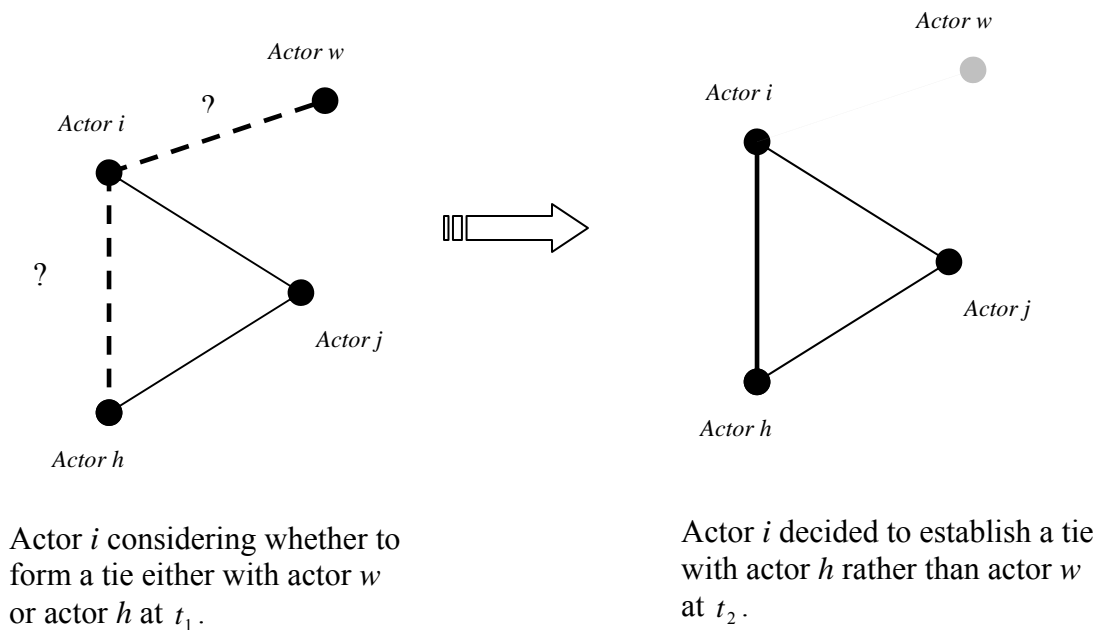


Figure 6. Benefits from Transitive Triads

Being a central actor can yield benefit: Under what condition would actor *i* consider being a central actor? Hypothetically, we can extend the above argument to a scenario where actor *i*, who already has established ties with two other actors, would consider establishing a new tie with actor *w* and therefore acting as a central actor. Figure 7 below illustrates this scenario. Under this scenario, actor *i* will still obtain a net benefit of 0.497 if it were to form a new tie with actor *w*. That is, actor *i* can yield benefits by acting as the central actor linking (1) actor *w* to actor *h*, and (2) actor *w* to actor *j*. The new institutional tie that is established between actor *i* and actor *w* is costing actor *i* (i.e., 0.37) but it is not large enough to not consider a tie with actor *w* since the total benefit is still positive (i.e., 0.497). The objective function (rationale for actor *i*'s actions) can be calculated as follows: $(0.863 \times 1) - (0.185 \times 2) = 0.497$.

Acting as a central actor to any isolates is costly for ego unless ego also belongs to at least one cohesive group, i.e. actor *i* belongs to one transitive triad. An increase in the number of transitive triads would increase the possible number of betweenness statuses for actor *i*. That is, actor *i* can form additional institutional ties with other isolates

(thus making it the central actor) only on condition that it also belongs to an additional cohesive group in the network. For example, if actor *w* and actor *j* also formed a link, the scenario changes and actor *i* would belong to two transitive triad groups. Under this situation, actor *i* could form two additional ties with two other isolates and still yield a net benefit (i.e., $(0.863 \times 2) - (0.185 \times 7) = 0.431$). However, because the preference for transitive triads is stronger than the betweenness status, any additional ties established with these isolates by actor *i* would only lead to closure in the next period.

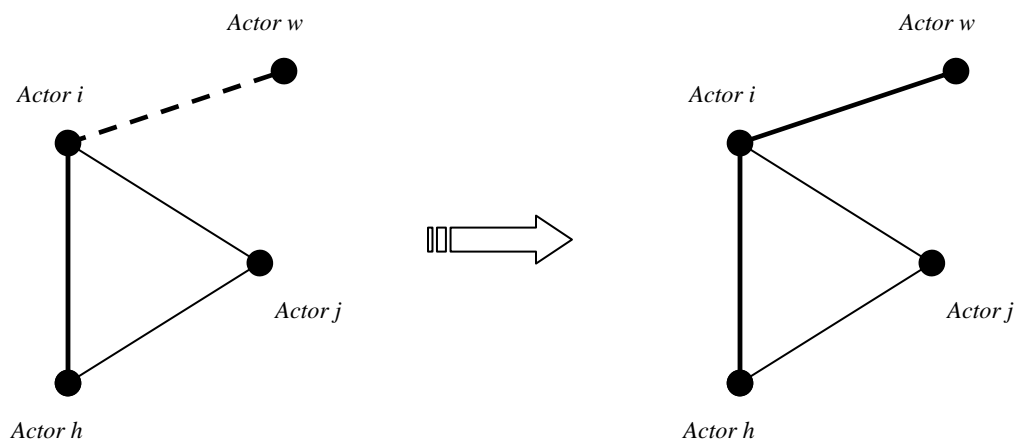


Figure 7. Actor *i* Acts as Central Actor

Following the above analysis, two important points are in order. First, there is a tendency for local government to establish a dense network structure in metropolitan governance that is defined by the restrictive form of interlocal contractual arrangements. Second, in the restrictive form of contractual arrangements, a local government would not take on a central actor role in metropolitan governance. The results seem to suggest that betweenness status is less preferred than a transitive triad in metropolitan governance that is established by the restrictive form of contractual arrangements. In what follows, we first discuss the possible reasons for the tendency of local governments to form a densely-connected configuration of institutional ties.

High commitment escalates future commitment: Why has the formation of metropolitan governance based on the restrictive form of contractual arrangement displayed a stronger parameter estimate in the transitive triad effects than the betweenness status effect? One possible reason is related to the relatively high costs of investments and the costs of exit. According to the theories of institutional collective action, the costs of forming and implementing restrictive interlocal contractual arrangements may be high initially. That is, although the startup investment for a restrictive arrangement may be high, the transaction costs of implementing and enforcing a credible commitment may be lower in the long run since they are also part of investments in the form of dedicated assets and organizational structures. Perhaps, it is precisely these initial investments that make exit costly and thus promote the continuation of institutional ties that eventually help shape the highly-clustered network structure (in the restrictive form of interlocal contractual arrangements). Once institutional ties are established, to exit from them is difficult unless localities are willing to incur substantial legal expenses and, in some cases, accomplish side monetary transfers to compensate for losses faced by the other party. The main point here is that although initial investment on institutional ties can be excessive, once established they can lead to a self-reinforcing process where high commitment in turn further escalates future commitment.

