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# Which Local Governments Cooperate on Public Safety?: Lessons from Michigan

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**Which Local Governments Cooperate on Public Safety?  
Lessons from Michigan**

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## **Abstract**

Despite the increased interest in voluntary services cooperation, little is known about the factors that encourage local governments to enter into collaborative services arrangements with each other. This paper addresses this question through an analysis of interlocal contracting arrangements for police and fire services reported by 464 local governments in Michigan. While the contracting of public services is increasing common in local governments across the country, collaborations on police and fire services have proved far more difficult to achieve. Public safety contracting presents a dilemma for public managers. On one hand, local governments devote a substantial part of their budgets to police and fire, and public safety employees may approach 25 percent of the unit's workforce and forty percent of its payroll. Given the importance of public safety expenditures in the budgets of local governments, it may be impossible to reduce the costs of local government without reducing spending on police and fire services. Yet the fear of lost jobs and lower quality services will often make contracting for police and fire highly controversial in the community. Also, collaborations involving police and fire services may become entangled with the "politics of place." Unlike other services areas where the contractor may be a private or nonprofit organization, public safety contractors are other local governments, and the baggage of past conflicts and rivalries attach to the issue. We group the factors expected to influence the incentives and feasibility of local governments to collaborate on public services into the following categories: the organization of local governments in the county and variations in the unit's administrative structure, community demographics, and the fiscal capacity of the local unit. Using logistic and negative binomial regression, we analyze the effect of these factors on the frequency and extent of cooperation reported for police and fire services. We find important differences in the role played by these factors in the frequency and extent of cooperation reported across the two different service areas and within the different types of local units (city, village, and township).

## **Which Local Governments Cooperate on Public Safety? Lessons from Michigan**

While government contracting with for-profit and non-profit organizations has provided the subject matter for volumes of public management research, only recently has interlocal contracting begun to attract its share of academic attention. Long taken for granted as a routine practice of local government administration, this alternative to direct provision has been recognized with renewed interest, as it represents a voluntary means of achieving regional coordination (Carr and Feiock, 2004; Savitch and Vogel, 2000). Interlocal contracting also provides an alternative for fiscally constrained local governments that cannot afford to match changing service demands through direct supply. As local public officials search for ways to economize, they may seek out opportunities to cooperate with other governments, especially for those indispensable functions such as public safety, that do not lend well to contracting with other sectors.

Although contracting of public services is increasingly common in local governments across the country, collaborations on police and fire services have proven among the most difficult to achieve. Public safety contracting presents a dilemma for public managers. On one hand, local governments devote a substantial portion of their budgets to police and fire and public safety may approach 25 percent of the unit's workforce and 40 percent of its total payroll. Given the importance of public safety expenditures in the budgets of local governments, it may be impossible to reduce the costs of local government without reducing spending on police and fire services. Yet the fear of lost jobs and lower quality services will often make contracting for police and fire highly controversial in the community.

Also, collaborations involving police and fire services may become entangled with the “politics of place.” In some places, particularly smaller, wealthier, suburban communities, residents may hold a belief that the services offered by their jurisdiction are the best available, and therefore seek to exclude non-residents from the benefits of that service. Park (1997), for example, found that local governments behave competitively with one another in the area of public safety. Police and fire services lend to a sense of community identity, as how safe one feels in his or her neighborhood is a direct consequence of the level and quality of public safety services available to local residents.

Unlike other service areas where the contractor may be a private or nonprofit organization, public safety contractors are other local governments, and the baggage of past conflicts and rivalries may attach to the issue, creating barriers to cooperation. Moreover, citizens’ support for their governments’ contracting choices may substantially diminish when public safety functions are involved. Thompson and Elling (2000) find that citizens are least supportive of government contracting for functions that involve coercion or social control. While their study focuses on contracting with private for-profit and nonprofit suppliers, their findings may be suggestive of citizens’ preferences for contracting in more general sense.

Despite the renewed interest in the use of interlocal service arrangements, little is known about the factors that encourage local governments to enter into collaborative service arrangements with one another, and there is particularly little work on interlocal contracting for the conflict-prone services of public safety. Moreover, the few empirical studies undertaken on interlocal cooperation have produced mixed findings about the types of services they cover, the contextual factors that lend to this approach, and local officials motivations for engaging in these arrangements. Previous studies have also displayed a tendency to focus on the interlocal

agreements of municipalities and counties, excluding other forms of local governments such as villages and townships that are common the Midwestern and Northeastern states.

We build on the findings of previous empirical work by testing a preliminary set of models that identify factors contributing to interlocal cooperation on police and fire services. We group the factors expected to influence the incentives and feasibility of local governments to collaborate on public services into the following categories: the organization of local governments in the county and the variation in the unit's administrative structure, community demographics, and the fiscal capacity of the local unit. The choice of service delivery arrangement is likely to be contingent upon a range of factors, and such propensities may be sensitive to the characteristics of the good or service. Unlike previous work that has bundled all activities of public safety into one measure (Morgan and Hirlinger, 1991; Wood, 2004), we disaggregate the function into labor intensive and capital intensive products, to examine variation in contracting for different aspects of the service.

### **What Explains Local Government Cooperation?**

Empirical studies have generally approached the topic of interlocal contracting from a prior assumption that local governments do it for economizing reasons, to achieve regional coordination (Savitch and Vogel, 2000), or because local actors value the future of their relationship with neighboring jurisdictions (Wood, 2004; Thurmaier and Wood, 2002). Several broad explanations for interlocal cooperation are suggested by these works. We draw upon the most common themes to test a range of variables that we have distilled into three explanatory categories: fiscal factors, government structure, and demographic characteristics of the community. Institutional rules enabling or inhibiting cooperation among local governments and

tax and expenditure limitations have also proven to be influential factors in interlocal contracting decisions (Morgan and Hirlinger, 1991, Advisory Commission on Intergovernmental Relations, 1985). In the subsequent models we test, institutional rules are constant, as all of the observations are confined to a single state.

### *Fiscal factors*

Sonenblum, Kirlin, and Ries (1977) proposed an economically driven explanation for the decision of public officials to enter into interlocal contracts. They argue that as fiscal pressure increases, public officials realize their inability to reduce or maintain costs for existing services. As a result, they are prompted to consider alternative service delivery options. The opportunities of many local governments are shaped by fiscal stress, caused by an accumulation of factors including rising municipal benefit costs, declining shares of state and federal funding, and institutional constraints limiting local governments' ability to levy increased taxes. When local government revenues are stable or declining, yet the unit must continue providing the same level of service, public officials may explore cooperative arrangements as a way to meet service demands on a fixed budget.

The need to economize constitutes the most frequently cited rationale for the using interlocal agreements (Morgan and Hirlinger, 1991; Stein, 1990; Advisory Council on Intergovernmental Relations, 1985; Sonenblum, Kirlin, and Ries, 1977). The desire to achieve economies of scale is among the most frequently cited rationales offered by local government officials for entering into interlocal agreements (Morgan and Hirlinger, 1991). Spreading the cost of services over a larger distribution area has the effect of lowering the cost per unit and eliminating unnecessary duplications. While scale economies may not be possible for all public goods and services, cost sharing is seen as particularly desirable for needs that are capital

intensive or have high start-up costs. Bartle and Swayze (1997) also found that fiscal stress, measured by legally imposed tax levy limits, was the most important factor influencing interlocal contracting among communities in Nebraska.

#### *Government structure*

In studying both public and private sector contracting, Ferris (1986) expanded upon the Sonenblum, Kirlin and Ries model by arguing that political factors also contribute to local government contracting decisions. Institutional form may be a particularly important feature of government structure explaining variation in interlocal contracting practices. In particular, council-manager forms of government have been linked to the use of interlocal agreements (Wood, 2004; Thurmaier and Wood, 2002; Bartle and Swayze, 1997; Morgan and Hirlinger, 1991).

There are a number of reasons why professional administrators may facilitate interlocal activity. Sonenblum, Kirlin and Ries (1977) suggested that professional administrators might be inclined toward these efforts as a means of promoting minimum service standards in metropolitan areas. Frederickson (1999) contends that that the longer tenure and long-range outlook of public managers creates incentives for joint action. 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.

Institutional supply, within the metropolitan context, is another feature of government structure that may explain the propensity for interlocal contracting. When there is a lack of supply, or the types of suppliers available are inappropriate for the function sought, local governments must resort to direct provision. When local governments are located in a

metropolitan statistical area, they are more likely to be parties to interlocal agreements (Post, 2002; Morgan and Hirlinger, 1991). Post (2004) has further argued that the geographic density of governments serves as a more precise indicator of interlocal contracting in metropolitan areas.

Institutional supply may also be viewed as an internal feature of government structure. Communities with smaller populations or those that simply have minimalist preferences may provide very few services at all to its residents. Thus, when local government institutions have been consciously constructed to be exiguous in their provisions, they are also unlikely to be buyers, sellers, or joint producers of public safety because these services represent the most basic functions and likely comprise the core of those governments.

#### *Community Demographics*

Moreover, the characteristics of a community can also shape the likelihood of the community cooperating for services. Visser (2002) has argued that urban political cultures have an important impact on the roles and activities of city officials, and these cultural factors are more significant than traditional explanations for interlocal cooperation. The demographic composition of jurisdictions in particular useful in helping to explain why local governments cooperate.

Communities in which greater numbers of poor citizens reside are also likely to be fiscally stressed and inclined toward service-sharing agreements, as are communities that are losing population, and thus tax revenues. On average, minority and aging populations tend to be higher users of services, and among the first to feel the impact if these programs and services are cut or reduced or in their community. Morgan and Hirlinger (1991) find that jurisdictions with larger proportions of elderly citizens were less inclined to use interlocal agreements, offering the explanation that older adults tend to be more politically aware consumers of services and may block cooperation attempts if they suspect a change in their service level or quality.