Another possible explanation is related to the accumulation of resources. That is, a network structure established through a restrictive form of interlocal contractual arrangement exhibits a tendency to accumulate resources rather than coordinating resources. What type of resources? In Chapter 4, we have shown that the characteristics of goods and services that display high asset specificity generally led local governments to form a restrictive form of interlocal contractual arrangement. That is, one reason for a highly-clustered network structure is the ways in which metropolitan governance formed by institutional ties evolve through the cumulative processes that emphasize the importance for local governments to accumulate physical and highly-specific assets. The continuation or maintenance of institutional ties for such resources becomes necessary (as they are embedded in a changing community of multiplex relations spawned by multiple organizational affiliations). This line of argument also suggests the importance for local

governments to maintain clustered-ties in order to free-ride on other localities' much needed resources, especially if unanticipated future events and the establishment of procedures to respond to such events engender major challenges for the implementation of their contractual obligations.

Local governments would not act as central actors: The second point is that there is a possibility that local governments would not act as central actors in the provision of public safety. This is an important point because the general hypothesis of information-bridging is not supported by the empirical results. That is, in an action arena that is based on a restrictive form of contractual arrangement, local governments would not prefer to coordinate their activities through a central actor to resolve the problems of multiple preference. One explanation is that localities are motivated to reduce transaction costs associated with goods and services with high asset specificity, and this requires less of a coordination effort but more of an accumulation effort. In this situation, local governments do not need to act as central actors in coordinating other localities' activities. As has been shown in the above analysis, the role of central actors is generally not preferred. That is, local governments in the network eventually prefer to establish close-knit ties with those that are directly connected to each member in a cohesive group.

Another possible explanation for the inconsistency of the results is related to the form of contractual arrangements being studied. That is, the network structure being examined is generally related to "contract network" as opposed to "contact network," which is generally associated with the information-bridging hypothesis. Based on this logic, the analysis could be explained better by extending the transaction costs approach to take into account the argument that restrictive contracting is more risk-prone than an adaptive form of contracting and that such contractual arrangements are more in need of commitments rather than transmission of information or resources. We will elaborate this argument in the following section.

6.5.2 Adaptive Form of Interlocal Contractual Arrangements

Theoretically, we have argued that if outcomes of particular services that are difficult to measure (such as emergency management or disaster relief) and present a greater risk of opportunistic behaviors, a web of institutional ties that displays tightly or highly clustered ties can be observed. According to the credibility-clustering hypothesis, in such services, the adaptive form of contractual arrangements presents a greater risk of free-rider problems. In order to constrain such behaviors and minimize cooperation problems, monitoring and enforcement can be observed when local governments form institutional ties that are highly-clustered.

In the empirical findings (on the left column of Table 15), the formation of institutional ties established through the adaptive form of contractual arrangements shows a positive transitive triad effect and is statistically significant. The result suggests that a dense network structure is advantageous in reducing the transaction costs of enforcing and monitoring the social obligations because any actions taken or not taken by a locality could be made public. Other localities whose common concerns and shared beliefs can provide threats of collective sanction will enhance the credibility of punishments being imposed. The objective function, from the perspective of actor i can be tested as follows:

$$f_i(\mathbf{x}) = \sum 1.197 s_{i1}(x)$$

Based on the objective function, the formation of metropolitan governance established through an adaptive form of contractual arrangement substantively can be explained by a highly clustered network structure. There are several reasons for this phenomenon:

First, a set of strong institutional ties implies expectations that the other local government (alter) will avoid a strategy option that is attractive to itself and seriously hurt its collaborative partner's (ego) interests. Second, a highly clustered network has the ability to impose constraints on localities that attempt to shirk or act opportunistically,

and thus ensure the stability of provision of services. Third, strong institutional ties can alleviate the difficulties associated with negotiating a contractual arrangement and can also be equated with some degree of reciprocity and trust in implementing the agreed set of contractual arrangements. Fourth, a highly clustered network provides extensive monitoring mechanisms, facilitates mutual reciprocity and trust, and ensures that members in the network play by the rules of the game. That is, a highly-clustered network structure facilitates parties to the agreement to carry out each side of the agreement. In this sense, strong institutional ties also create conditions under which reliable information (such as important resources) about defectors are accessible. Fifth, for densely interconnected institutional ties, the benefits of collaborative efforts flow to individual units of local government by providing them with access to other potential credible partners and thus increasing available resources and expertise. In this sense, a dense network structure increases the “spirit of cooperation” among its members.

Although, in the adaptive form contractual arrangements, local governments generally prefer to establish ties with those that are in their cohesive group, the empirical evidence also suggests that, when local governments act as central actors, they incur neutral payoffs. Why would this be the case? There are several reasons for this. First, when local governments relied more on an adaptive form of contractual arrangements, they have done so generally in order to safeguard transactions in service areas that have high service measurability problems. Acting as central actors, although only providing neutral payoffs, local governments initiate the selection process between isolates and one of the members of a cohesive group and such acts can be taken as a signal that the isolate is credible and able to fulfill its contractual obligations.

The notion of “signaling” is important on several grounds: (1) from an ego’s perspective in a situation in which there is persistent identity and repeated interaction, ego can punish the isolate through the social mechanism of reputation. Here, the information gleaned through experience by an ego can spread to others in the cohesive group; (2) ego’s contractual arrangement can also ensure cooperative behavior by putting the newcomer’s reputation on the line with all other possible transactions. If the

newcomer fails (or is deceptive), then it pays a cost in terms of the difficulty of finding future interaction partners, etc.; (3) from alter's perspective, by establishing a contractual arrangement with ego, it can display connections as a way of signaling its willingness to risk its reputation. As Burt (1992) has pointed out, reputation is a powerful force in groups with dense affiliations. This can be due to repeated interactions, where alter gathers a reputation around its identity that, if good, is quite valuable and it can benefit from continuing to act in ways that enhance that reputation; (4) from the perspective of the cohesive group, all can yield a higher collective benefit as a group, if ego acting as central actor incurs the initial cost of establishing a new tie with the newcomer. The cost of establishing new ties with newcomers is gradually reduced as more new members are recruited into the cohesive group. Once a new partner enters into an agreement with one of the members of a cohesive group, it quickly becomes part of the cohesive group as others in the group embrace it as part of a clustered group, producing a greater payoff to the group.

Alternative explanation: The empirical results are somewhat puzzling. How can we fit the general propositions (i.e., based on the information-bridging hypothesis and credible-clustering hypothesis) to get better contracts with what a city needs to get out of the contracts, and why would it be different for an and a restrictive form of contractual arrangements? The empirical results seem partially to support the general propositions. Instead of using the information-bridging hypothesis to explain the empirical results, probably it would make more sense to conceptualize about what cities would seek in emergency cases. For example, the primary concern of local governments when establishing a basis for obtaining assistance from other cities in the case of an emergency is to establish contracts with cities whose services are less likely to be in demand by others when some emergency strikes. Such an instance can be regarded as a way that contracts can provide local governments with a more independent risk-sharing ability. That is, local governments seek contracts with other localities that have independence of risk in order to minimize their own risk in case of an emergency. Here, from independence in risk perspective, a locality would seek contractual arrangements with cities having no ties with the cities that another city contracts with.

The independent risk-sharing perspective seems to make sense when credibility is an issue. For example, in adaptive contractual arrangements, where contractual partners are permitted but not obligated to provide services, sharing risk makes it more likely that the service could be provided, but a dense network structure (or closure) would make it more likely that the service would actually be provided if it could be. From the independent risk-sharing perspective, the empirical results suggesting that local governments generally prefer to establish institutional ties that are densely-connected (but betweenness is not) could mean that there are conflicting demands (e.g., who would render the service upon request) in the case of adaptive contractual arrangements, and that localities apparently give more weight to credibility needs than independent risk-sharing. On the other hand, the negative coefficient for betweenness in the restrictive form of contractual arrangements would indicate that independent risk-sharing is not important since localities require services to be given routinely regardless of other demands on the contracting city. The negative coefficient in the restrictive form of contractual arrangements emphasizes the importance of a triad coefficient, which suggests that a city prefers to seek contractual arrangements with friends of friends in restrictive contracts.

6.5.3 The Crowding-out Effects

According to the empirical results, the number of the restrictive form of multilateral agreements has a negative effect on the formation of institutional ties. The result suggests that a local government with a higher number of multilateral agreements attaches less value to the formation of bilateral institutional ties. This phenomenon is consistent in both forms of contractual arrangements, i.e., a governance structure being established through restrictive and adaptive forms of bilateral agreements. The parameters affect the probability of local governments entering into bilateral agreements in the sense that the influence of multilateral agreements on the formation of metropolitan governance is negative and statistically significant. This phenomenon can be regarded as the “crowding out” effect of bilateral agreements by multilateral agreements.

The crowding out hypothesis argues that it is possible to predict the behavior of local governments and their interactions with each other based on the form of contractual arrangements chosen to govern their transactions. Since the local governments can change their preferences in light of their experience, their choice of contractual arrangement (behavior) can also change over time. However, based on the general hypothesis developed in this research, there is a tradeoff between the forms of contractual arrangements chosen to govern their transactions. That is, the more a certain type of institutional arrangement is used to govern transactions, the less likely that an alternative form of arrangement would be considered.

Within the context of this research, the logic behind the hypothesis is as follows: Local governments often used contractual arrangements to govern their transactions by either establishing bilateral or multilateral contractual arrangements. The problem occurs when local government excessive used of one form of arrangement “crowds out” other forms of contractual arrangement. For example, as local governments increased the usage of multilateral agreements, they would increase their activities to monitor and enforce the multilateral agreements and thus crowding out the monitoring and enforcement activities of other contractual arrangements such as the bilateral agreements. The problem is that as local governments use more of multilateral agreement to govern their transactions (and establish institutional ties), there comes a point when they can no longer afford to monitor and enforce other forms of contractual arrangements. This phenomenon is consistent in both governance structures analyzed in this research.

6.5.4 Community Characteristics and the Dynamic of Institutional Ties

The effect of local government’s population composition on the dynamic of institutional ties: The covariate effects of a local community’s demographic characteristics represented by the racial composition of white population residing in local jurisdictions influences the establishment of institution ties and thus the dynamic of metropolitan governance. For example, the empirical results for a restrictive form of contractual arrangements suggest that a local government with a high proportion of white

population tends to attach more value to the formation of institutional ties. The result is also consistent for the dynamic of metropolitan governance that is established through an adaptive form of contractual arrangements. The influence of racial composition (expressed as the proportion of white population logarithmically transformed) on the dynamic of metropolitan governance is both positive and statistically significant.

According to the institutional collective action framework, the degree to which the population of communities is homogenous determines the potential gains and transaction costs of entering into interlocal contractual arrangement. There are several reasons for this. First, homogeneity of local government populations could promote a less adversarial politics (Carr & LeRoux 2005; Schneider 1987) and would enable the community to speak out as one voice. Second, homogeneity of local government populations allow public officials to make decisions on behalf of their constituents with less likelihood of opposition. Oakerson (2004) for example argues that local officials are more likely to enter into interlocal contractual arrangements with other localities when their local jurisdictions are homogenous rather than heterogeneous. This is because a city manager or mayor, in touch with the preferences of a homogeneous community, would be less likely to encounter public opposition (Carr & LeRoux 2005). Third, homogeneity of local government populations signals shared values and less opposition, and as a result, are more likely to enter into interlocal contractual arrangements compared to localities with mixed racial composition.

The arguments are constrained on several grounds, however. Our analysis only shows evidence for a single variable of community characteristics which is the composition of white population residing in a local jurisdiction. Other community characteristics such as population size and proportion of elderly populations in a jurisdiction, which could also have an impact on the likelihood of service-sharing arrangements, have not been examined. Nor has there been evidence to reject the argument that the median household income could also have an impact on the formation of interlocal contractual arrangements. Further research on the impact of local community characteristics is warranted.

The impact of homophily effect on the dynamic of institutional ties: The empirical findings refute the homophily hypothesis based on racial composition. For example, the racial composition similarity effects are both negative in governance structures established through the restrictive and adaptive forms of contractual arrangement. The effects are also statistically significant. The results suggest that when one local government has a relatively large proportion of whites while the other has a relatively low proportion of white population, the dissimilarity of local government population characteristic has an effect on the probability of the rate of change of institutional ties.

The theoretical argument predicts that when local governments have similar population characteristics, they generally prefer to enter into such contractual arrangements with each other rather than with those that are dissimilar to themselves. The argument assumes that such contractual arrangements are efficient to the extent that localities with similar community characteristics can facilitate the efficient transmission of tacit knowledge in the provision of public safety, make coordination easier, and avoid potential conflict. The contrasting result (from the theoretical argument) may reflect the mutual support provided by localities in the area of public safety regardless of community characteristics. That is, local governments would enter into interlocal contractual arrangement to provide services in the area of collective goods without regard to local governments' similarity in terms of their racial composition. In fact, the evidence seems to suggest that localities with a high proportion of white population generally would enter into interlocal contractual arrangements with those localities with less white population and vice versa.

There is also no evidence to support the homophily argument that local governments with similar political institutions would enter into interlocal agreements. That is, our empirical results show no statistical significance of the county similarity effect and the council-manager similarity effect on the formation of metropolitan governance. Further research is required to confirm or refute the homophily hypothesis.

6.5.5 Council-Manager Form of Government and the Dynamic of Institutional Ties

The political institutions variable represented by the Council-Manager form of Government has an important role to play in the formation of institutional ties. The empirical results support the general argument that the council-manager form of government has a positive influence on the dynamic development of metropolitan governance established through the restrictive form of contractual arrangements. However, there is no evidence regarding its influence on the formation of metropolitan governance that is established through the adaptive form of contractual arrangements.

The institutional collective action framework predicts that appointed professional administrators (e.g., city managers) are often driven by “low-power” administrative incentives rather than “high-power” political incentives. That is, because of low-power incentives, they prefer to enter into a restrictive form of contractual arrangements because one of their many administrative responsibilities requires them to identify opportunities to produce or provide services at minimal costs rather than seek political rents. These opportunities, when translated to an agreement, often involve transfer of rights and responsibilities from one jurisdiction to another. Professional administrators in a council-manager form of local government generally have more of a role to play in establishing restrictive forms of contractual arrangements because decisions, when approved by city commissioners and translated into local ordinances, do not require the approval of local residents. This is particularly true if a city’s charter does not allow petitions or requests for a referendum on an ordinance driven by budget issues. In this sense, local governments dominated by professional administrators are often active in institutional arrangements involving restrictive forms of contractual arrangement.