The degree to which the population of communities is homogenous has also been explored as a factor of interlocal cooperation. Oakerson (2004) has argued that homogeneity of local government populations promotes a less adversarial politics and allows the community to speak as one voice. Oakerson contends that homogeneous populations allow public officials to make decisions and act on the community's behalf with greater confidence that citizen preferences are given appropriate expression. Thus a city manager or mayor in touch with the preferences of a homogeneous community are less likely to encounter public opposition when entertaining the prospect of cooperation.

Whether large or small, population size may also impact the likelihood of service-sharing arrangements. The total population of the communities, as well as population density may signal a demand for a large number of service, or services of a specialized type. However, if the community loses population over a period of time, it may be stuck with higher service costs that what it can support with its tax base. Substantial increases or decreases in population imply changing service levels, which may result in a need to consider service-sharing arrangements, to minimize excess resources, or to purchase additional service capacity.

### **Service Characteristics**

Ferris and Graddy (1986) find that when local governments contract, sector choice is determined in part by the type of service to be provided. Service characteristics represent important factors in the determination of which services are likely to be contracted and jointly provided. Generally, services with the properties of scale economies and those with outputs that make quality assessment fairly easy are thought to be best suited for contractual arrangements.

Brown and Potoski (2003) have demonstrated that asset specificity and service measurability are significant factors in local governments choice of external production mechanisms. These authors argue that city managers involved in contracting decisions must calculate the risks associated with using alternative service delivery arrangements. They reveal that local government officials rely on the criteria of asset specificity and service measurability as general heuristics in their approach to risk minimization. Service meterability refers to how easily service outputs can be measured, while asset specificity refers to the specialized investments necessary for production (Brown and Potoski, 2003).

Conventional wisdom suggests that public goods and services for which economies of scale are easily realized make natural choices for cooperative arrangements. Public goods with high capital costs and require large financial investments, such as fire trucks, or technology required for police dispatch, or fire trucks, may be the most likely candidates for cooperation. On the other hand, services such as police patrol and fire protection that tend be labor intensive and inherently designed to serve a limited geographic area may present far greater difficulty for negotiating and managing a cooperative agreement.

Post (2002) finds that when local governments are geographically dense, intergovernmental cooperation is more common in the production of capital-intensive goods and services such as highways, housing, parks, and water distribution. Alternately, she finds labor-intensive agreements (for services such as corrections, education, fire, police, health and human services) to also occur in geographically dense regions, but at lower rates than cooperation related to public goods and services that have high capital costs.

We anticipate that the less revenue available to local governments, the more likely they are to use interlocal agreements, and that cooperation on the specific service of police dispatch to

be even more common as these services tend to be more capital intensive. Communities with higher tax levies and mills, and higher shares of state revenue are less likely to have the need to cooperate, whereas those with fewer of these resources will be more inclined.

Communities with larger populations may tend more toward direct supply, thus public safety cooperation is expected to decrease in proportion to community population. We expect that jurisdictions with higher minority, elderly, and low-income residents will be more inclined toward cooperation, as these populations have greater service needs, some or all of which may not be available in their own community. Following Oakerson's (2004) argument, we expect that as the percent nonwhite population increases, cooperation will be less likely, as public officials negotiating service-sharing deals will have greater difficulty accommodating diversity of preferences, and thus, will resort to direct supply to avoid controversy.

In terms of government structure factors, we follow Post's (2004) logic that interlocal cooperation will be more frequent when both institutional supply and geographic density are greater, especially for police dispatch services, which requires specialized investments in technology. Geographic density is measured by the total number of jurisdictions within the county. We also abide by Frederickson's (1999) logic, and expect that cities with council manager form of government are more likely to use cooperate.

### **Data and Methods of Analysis**

The data used in these analyses were collected in the spring of 2005 through a series of mail/web survey to the city administrators, village managers/presidents, and township supervisors of every local general-purpose government in 24 of Michigan's counties. Approximately 80 percent of the state population resides within these 24 counties. A total of 670 units of government were

surveyed: 159 municipalities, 430 townships, and 80 villages. Completed responses were received from 464 units, representing a 70 percent rate of response. The responses were evenly distributed among local government type (cities, 71 percent; villages, 65 percent and; townships, 69 percent).

Survey respondents were asked to report the delivery mechanism for 116 services provided by the jurisdiction, grouped into 26 functional categories. For each service, respondents indicate whether their jurisdiction directly provides the service, provides to, has provided by, or jointly provides with another unit of government, provides through a special district, contracts with a private provider, or does not provide at all. The dependent variables used in this analysis are computed measures based on the following response categories: provides the service *to* another local government, has the service provided *by* another local government, or jointly provides *with* another local government.