Second, their dealings with other jurisdictions generally include services that have a high asset specificity investment such as vehicles or equipment maintenance. Although such narrow purpose arrangements affecting multiple city and county governments are less controversial, they do require thorough consideration in the planning and implementation of an agreement. They necessitate that professional administrators

develop a clear set of working rules to secure and safeguard interlocal transactions. Despite some transaction costs associated with negotiating and implementing the agreement, the costs may be outweighed by the benefits when there is a need to allocate additional revenue and/or spread existing costs over a large population. The positive effect of the council-manager form of government on the formation of metropolitan governance (established through the restrictive form of contractual arrangements) seems to support this general argument.

6.6 CONCLUSION

In order to examine the dynamic process of institutional ties, and indirectly the formation of metropolitan governance structures in the provision of public safety, we have selected four major metropolitan areas in Florida: Miami-Fort Lauderdale-West Palm Beach MSA, Tampa-St Petersburg-Clearwater MSA, Orlando-Kissimmee MSA, and Duval-Jacksonville MSA. They are the largest and the most densely populated metropolitan areas in Florida. Using the method proposed by Snijder and his associates and the SIENA software, we tested the credible-clustering and information-bridging hypotheses proposed by Scholz, Feiock, and Ahn (2005) that certain network structures influence the formation of metropolitan governance in response to particular types of collective action problems. That is, when there are problems of interlocal cooperation, localities tend to develop a dense network structure that could enhance the credible commitment of each partner to fulfill the terms of the contractual arrangement. When there are problems with interlocal coordination, localities generally prefer to develop a sparse network structure which is important for coordination activities.

In the metropolitan areas we studied, the empirical results suggest that localities generally prefer to form a set of densely connected institutional ties in the provision of public safety presumably for their ability to enforce credible commitment in the implementation of contractual activities. There is no evidence to support the information-bridging hypothesis, that a sparse network structure exists in metropolitan governance structures established through a set of institutional ties (based on the restrictive form of

contractual arrangement), and that the role of a central actor coordinating multiple jurisdiction' contractual activities in such a governance structure is generally short-lived because of negative payoffs. However, there is evidence to support the general predictions made by the credible-clustering hypothesis regarding the formation of metropolitan governance structures. For example, when outcomes of goods and services are difficult to measure requiring local governments to establish institutional ties based on the adaptive form of contractual arrangements, the empirical evidence supports the prediction of the hypothesis that such metropolitan governance structures would be influenced by a densely network structure.

Our analysis also shows the importance of multilateral agreements in influencing the dynamic process of institutional ties. That is, the transaction costs of multilateral agreement can lead to a crowding-out of bilateral agreements. In addition, our empirical results also support the theoretical arguments that political institutions and local community' characteristics have an impact on the dynamic development of metropolitan governance. In particular, for the metropolitan governance structure that is established through the restrictive form of contractual arrangements, the council-manager form of government has a positive effect on its formation suggesting the preference of appointed local officials to establish institutional ties using restrictive contractual arrangements. As for the characteristics of local government populations, there is also evidence to support the argument that local governments with homogeneous populations have an effect on the establishment of institutional ties. There is no evidence to support the presence of homophily effects on the dynamic process of metropolitan governance, however. On the contrary, the empirical results suggest that the dynamic process is generally influenced by the dissimilarity effects of racial composition rather than the similarity effects.

CHAPTER 7

INSTITUTIONAL TIES, INTERLOCAL CONTRACTUAL ARRANGEMENTS, AND THE DYNAMIC OF METROPOLITAN GOVERNANCE: THEORETICAL IMPLICATIONS AND SOME PRACTICAL SOLUTIONS TO INTERLOCAL COOPERATION

The analysis and results presented in this dissertation are important in light of the current debates over the formation of metropolitan governance. We set ourselves a challenge to understand interlocal cooperation and the formation of metropolitan governance. That is, we examined the attributes of local government and behavior using network analysis to explain the emergence of metropolitan governance. We were particularly interested in understanding the mechanism that connects the “*what*” with the “*how*” and “*why*” to find an explanation of metropolitan governance’s maintenance and stability or its development. The main focus of the “*what*” question has been on the different forms of interlocal contractual arrangements that directly influence the formation of institutional ties. The “*how*” question is illustrated using network analysis, i.e., the formation of institutional ties at the level of network structure, influencing the formation of metropolitan governance. The “*why*” question is explored using the institutional collective action framework. It explains the formation of institutional ties at the dyadic level (Chapter 3) and the macro-level (Chapter 5) in terms of the contextual factors such as network structure effects, constant covariate effects (i.e., institutional, economic, and demographic characteristics of local communities) and changing covariate effects (i.e., the number of multilateral agreements established by localities).

In this concluding chapter, we reemphasize the importance of network analysis in studying interlocal cooperation and thus the formation of metropolitan governance. We summarize the empirical results presented in the previous chapters, and then discuss the

implications of our research on the theoretical development of institutional collective action framework, examine the limitations, and outline future directions for research.

7.1 SUMMARY OF EMPIRICAL FINDINGS

We have classified interlocal contractual arrangements into two general forms: restrictive and adaptive contractual arrangements. A contractual arrangement is restrictive if the specific set of rules governing that transaction are specified clearly and the outcomes of the transactions are predictable and included in the contract. A contractual arrangement is restrictive to the extent that all negotiating parties can come to a consensus on the effectiveness of an agreement that governs their transactions. To be effective, the arrangement must be backed up by specific state statutes that are feasible to defend (in an economic and legal sense) in the legal system. On the other hand, an interlocal contractual arrangement is adaptive if local governments have the ability to agree upon a set of rules that allows them to perform services that are nonobligatory, reciprocal, and yet easily terminated without legal consequences.

The first part of this research explores factors that explain local governments' institutional choice. The empirical results show that vertical intergovernmental relations involving municipal and county governments generally employed a restrictive rather than adaptive form of interlocal contracting. The analysis also shows that the characteristics of goods and services as the product of transaction costs influenced institutional choice. Functional service area and the number of collaborators involved also play an important role in explaining a local government's decisions to enter into particular forms of contractual arrangements. These findings are important for several reasons.

First, the results allowed us to extend the transaction cost theory that the adaptive form of contractual arrangements, which is generally established to govern institutional ties in outcomes that are difficult to measure, tends to display tightly or highly clustered ties to maximize joint returns. That is to say that the outcomes of particular services that are difficult to measure such as emergency management or disaster relief presents a greater risk of opportunistic behaviors by those who do not meet the standard

requirements spelled out in their contractual arrangements. In order to constrain such behaviors and minimize cooperation problems, monitoring and enforcement can be observed through a web of institutional ties that displays tightly or highly clustered ties. On the other hand, when local governments used more restrictive form of contractual arrangement, they have generally done so in order to safeguard transactions in service areas that have high asset specificity problems, and we anticipate a service delivery system that displays sparse or less densely connected institutional ties to emerge.