### *Method of Analysis*

Each model includes three groups of variables used to examine cooperation on these selected public safety functions: the organization of local governments in the county and variations in the unit's administrative structure, community demographics, and the fiscal capacity of the local unit. In first set of analyses, we examine cooperation by local government type (cities, villages, townships) on four distinct functions: police street patrol, 911/dispatch, fire fighting and rescue, and fire inspection. Cooperation for these services is measured as a dichotomous response, with unit cooperation on the service coded 1, and no cooperation on the service coded as 0. The frequency of cooperation is examined using logistic regression, and the interpretation of the

regression coefficients is in terms of whether the factors increase, decrease, or have no effect on the likelihood of interlocal cooperation on the service in question.

In the second set of analyses, we examine the extent of cooperation on both police and fire services. Our survey included 12 distinct services within the category police functions and 7 distinct services within the category of fire protection. Thus, the extent of cooperation for police services can vary from 0-12 for police, and 0-7 for fire services. The measures of extent of cooperation are event counts and are estimated using negative binomial regression. Event count data are not normally distributed and are better fits to Poisson or negative binomial distributions. King (1989) has shown that OLS will produce severely biased regression coefficients when used for count data, leading to problems in making substantive interpretations and drawing conclusions from statistical tests based on these coefficients. Generalized least squares (Bowler and Donovan, 2004) and Poisson regression (McCabe, 2000) are commonly used for analyzing counts, although in many instances negative binomial regression is superior to both models for analyzing count data (Cameron and Trivedi, 2001).

Finally, all six models are clustered by county and robust standard errors are used. The decision to cluster the estimates by county is based on the assumption that the decision to cooperate with other local governments is not independent among units within the same county. Units need other units to cooperate with, and for the purposes of this analysis, we assume that a unit's partners are most likely to be within the same county. Thus, the decision by one local government to cooperate on any of these services increases the probability that among local unit within the same county will report a similar arrangement for this service. We recognize that this assumption will not hold in every case, but believe it is supported most of the time.

## **Findings**

### *Police Services*

First, we examined the cooperative arrangements for the public safety service likely to be the most difficult to achieve cooperation on because it is the most labor-intensive and prone to political conflict: police street patrol. When examining all local governments units combined, only the unit's millage and low levels of internal institutional supply, as measured by the number of services not provided by the unit are significant. However, disaggregating these results by jurisdiction type provides a different picture. Table 1 provides the results from this analysis.

Table 1 about here.

Local governments that tend to be lower-level providers of service to begin with seem to be less inclined toward cooperation on police patrol. This variable is significant for both villages and townships, which tend to have smaller populations, and smaller government in general, so public safety likely serves as the foundation for the unit. A number of the demographic variables are significant in explaining cooperation for police patrol in the village form of government, and to a lesser extent, townships. The significance of several population density measures suggests that villages (which tend to be small in their land area) and townships (which tend to be large in their land area) with large populations, and are located within populated regions of the state are more likely to cooperate for police patrol.

Next we examine cooperation on 911/dispatch. We expect a greater likelihood of cooperation on dispatch because as a capital-intensive service, it has the characteristics for scale

economies to be achieved. However, the results do not differ dramatically from the findings related to police patrol. Findings from this analysis are displayed in Table 2.

Table 2 about here

When all units are examined together, units that offer fewer services are less likely to cooperate for dispatch. Population gain also makes a difference in the likelihood that a local government will cooperate for this aspect of police services. When the types of local governments are examined independently, factors of population density and geographic density are both significant in explaining dispatch cooperation in villages and townships. Counter to the hypothesis drawn from Oakerson's logic, villages and townships with larger nonwhite populations are more likely to cooperate on both street patrol and dispatch.

Our last analysis of police services involved looking at the extent of cooperation in this area, measured by the 0-12 count of the number of police functions the unit cooperates on. With all units combined, two government structure variables significant. Both the total number of municipalities in the county and total functions not provided by the unit are statistically significant, supporting Post's (2004) argument that geographic density is linked to cooperation and demonstrating consistency with findings from the prior two analyses that units providing fewer services provide police protection directly. A few demographic characteristics also point to the likelihood that communities will cooperate for police to a greater extent. Consistent with findings from previous studies of interlocal contracting for public safety (Morgan and Hirlinger, 1991), we found that local governments with higher proportions of older residents cooperate on

fewer police functions. Population gains also signal an increase in the extent of police cooperation.

Once again, the findings reveal a fair amount of variation in the factors influencing cooperation among government type. The results of this analysis are provided in Table 3.

Table 3 about here

Consistent with the last two sets of results, the government structure factors of geographic density are significant for predicting the extent of cooperation by villages and townships, while lower-level provision predicts fewer cooperative arrangements by these units. Moreover, the extent of cooperation on police services in townships and villages is a function of total population size, with smaller communities cooperating more. One fiscal factor, while unsurprising, is significant in predicting a lack of cooperation in both cities and townships; units that receive larger shares of revenue from the state are less likely to extensively cooperate for police services.