The second part analyzes the dynamic development of metropolitan governance between 1988 and 2003 in Florida's four major metropolitan areas using a network specialized software called SIENA. Designed to test two general propositions (i.e., the credibility-clustering and the information bridging hypotheses), the analysis found that localities generally prefer to form a set of densely connected institutional ties in the provision of public safety. When outcomes of goods and services are difficult to measure and thus requiring local governments to establish institutional ties based on the adaptive contractual arrangements, the empirical evidence supports the prediction of the credibility-clustering hypothesis. On the other hand, there is no evidence to support the information-bridging hypothesis that local governments entering into restrictive form of contractual arrangements, which generally involved transactions with high asset specificity, prefer to have central actors to coordinate region-wide activities. That is, local governments would not prefer to act as central actor and coordinate multiple jurisdictions' preferences in the provision of public safety. Other findings include the importance of multilateral agreements in influencing the dynamic process of institutional ties. That is, the transaction costs of multilateral agreement can lead to a crowding-out of bilateral agreements. The political institutions and local community characteristics also have an impact on the dynamic development of metropolitan governance.

This research contributed to the theoretical development in the following ways: First, it has examined the contextual factors that explain the formation of metropolitan governance through multilevel analysis such that the effects of network structures are assessed in conjunction with the characteristics of local communities. The longitudinal

models employ multilevel analysis by considering (1) local government's interactions beyond dyadic relations, (2) their covariate similarity in terms of political and institutional characteristics as well as economic and social characteristics, and (3) the endogenous factors explaining the opportunity for metropolitan governance formation in terms of network structures such as the number of dense triplets and betweenness. Second, this research has also examined the external or exogenous factors such as the number of multilateral agreements, the characteristics of institutional factors and attributes of local communities in influencing the opportunity of local governments forming institutional ties at the dyadic level controlling for distance at the metropolitan areas. Finally, the research has examined the formation of metropolitan governance by making predictions about its emergence in terms of two seemingly different network spaces for solving particular types of institutional collective action problems: interlocal cooperation and coordination problems.

By examining the formation of metropolitan governance in terms of interlocal contractual arrangements, this research also makes a contribution to the study of service deliveries in urban areas. For example, the traditional Regionalists have often argued for a single-tier or two-tier consolidated government to resolve metropolitan problems (Savitch & Vogel 1996; Dodge 1996). Others have argued for political fragmentation as a means for local governments to delivery urban services efficiently (Feiock 2004). Consequently, the debate over the best approach to deliver urban services has generally centered on whether metropolitan governance structure should be based upon a consolidated government or fragmented governments. Few of these studies actually acknowledge the importance of interlocal contractual arrangements as one of many institutional arrangements used by local governments to govern their transactions in the delivery of urban services across multiple jurisdictions. This research attempts to fill this theoretical gap in the study of service delivery structure in urban areas.

7.2 RELEVANCE OF NETWORK ANALYSIS

Network analysis is an important tool in understanding metropolitan governance. It is based on the assumption of the importance of relationships among interacting units

of government rather than their physical position or local attributes such as composition of race and economic or political class. It emphasizes the importance of relational concepts or processes, where relations are defined by linkages or institutional ties among multiple units of government. These relations are a fundamental component of network theories where actors and their actions are viewed as interdependent rather than independent, autonomous units. The relational ties or linkages between actors are assumed to channel the flow of resources, i.e., material or non-material, and represent a structural environment that can provide opportunities for or constrain individual actions.

At the actor level of analysis, Lawrence O'Toole (1997) argues for the need to take social networks seriously in the field of public administration pointing out that the structure of service delivery need not involve only local governments but also other sectors. He posits that all are interdependent when dealing with the wicked problems of administration. Network analysis projects an image of interlocal cooperation among a web of local actors who share similar concerns. Following this image, public administrators are assumed to handle interdependencies across organizations. They link their efforts with other local governments, nonprofit organizations, and private companies. They form relationships with administrators in other sectors more extensively and intimately than ever before because they need the other's resources to achieve their goals.

At the metropolitan level, some scholars have portrayed networks as metropolitan governance, i.e., as being characterized by collaborative management and networked organizations, which helps describe the nature and magnitude of interlocal cooperation (Henry et al. 2005; Agranoff & McGuire 2001). Viewing metropolitan governance in this light, we are witnessing governance structure that adapts to circumstances that are not merely institutional but both institutional and networked thus extending the analytic focus to intersectoral and intergovernmental relationships (Henry 2004). Thurmaier and Wood (2002, 2004) described the patterns of metro governance as a "picket-fence regionalism" in which the interactions between local governments are an "intricate maze or spider web of horizontal and vertical interlocal agreements and social networks." The relevance of these studies suggests the "age of the network" has arrived, supplementing

previous work that relied on hierarchical and market-based governance structures and suggesting that the classic assumptions of formal hierarchy--as a standard nostrum of public administration--probably do not apply adequately to a modern service delivery system (Lipnack & Stamps 1994; O'Toole 1997).

Although scholars in the public administration field have reiterated the conception of governance as networks, they generally lack explanatory mechanisms of their existence (Berry et al. 2005). This dissertation makes contributions by filling these theoretical gaps using an institutional collective action framework. But, before discussing the general contributions of this research to the literature, I want to differentiate our current conception of metropolitan governance with those of previous studies.

First, the previous studies generally assume interdependency in terms of interorganizational dependency. That is, the general goal of multiple organizations working collectively to achieve a common objective depends upon each other's tangible and intangible resources. The theories of institutional collective action argue that interdependency could also encompass institutional environments such as the contexts in which the macro-level structure of metropolitan governance is established to resolve particular collective action problems. This has led us to explore the importance of state statutes in influencing local governments' actions or inactions. In Chapter 4, for example, we argued that state statutes in Florida had provided a range of institutional arrangements for local governments to work together. The arrangements varied from interlocal service agreements to mutual aid agreements. This is important because multiple types of interlocal contractual arrangements are also about institutional choice. As has been argued and empirically tested in Chapter 4, there is evidence to support that the different forms of contractual arrangements adopted will depend upon the composition of parties involved in the agreement, the nature of goods and services, the number of participants, and the nature of local government's functional service areas.

Second, when previous studies talk about networks, they are generally referring to social networks formed by personnel within an organization with other personnel in other

organizations. Such interactions are often explicitly equated with informal interactions that are usually temporary in nature. The theories of institutional collective action view networks slightly differently. The formation of networks or a configuration of institutional ties (and thus metropolitan governance) is more structural in the sense that dyadic institutional ties are formed by local governments through contractual arrangements in order to safeguard their transactions. The contractual arrangements are important for building institutional ties because they encourage formal and informal interactions that are crucial for present and future interlocal cooperation. We also believe it is important to think about local governments' interactions as institutional ties because they reflect communication and social relations that are embedded in a web of formal and informal interactions. We introduced the notion that interlocal contractual arrangements act as a vehicle for local governments to form institutional ties and we seek to understand such arrangements in terms of network structures. We also seek to understand the nature of these vast configurations of institutional ties and the processes involved to create and hold them together. Hence, indirectly this allows us to examine the different forms of metropolitan governance structure to resolve particular collective action problems.

Third, some studies argue that interorganizational interdependency implies that no one organization has a primary role to play in the formation of metropolitan governance, i.e., all are equal in the process of governing. On the contrary, the theories of collective action posit that local governments should play a major role in the developmental process of metropolitan governance because local governments form institutional ties and develop relationships embedded in local government interactions that can either encourage local governments to cooperate or compete, or both. Although there are costs involved in the formation of institutional ties, local governments are motivated to enter into contractual arrangements because certain institutional arrangements can provide them with certain selective benefits. Here, despite anticipated costs, some localities motivated by selective benefits are more entrepreneurial in bridging information through institutional ties and are more able to accumulate resources than others and thus are more likely to benefit from their position in a network structure more than others. Selective

benefits are also crucial if local governments are to collectively work together to achieve their common goals.

7.2.1 Contributions to Theoretical Development

The basic conception of what metropolitan governance might mean and how it emerges and functions can lead to practical applications and theoretical implications for applied research. In this study, we regard metropolitan governance as a network of interdependent relationships between multiple actors facilitating and providing the building block or relational “glue” that binds institutionally-fragmented localities. This dissertation also argues that there are multiple ways to examine what metropolitan governance might mean, i.e., different forms of interlocal contractual arrangements lead to different structures of metropolitan governance. This is elaborated further below. Suffice to mention that multiple types of contractual arrangements illustrate institutional choice available and the action arena in which local governments resolve their collective action problems. We believe in institutional choice, where local governments themselves can craft and choose the types of institutional arrangements in order to best resolve their dilemmas. Their decisions whether to form, maintain, or dissolve institutional ties are based upon the institutional and contextual factors that influence their transactions.

In what follows, the section discusses our main contributions to the theoretical development of metropolitan governance and practical insights to practitioners in the field of public administration.

What contributions have theories of institutional collection action made to our understanding of metropolitan governance? Theoretically, metropolitan governance--as a set of rules established by actors to govern their transactions through a range of interlocal contractual arrangements--is an important area of study. Metropolitan governance is vital a mechanism for pursuing collective goals in modern metropolitan areas. It emerged and is shaped by actors that are concerned to maximize their general welfare subject to future uncertainties. It is an institutional process but carries with it institutional goals either in a

form of collective benefits or selective benefits. Within a broader theoretical framework, our work on the structure of metropolitan governance as a process of intentional design differs from the previous theoretical development in the sense that we regard metropolitan governance as being shaped by a simultaneous order of those designed rules. For example, the major classical theoretical framework, i.e., from the neo-classical economic traditions and the Marxist approach to metropolitan political structure, have often examined local governments as intentionally pursuing their welfare through competitive means. We move the arguments a step further by viewing not only the structure of metropolitan governance as a process in the competitive arena, but also a cooperative process established through certain forms of interlocal contractual arrangements.

This study has also moved the field of public administration forward by examining local governments' interactions beyond their dyadic relations. For example, previous studies have viewed interlocal relations in terms of dyadic relations, while some describe them as a form of network relations. Marxist tradition describes a dyadic relationship between two major social classes as a fragmented metropolitan system. The neo-classical tradition advocates for a competitive behavior in dyadic relations, while the Regionalist looks at dyadic relations as ad hoc, temporary, and insignificant to the working relations of local governments. Although dyadic relations, as a basic form of interlocal relations, are important for our understanding, previous studies generally lack the insight to think outside a policy prescription that perhaps local government's actions or inactions are also dependent upon interactions with a third party, that is, indirectly linked to them. Such indirect interactions provide a signal to the behavior of those with whom they are directly linked.

Furthermore, this is the only study that empirically tests the contextual factors explaining the formation of metropolitan governance using interlocal contractual arrangements. It does this by using longitudinal data and, as such provides insights into the dynamic process of metropolitan governance. That is to say, different forms of contractual arrangements lead to different metropolitan governance structures to resolve

particular institutional collective action problems. For example, a restrictive or adaptive form of contractual arrangement is one of many ways to examine the formation of metropolitan governance. We believe the structure of metropolitan governance is a dynamic process determined partly by the type of contractual arrangements chosen by local governments to play the game by the rules, and that the action arena to study the game local governments play is to examine the interconnectedness of institutional ties established through adaptive or restrictive forms of contractual arrangements. Some adaptive arrangement might involve quid pro quo, ad hoc, or a range of informal agreements. Sometimes such arrangements are about cooperation while at other times they are about competition. On the other hand, contractual arrangements can also be restrictive to safeguard transactions such as an interlocal service agreement, a strict contract or a lease.

Probably, the most significant contribution of this dissertation to theoretical development is that it integrated or synthesized two major areas of literature in the field of public administration: the theories of transaction costs and collective action and the theory of structural embeddedness. Indeed, by synthesizing the transaction cost theory with Granovetter's theory of structural embeddedness we can advance our understanding of the process of metropolitan governance. For example, a local government's social position in a metropolitan area may be institutionalized by socially-constructed rules specifying required, prohibited, or permitted actions (Ostrom, Gardner, & Walker 1994: 38). Rules established through formal agreements and/or institutional ties guide local governments' transactions in an otherwise chaotic social environment. Because socially constructed rules are also developed through repeated interactions, a local government's strategic behaviors/actions can be reduced to an institutionally-defined subset (Scharpf 1997). An individual's strategic action matters in the dynamic process of metropolitan governance structure because, by thinking about metropolitan governance using this framework, it is plausible to think of collective and selective incentives attached to a city's position in a network of social relations and the payoffs associated with a particular strategy. That is, the strategic actions of an individual locality responding partly to

institutional environments (i.e., state and federal statutes) for guiding behaviors and partly to the nature of the transactions can reduce the transaction costs of contracting.

7.2.2 Contributions to Practitioners

Practically, our study has also contributed to the understanding of interlocal contractual arrangements and the importance of such arrangements for practitioners. When conducting transactions across political boundaries, practitioners might be guided by thinking about metropolitan governance not merely as political systems but also as multiple forms of institutional arrangements and interlocal relationships. The arrangements are interrelated, woven in a complex web of rules about rules and about authority and relations. That is, contractual arrangements govern relations and determine social positions. Such arrangements change as local governments attempt to alter their relations and social positions with others. They can influence the formation and the process of institutional change. They, the policy makers, practitioners, and public managers, are institutional entrepreneurs. They are active in assessing the alternative forms of contractual arrangements that best govern their transactions.

At the personal level, it has been argued that frequent interactions between local officials across multiple jurisdictions can facilitate mutual monitoring because frequent interaction builds reputation and fosters higher levels of trust. If frequent interaction is the key to mutual monitoring, then sharing important social, cultural, or economic characteristics may increase the predictability of interactions and thus mutual monitoring. Frequent interactions also imply that the decisions and activities of local municipalities are not simply independent of each other. Such relationships are crucial assets to local government officials because they reduce the costs of exchange and promote development of knowledge by the respective parties; the relationships also give everyone some control over each other through mutual monitoring or even mobilizing partners against third parties. They can also be used as a way to bridge information to other localities or state and federal agencies.

For practitioners, the most pressing problems (dilemmas) perhaps are how to strike a balance when integrating such contractual arrangements into their daily routines especially when running the business of governing. There seems to be a tradeoff between establishing effective contractual arrangements to achieve the best value or effective means in the provision of collective goods and services, and at the same time, fostering and building credible commitment across multiple jurisdictions. For example, one of the main challenges, when local officials rely too heavily on their social networks, is instability (Milward 1996; Cooper 2003). If interlocal contractual arrangements involved in the network include mandated services for needy clients, instability may be a problem because “network failures mean that someone must be able to step in rapidly.” (Cooper 2003:114). Local governments might not have the resources. Oftentimes, there are relatively few alternatives available. There is also a real risk for actors participating in the delivery of collective goods with multiple organizations. The loss of control and the fear that other organizations might “drop the ball” is a structural barrier to effective management of social networks as it can increase future implementation costs to parties in the agreements.