### *Fire Services*

Our second set of analyses examined public safety cooperation in the area of fire protection. First, we focus on cooperative arrangements for the specific service of fire fighting and rescue. Fire fighting is a service that also has the properties of labor-intensity, although much less so than police patrol. Fortunately, there are few occasions for fighting fires in most communities, and thus, fewer personnel hours needed than that required for routine street patrol performed by police. Despite the fact that fire fighting is an underutilized service with fixed costs, cooperation on this service may be difficult to achieve, as it is just as prone to political conflict as police

patrol. Citizens may oppose fire cooperation proposals, based on fears of longer response times and other concerns about service quality.

When we examine all units combined, we find several factors are important for predicting cooperation on fire fighting. These findings are presented in Table 4. Again, units that are minimal-provision governments are less likely to cooperate for fire fighting, as are those that receive higher shares of revenue from the state. Population size achieves statistical significance, as well as having larger shares of older residents. When we examine fire fighting by individual unit type, we do not find anything dramatically different, with the exception of the fact that population density and geographic density both seem to be more useful for predicting cooperation in villages than in other local government types.

Table 4 about here

Next, we looked at fire inspection. Results from this analysis appear in Table 5. Geographic density and minimalist provision, along with higher shares of state shared revenue, and the logged unit population variable are significant for cooperation on fire inspection when all units are taken as a whole. Several government structure factors are significant in the cities model, including the number of townships per county, and consistent with the findings of Morgan and Hirlinger (1991), presence of a city manager. Population variables, including racial homogeneity, serve as particularly important factors influencing cooperation for fire inspection in villages and townships. Only for one type of unit, townships, is state shared revenue an important factor.

Table 5 about here

Finally, we studied the extent of cooperation on all fire protection services, as measured by a 0-7 count of the number of services that the jurisdiction cooperates on. Results are provided in Table 6.

Table 6 about here

When all units are taken together, we find that all government structure factors tested are statistically significant, along with a number of demographic variables, and state revenue sharing. Overall, the picture suggests that the extent of cooperation on fire services increases when local governments are situated in geographically dense areas, provide fewer services to begin with, and have fewer residents over the age of 65.

A few noteworthy differences emerge among the unit types. In cities, population factors play a much more significant role in predicting the extent of cooperation on fire services than they do for other local government types. Specifically, cities with declining population, higher population density, larger number of racial minorities, and a lower per capita income cooperate more extensively on fire services functions. The presence of a city manager is statistically significant, but inconsistent with the predicted direction. Among other unit types, some of these factors are also statistically significant for townships. Villages cooperate on more fire services when they are located in counties with larger populations. Lastly, when cities and townships receive higher shares of state revenues, they cooperate on fewer fire services, but the same does not hold true for villages.

## **Discussion**

The aim of this paper was to provide a preliminary analysis of the conditions that lead to interlocal cooperation on public safety services. We chose police and fire because these services have characteristics, such as labor intensity, that make cooperation more challenging. They are also difficult services to achieve cooperation on because they tend to be among the most politicized. Community identity may be shaped by the level and quality of public safety services, and to the extent that local residents are protective of these benefits, they may seek to exclude outsiders by publicly opposing cooperation proposals. Among all local government types, cities seem the least likely of all to cooperate in the public safety domain; or at least we're better able to explain variation in public safety cooperation in villages and townships, than we are cities.

Our analysis is preliminary and suffers from a number of limitations. Aside from being a single state analysis, there are other factors that are likely to influence cooperation prospects that are not taken into account in these models. For example, the size of the municipal workforce and percentage of the workforce that is unionized, are likely to play a role in interlocal contracting patterns. There is also an emerging literature that speaks to the role of social networks among local public officials in promoting cooperation (Thurmaier and Wood, 2002), and our analysis does not directly account for this factor.

Given these limitations, the findings presented here should be interpreted cautiously. Nevertheless, several consistent themes emerge about the factors influencing interlocal cooperation for services of public safety that may guide further study in this area. First, the internal dimension of institutional supply makes a difference in overall cooperation tendencies. It seems that when governments are minimalists in their provisions to begin with, they are unlikely to cooperate for public safety, because this is a basic function of local government. In many of

the less populated jurisdictions such as townships, police and fire services may serve as the backbone of local government.

Post (2004) argued that the geographic density of local governments matters. She makes a case for why geographic density is a superior measure to jurisdictions' location in a metropolitan statistical area. Our findings directly square with her argument. The total number of local governments within the county is significant for explaining the extent of cooperation on both police and fire services. Other consistencies we find are contained within the realm of community demographics. For example, our results comport with previous findings that local government with higher populations of older residents are significantly less likely to cooperate. Moreover, racial homogeneity appears a significant factor in predicting interlocal cooperation, and in some cases, lack thereof, as evidenced by the significance of the percent nonwhite population variable in many of our analyses.

Overall, fiscal factors had surprising little influence in our analyses. Among fiscal factors, state revenue sharing clearly has the greatest impact (negative) on cooperation. If state administrators expect local governments to cooperate more frequently in the future to compensate for reductions in state aid, they may need to reevaluate the incentive structure and tie revenue sharing to cooperation.

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**Table 1: Collaborative Arrangements for Street Patrol**

	All Units	Cities	Villages	Townships
<i>Government Structure/Powers</i>				
Total Municipalities in County, 2002	.011 (.024)	-.175 (.093)**	.807 (.574)+	.027 (.025)
Total Townships in County, 2002	-.026 (.039)	.114 (.155)	.086 (.153)	-.046 (.037)
Total Functions not Provided by Unit	-.027 (.007)***	-.000 (.051)	-.078 (.038)**	-.033 (.010)***
City Manager	-----	-1.706 (1.219)+	-----	-----
Home Rule Village	-----	-----	-45.662 (24.196)*	-----
Charter Township	-----	-----	-----	.452 (.633)
<i>Demographic Variables</i>				
Median Pop of Cities in County	.000 (.000)	-.000 (.000)	.000 (.000)*	-.000 (.000)
Median Pop of Townships in County	-.000 (.000)	.000 (.000)	-.000 (.000)	-.000 (.000)*
Log of Unit Population, 2000	-.138 (.267)	2.423 (1.569)+	-16.59 (8.418)**	.443 (.450)
Pop Change (%), 1990-2000	.011 (.007)+	-.040 (.033)	.030 (.051)	.003 (.008)
Pop per Sq Mile, 2000	-.000 (.000)	-.000 (.000)	.002 (.000)**	.000 (.000)+
Pop, 65 & Older (%)	-.412 (3.617)	12.134 (10.869)	8.521 (13.792)	-9.370 (4.658)**
Pop, Nonwhite (%)	2.110 (1.998)	1.255 (3.360)	206.628 (108.304)*	2.385 (2.572)
Personal Income (Per Capita)	.000 (.000)	.000 (.000)	.001 (.000)*	.000 (.000)
<i>Fiscal Variables</i>				
Log of Total Tax Levy	-.004 (.205)	-.806 (.756)	4.109 (2.388)*	-.020 (.387)
Unit Millage	-.085 (.047)*	.192 (.119)+	-.584 (.707)	-.084 (.198)
Extra Millage	.056 (.052)	-.012 (.160)	-.229 (.493)	.023 (.198)
Log of State Shared Revs (Statutory)	-.211 (.161)+	-1.266 (.957)+	8.465 (6.166)+	-.583 (.217)***
Constant	5.058 (1.336)***	.797 (8.884)	-35.637 (28.269)	5.850 (2.418)**
Pseudo R <sup>2</sup>	.134	.186	.609	.103
Chi <sup>2</sup> (df)	256.62 (15)***	49.76 (16)***	6130328.09 (14)***	76.02 (16)***
Log Likelihood	-226.205	-26.729	-13.002	-145.931
N (Observations)	387	103	48	235
N (Clusters, Counties)	24	23	21	24

Notes: Robust standard errors in parentheses. \*p<.10, \*\*p<.05, \*\*\*p<.01; two-tailed test. +p<.10, one-tailed test.

**Table 2: Collaborative Arrangements for 911/Dispatch**

	All Units	Cities	Villages	Townships
<i>Government Structure/Powers</i>				
Total Municipalities in County, 2002	.020 (.027)	-.009 (.049)	-4.446 (1.533)***	.045 (.026)*
Total Townships in County, 2002	-.015 (.029)	-.042 (.088)	-1.003 (.416)**	-.013 (.025)
Total Functions not Provided by Unit	-.044 (.008)***	.016 (.041)	.016 (.060)	-.054 (.080)***
City Manager	-----	-.474 (.791)	-----	-----
Home Rule Village	-----	-----	Variable Dropped	-----
Charter Township	-----	-----	-----	.827 (.640)+
<i>Demographic Variables</i>				
Median Pop of Cities in County	-.000 (.000)	-.000 (.000)	-.001 (.000)***	.000 (.000)
Median Pop of Townships in County	-.000 (.000)+	-.000 (.000)	.007 (.003)**	-.000 (.000)***
Log of Unit Population, 2000	-.262 (.338)	.105 (1.101)	-37.685 (11.470)***	.355 (.456)
Pop Change (%), 1990-2000	.016 (.008)*	.023 (.023)	-.249 (.158)+	.025 (.009)***
Pop per Sq Mile, 2000	-.000 (.000)+	.000 (.000)	.025 (.008)***	-.000 (.000)***
Pop, 65 & Older (%)	-3.125 (2.636)	-8.827 (5.513)+	184.536 (76.500)**	-2.876 (6.286)
Pop, Nonwhite (%)	-.176 (1.860)	-.663 (2.224)	1600.343 (522.750)***	8.400 (2.967)***
Personal Income (Per Capita)	.000 (.000)	.000 (.000)	.001 (.001)	-.000 (.000)
<i>Fiscal Variables</i>				
Log of Total Tax Levy	-.331 (.242)+	-.306 (.682)	.721 (12.876)	-.549 (.431)+
Unit Millage	.031 (.055)	-.069 (.118)	6.486 (2.214)***	.183 (.168)
Extra Millage	.001 (.043)	.070 (.121)	-7.214 (2.464)***	-.087 (.172)
Log of State Shared Revs (Statutory)	.077 (.146)	-.635 (.617)	-2.902 (8.381)	-.122 (.247)
Constant	8.785 (1.704)***	15.711 (6.836)**	202.102 (60.380)***	8.992 (2.483)***
Pseudo R <sup>2</sup>	.178	.276	.770	.222
Chi <sup>2</sup> (df)	553.04 (15)***	187.89 (16)***	593167.58 (8)***	216.76 (16)***
Log Likelihood	-187.503	-50.397	-3.830	-102.145
N (Observations)	387	103	39	235
N (Clusters, Counties)	24	23	21	24