We do not propose a solution to these dilemmas, but we do suggest thinking about the challenges facing public administrators when working collectively across political boundaries in terms of administrative values such as effectiveness, equity, responsiveness, and responsibility. For example, the tradeoffs between efficiency and equity may also influence the stability and formation of contractual arrangements. As students of governance studying delivery systems in metropolitan area, the issue of efficiency is central to our understanding of whether a set of contractual arrangements could achieve the intended goals. Yet, practitioners are equally concerned over issues of equity, i.e., the differential effect of such arrangements on their constituents. That is, the network structure that assists the implementation of contractual arrangements to resolve collective good problems must also respond to values other than economic efficiency. The social networks established through frequent interactions and contractual arrangements in the public sector must respond to other values such as effectiveness, equity, responsiveness, and responsibility (Cooper 2003).

There are also tradeoffs between stability and adaptability. Stability in a network structure means balancing existing contractual arrangements that emphasize efficiency in achieving an intentional economic goal and equity of outcomes of such as an arrangement at a region-wide scale; adaptability, on the other hand, means having to forego some efficiency of stable governance structure or sacrificing efficiency for collective benefit (Scholz & Stiffler 2005). Practitioners often have to make such decisions, foregoing short-term efficiency for the long-term benefit of the collective. Negotiating contractual arrangements is one option to resolve such a tradeoff, but this may involve compromise and transaction costs that may be worthwhile if solving future problems leads to greater regional efficiency. The next option is having multiple forms of institutional arrangements to ease the tradeoff between adaptability and stability. Having a feasible option is also about making institutional choice. This means to make a choice of governance acceptable to all, to shape and to be shaped by the choice made, and to be part of the process so that the notion of adaptability implies having to forego short-term efficiency of governance for the benefits of long-term stability and efficiency.

Interlocal contractual arrangements are not merely ironing out a set of acceptable rules to govern and manage local government exchanges. They are also about building relationships. The challenge is about the issue of learning that is crucial for building strong institutional ties--learning about each other to make compromises in order to maintain consensus relationships. Learning is important not only for consensus building but also to accommodate their diverse preferences which requires trust and mutual communication. This may sound cliché as the meaning of trust itself can mean other things, but the point is that the process of learning is about information sharing in order to overcome problems of uncertainty. But, local governments' efforts do not necessarily mean that their participation in a region-wide effort entails an equal powerbase as assumed by Neo-classical approaches. Local government officials faced with collective action dilemmas must also recognize the importance of selective benefits. They also must recognize, in addition to their administrative position, that social positions also come with selective benefits when working collaboratively across political boundaries. Social

position implies the acknowledgement of local managers' social space and the importance of interactions (i.e., with whom they form institutional ties makes a difference to the success of a contract).

A configuration of institutional ties is also about the challenges of representativeness--who they represent and with whom they form alliances. Local government officials might have the authority to conduct the business of governing within their local jurisdictions, but they may not be able to resolve region-wide coordination unilaterally. With whom they coordinate region-wide policies and establish contractual arrangements reflect the legitimacy of collective action. The importance of responsiveness is also one of the key values of public managers when supplying services, i.e., in a form of unilateral action, or bilateral action, or even multilaterally supplying the services. The choice of interlocal contractual arrangements is important if local officials are to be responsive to the underlying problems in and of metropolitan areas.

7.3 LIMITATIONS

7.3.1 Data and Network Measurement Challenges

In many approaches to modeling networks, a set of nodes in a network structure is regarded as given, where network ties are modeled based upon a particular kind of network space. In our case, network spaces are defined in terms of restrictive and adaptive forms of contractual arrangements. Relying upon the dataset of interlocal service agreements that was compiled by the Department of Community Affairs, institutional ties are observed based upon a single observation of tie, i.e., whether an interlocal contractual arrangement is present or absent within a certain period. There are several limitations with this approach.

The problems of underreporting are evident in the dataset but an important question to address is what methodological steps can be taken to minimize the consequences of underreporting on the measurement of institutional ties. For example, in interpreting the results using the data compiled by the Department of Community Affairs

(i.e., to capture the extent of interlocal cooperation), we must bear in mind that underreporting of interlocal activities by local governments is highly probable. This is largely because most reporting governments do not keep a central file on all written and unwritten agreements. Thus, it may be difficult for local governments to present a complete reporting on their interlocal activities that might be occurring in a given jurisdiction. Furthermore, most of the interlocal service agreement reports were actually coordinated by the respective counties, making data somewhat biased to municipalities' activities conducted with county governments. Bearing this in mind, data on the interlocal activities are probably biased towards activities between municipalities and county governments; the actual activities tend to be higher than the activities reported by local governments. It is not unreasonable to assume that a comparable degree of bias toward activities between county and municipal governments as well as underreporting affect the results presented in this research.

The second shortcoming is related to the nature of the data that attempts to capture the strength of institutional ties. For example, although we have treated institutional ties at the dyadic level, they are actually a dichotomous variable that does not take into account the extent to which interlocal cooperation actually occurred, i.e., the thickness of cooperation in terms of the number or magnitude of interlocal contractual activities. At this stage, it is not possible to deal with the strength of institutional ties data in model construction using SIENA and to develop model-based approaches to estimate the strength of institutional ties (i.e., based on the number of contractual arrangement between localities rather than on dichotomous data). While this may not be possible at this stage, future studies should develop more effective measurement as well as models for the measurement of the strength of institutional ties in order to validate the empirical evidence in this study.

The third challenge is related to the nature of the relationships embedded in the formation of institutional ties, that is, the extent to which resources flow between local governments as a result of a contractual arrangement. It is also not clear from the information in the reports which jurisdiction initiated the transactions or interlocal

activities. It is also not clear which types of compensation were involved in the transactions. For example, although county governments often played an important role in the provision of public safety across the county political boundaries, the interlocal activities involving the county as the provider of public safety are not implicitly stated in the dataset making any judgment about the direction of contractual activities difficult to establish. Furthermore, it is difficult to establish whether municipal governments actually compensate county governments to provide such service at the county-wide level. Although the assumption of non-directional matrix is reasonable to minimize the potential impact of misspecification of service activities, it still has some influence on the findings of this research.

7.3.2 Methodological Challenges

Although theoretical argument has often found it useful to view social networks as “skeletal” abstractions of a much richer social reality, a question remains as to the extent to which attempts to model and quantify network properties can rely on network observations alone, or would instead be enhanced by additional information about actors and the ties that they formed. In the context of our research, to what extent is it necessary to develop a more systematic (and quantitative) understanding of such generalized relational data structures, and thereby develop models and analytic approaches that reflect the context in which the process of metropolitan governance structure actually took shape--the background, intentions and beliefs of local governments involved and the institutional and geographical settings in which they found themselves during negotiation.

Some of the major methodological challenges related to generalization of results from this research can be summarized as follows. Although we have utilized social networks analysis to examine the formation of metropolitan governance (i.e., through the establishment of institutional ties as the outcome of regularities of interlocal contractual arrangement), we have not focused and extended such theoretical modeling to empirically test models for social networks on a larger scale or even across state political boundaries. That is, by examining the formation of metropolitan governance structure using network

analysis only in four major metropolitan areas in Florida, it is difficult to generalize the extent to which we can apply the results to other metropolitan areas across the nation. The method used to describe the formation of metropolitan governance structures may be unique only to Florida that the results may not be applicable to other metropolitan areas that are beyond the state political boundary.

An important reason to examine interlocal cooperation using network analysis across multiple state boundaries is that it provides an understanding of the constraints and opportunities for social processes. Institutional environments may influence the type of institutional ties formed by local jurisdictions. Yet understanding remains limited in the extent to which the course of social processes can be predicted from network (structural) effects when state political boundaries are not taken into account. Would it be useful to engage in empirical and methodological programs of study that allow the relationship between network structure and the various types of social processes to be articulated more clearly across state political boundaries? Different state government may provide different incentive structures for local governments to establish institutional ties. Indeed, the models for the co-evolution of network ties and other network-based diffusion processes can be extended to other metropolitan areas beyond state boundaries. Future studies should examine interlocal cooperation in metropolitan areas in multiple states to determine whether state incentives have different effects on the formation of interlocal contractual arrangements and thus the interconnectedness of institutional ties.

The second challenge is related to the design of network studies and sampling issues. Metropolitan governance rarely has discreet political boundaries, and to capture what is meant by metropolitan governance and to reiterate it through network analysis would be potential problem for generalization. How a metropolitan area is defined determines which local governments will be included in the analysis and this may pose problems to the number of actors involved in interlocal activities. A major challenge here is how to define the boundary of a metropolitan area and thus the network space utilized in the analysis. It leads to a potential problem related to the question of sampling, i.e., the type of actors and number of actors involved in the formation of institutional ties. A more

principled means for handling sampling issues would clearly be very valuable when studying the formation of metropolitan governance and the type of institutional ties that will be established at the metropolitan level.

7.4 FUTURE DIRECTIONS AND RESEARCH

While this study goes a long way in demonstrating the potential usefulness of the institutional collective action framework, additional research is clearly needed. First, while this study did not assess the success of individual interlocal contractual arrangements, a researcher could potentially assess the individual success of interlocal contractual arrangement in meeting the general aim of an agreement. The usefulness of an institutional collective action framework is based on its ability to make predictions about the likelihood of local governments to cooperate and enter into an interlocal contractual arrangement. It has little to say whether such an arrangement could yield certain types of selective benefits to those participating in an agreement. Future research using institutional collective action should attempt to link interlocal cooperation through interlocal contractual arrangements to potential benefits resulted from dyadic cooperative successes. By doing so, researchers could establish the relationship between the benefit of interlocal contractual arrangements as an alternative to other forms of institutional arrangements important for regional cooperation. Such attempts may include outcomes or benefits of interlocal contractual arrangements as dependent variables across time using available count data.

Second, at the local government level, because outcomes were not explored and success was not measured, it may appear that this research makes the faulty assumptions that interlocal contractual arrangements equal interlocal cooperation, that such an arrangement is considered good and that interlocal agreements are equated with successful cooperative efforts between two localities. While there are clear arguments that the relationships between the processes of interlocal cooperation may also include the competitive nature of interlocal relations, it is an empirical question that must be tested repeatedly to determine which processes are more likely to lead to the potential success of interlocal cooperation for regional integration and cooperation. That is, while

interlocal competition is not necessary bad (as local governments may compete and enter into a restrictive form of contractual arrangement to safeguard their transactions), other arrangements may also be feasible since interlocal cooperation based on trust would lead local governments to enter into a more adaptive form of interlocal contractual arrangement.

Whether such alternative institutional arrangements would yield a certain level of success (i.e., “better value” or “reduced costs”) is an empirical question that should be explored in the future. Through this line of research, i.e., whether to enter into a restrictive or adaptive form of contractual arrangements for better value or reduced cost, researchers would be able to make predictions and policy recommendations on possible warning signs of a likely success or failure of certain form of interlocal contractual arrangements. That is, when local governments enter into interlocal contractual arrangements in the provision of collective goods, they have done so because the arrangement chosen has worked best--it has worked because a local government was motivated by a search for an arrangement that could provide better value or reduced cost for its constituent.

Third, future study on interlocal contractual arrangements can also be extended across time using static network calculations for a particular period and then regress the network measurements on outcome measures in order to gain insight and predictions about the success of interlocal contractual arrangements. Although the current study has used a model that takes into account time factors to examine the dynamic process of network structure and thus indirectly the formation of metropolitan governance, the potential benefits (or positive outcomes) can also be introduced to account for local governments’ responses to positive and selective benefits to enter into specific interlocal agreements. The results and analysis of such models could provide additional insight into the importance of network effects on the behavior of local governments and the type of arrangement chosen to govern their transactions.

Fourth, geographical distance as a proxy to repeated interaction in interlocal cooperation has not been directly addressed in this study. Insofar as structural zero has been used to control for geographical distance across metropolitan areas, within a specific metropolitan area, local governments' proximity to others have not been addressed directly. Such a factor might play an important role in a local government's decision to enter into interlocal agreements. This might be crucial for two governments attempting to enter into bilateral agreements in the sense that such agreements depend more on close proximity to facilitate repeated interactions rather than multilateral agreements. Multilateral agreements that involve more than two local governments, on the other hand, cover a wider area in order to address certain common regional concerns and thus the geographical proximity is less of a concern in their decision-making calculus. Regardless, geographical distance is still one of the most important contextual factors not considered in this study. Future study, when determining whether local governments would enter into interlocal cooperation, should take this factor into account and also, if geographical factors matter, what form of interlocal cooperation would take place in order to govern their exchanges.

Fifth, another important factor to consider and closely related to geographical proximity is other public organizations such as special districts, state and federal agencies. They might provide insight into the dynamic of metropolitan governance and determine who (or which level of government) actually played the main role in facilitating interlocal cooperation and coordination. For example, the second part of this study has not addressed nor taken into account other levels of government to examine whether the hierarchical structure of the American federal system actually played a role in coordinating resources (or was a central actor). Although in this study county government has been treated as one of the main actors in the formation of metropolitan governance (i.e., in the sense that they are an umbrella under which local governments operate and organize themselves across political boundaries in the realm of public safety), higher level governments may provide alternative institutional arrangements for municipal governments to organize and cooperate with other municipalities.

While metropolitan governance is a distinct approach to understanding the process in which local governments cooperate or compete with each other in the provision of public goods, metropolitan governance actually has been treated here as the action arena for institutional ties. These ties formed and dissolved over time. However, there is a problem when studying local governments' formation and dissolution of institutional ties without considering state or federal governments and special districts in the provision of public safety. For example, a network of institutional ties in the action arena is contextually meaningful if local governments (with their specific intentions and goals) can organize themselves to resolve a region-wide concern without the help of higher level government. However, if the formation of metropolitan governance also depends on state and federal agencies, they should also be included in future analysis. Although such analysis assumes a command-and-control approach to metropolitan governance, it would provide insightful understanding as to whether a higher level of government could facilitate or shape the structure of metropolitan governance in order to curb region-wide concerns when local governments' efforts failed.

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