Notes: Robust standard errors in parentheses. \*p<.10, \*\*p<.05, \*\*\*p<.01; two-tailed test. +p<.10, one-tailed test.

**Table 3: Extent of Cooperation on Police Services**

	All Units	Cities	Villages	Townships
<i>Government Structure/Powers</i>				
Total Municipalities in County, 2002	.017 (.007)**	.016 (.013)	.065 (.029)**	.015 (.008)**
Total Townships in County, 2002	-.010 (.008)+	.008 (.022)	.016 (.022)	-.021 (.010)**
Total Functions Not Provided by Unit	-.017 (.003)***	-.000 (.007)	-.013 (.005)***	-.020 (.003)***
City Manager	-----	-.170 (.254)	-----	-----
Home Rule Village	-----	-----	-.778 (.392)**	-----
Charter Township	-----	-----	-----	.126 (.231)
<i>Demographic Variables</i>				
Median Pop of Cities in County	.000 (.000)	-.000 (.000)	.000 (.000)	.000 (.000)
Median Pop of Townships in County	-.000 (.000)***	-.000 (.000)	-.000 (.000)***	-.000 (.000)**
Log of Unit Population, 2000	-.095 (.074)+	.239 (.182)+	-.723 (.205)***	.103 (.163)
Pop Change (%), 1990-2000	.005 (.002)**	-.000 (.005)	.004 (.006)	.006 (.003)**
Pop per Sq Mile, 2000	-.000 (.000)	.000 (.000)	.000 (.000)	-.000 (.000)
Pop, 65 & Older (%)	-1.539 (.792)**	-1.74 (1.645)	-1.702 (2.865)	-1.842 (1.471)
Pop, Nonwhite (%)	-.034 (.673)	.007 (.541)	17.221 (16.348)	.756 (.721)
Personal Income (Per Capita)	.000 (.000)	-.000 (.000)	.000 (.000)+	.000 (.000)
<i>Fiscal Variables</i>				
Log of Total Tax Levy	.044 (.058)	.027 (.093)	.117 (.195)	.000 (.133)
Unit Millage	-.014 (.011)	-.005 (.031)	.072 (.023)***	-.057 (.069)
Extra Millage	.008 (.016)	-.023 (.023)	-.005 (.042)	.063 (.064)
Log of State Shared Revs (Statutory)	-.083 (.055)+	-.325 (.106)***	-.006 (.127)	-.165 (.080)**
Constant	3.788 (.388)***	3.573 (.864)***	4.522 (.872)***	3.892 (.858)***
Alpha	.347 (.047)***	.134 (.072)*	.030 (.052)	.393 (.052)***
Chi <sup>2</sup> (df)	821.13 (15)***	202.49 (16)***	847.54 (15)***	165.09 (16)***
Log Likelihood	-994.646	-225.241	-107.251	-629.000
N (Observations)	386	102	46	237
N (Clusters, Counties)	24	23	21	24

Notes: Robust standard errors in parentheses. \*p<.10, \*\*p<.05, \*\*\*p<.01; two-tailed test. +p<.10, one-tailed test.

**Table 4: Collaborative Arrangements for Fire Fighting/Rescue**

	All Units	Cities	Villages	Townships
<i>Government Structure/Powers</i>				
Total Municipalities in County, 2002	.018 (.021)	-.015 (.057)	-.499 (.286)*	.000 (.031)
Total Townships in County, 2002	-.023 (.025)	.029 (.125)	-.359 (.232)+	-.006 (.028)
Total Functions not Provided by Unit	-.018 (.007)***	-.063 (.036)*	.041 (.057)	-.020 (.007)***
City Manager	-----	-.268 (.892)	-----	-----
Home Rule Village	-----	-----	1.556 (1.341)	-----
Charter Township	-----	-----	-----	.174 (.524)
<i>Demographic Variables</i>				
Median Pop of Cities in County	.000 (.000)	.000 (.000)	.000 (.000)*	.000 (.000)
Median Pop of Townships in County	-.000 (.000)	.000 (.000)	-.001 (.000)+	.000 (.000)
Log of Unit Population, 2000	-.703 (.358)**	-1.077 (1.532)	1.864 (2.017)	-.684 (.529)+
Pop Change (%), 1990-2000	-.010 (.009)	-.093 (.032)***	.159 (.042)***	-.013 (.012)
Pop per Sq Mile, 2000	.000 (.000)*	-.000 (.000)	-.007 (.002)***	.000 (.000)**
Pop, 65 & Older (%)	-9.263 (3.286)***	-10.353 (10.713)	-30.447 (24.556)	-9.169 (4.973)*
Pop, Nonwhite (%)	-.196 (2.040)	1.091 (2.789)	503.326 (226.148)**	-10.762 (6.430)*
Personal Income (Per Capita)	.000 (.000)	-.000 (.000)	.000 (.000)	-.000 (.000)
<i>Fiscal Variables</i>				
Log of Total Tax Levy	.023 (.226)	.236 (.827)	-1.689 (2.045)	-.005 (.250)
Unit Millage	.024 (.055)	-.144 (.166)	-.428 (.494)	.125 (.277)
Extra Millage	.028 (.052)	.162 (.192)	1.151 (.902)+	-.188 (.251)
Log of State Shared Revs (Statutory)	-.426 (.196)**	-.627 (.810)	1.470 (1.365)	-.656 (.249)***
Constant	11.315 (1.863)***	17.614 (4.793)***	16.000 (9.571)*	13.851 (3.023)***
Pseudo R <sup>2</sup>	.191	.290	.602	.205
Chi <sup>2</sup> (df)	213.46 (15)***	433.11 (16)***	3175975.20 (15)***	94.45 (16)***
Log Likelihood	-207.026	-41.304	-11.991	-123.970
N (Observations)	386	103	47	235
N (Clusters, Counties)	24	23	21	24

Notes: Robust standard errors in parentheses. \*p<.10, \*\*p<.05, \*\*\*p<.01; two-tailed test. +p<.10, one-tailed test.

**Table 5: Collaborative Arrangements for Fire Inspection**

	All Units	Cities	Villages	Townships
<i>Government Structure/Powers</i>				
Total Municipalities in County, 2002	.055 (.022)**	-.155 (.141)	-.256 (.122)**	.047 (.032)+
Total Townships in County, 2002	.002 (.025)	.574 (.237)**	-.202 (.122)*	.015 (.035)
Total Functions not Provided by Unit	-.022 (.009)***	-.129 (.105)	.000 (.031)	-.028 (.009)***
City Manager	-----	4.292 (1.921)**	-----	-----
Home Rule Village	-----	-----	-1.367 (1.239)	-----
Charter Township	-----	-----	-----	.535 (.559)
<i>Demographic Variables</i>				
Median Pop of Cities in County	-.000 (.000)	-.001 (.000)**	.000 (.000)+	-.000 (.000)*
Median Pop of Townships in County	-.000 (.000)	.001 (.001)**	-.000 (.000)	.000 (.000)
Log of Unit Population, 2000	-1.085 (.301)***	-2.849 (4.262)	-1.937 (1.991)	-.838 (.488)*
Pop Change (%), 1990-2000	.004 (.011)	-.179 (.116)+	.075 (.045)*	.005 (.011)
Pop per Sq Mile, 2000	.000 (.000)+	.001 (.000)	-.003 (.002)*	.001 (.000)*
Pop, 65 & Older (%)	-3.001 (3.593)	-13.958 (11.170)	2.653 (15.944)	-4.473 (4.900)
Pop, Nonwhite (%)	-1.302 (2.067)	-.463 (5.077)	207.003 (103.300)**	-8.344 (3.892)**
Personal Income (Per Capita)	-.000 (.000)	-.000 (.000)	.000 (.000)**	.000 (.000)
<i>Fiscal Variables</i>				
Log of Total Tax Levy	.220 (.258)	3.090 (2.024)+	-.562 (1.344)	-.007 (.336)
Unit Millage	-.006 (.053)	.243 (.378)	-.014 (.387)	.086 (.280)
Extra Millage	-.077 (.064)	.137 (.225)	-.058 (.561)	-.325 (.211)+
Log of State Shared Revs (Statutory)	-.528 (.230)**	-5.173 (5.834)	2.264 (1.902)	-.866 (.235)***
Constant	11.794 (2.746)***	30.461 (34.996)	-1.059 (9.625)	15.449 (4.072)***
Pseudo R <sup>2</sup>	.238	.662	.394	.241
Chi <sup>2</sup> (df)	165.56 (15)***	2847000.000 (13)***	14292.07 (16)***	78.57 (16)***
Log Likelihood	-183.871	-16.136	-19.537	-111.725
N (Observations)	387	103	48	235
N (Clusters, Counties)	24	23	21	24

Notes: Robust standard errors in parentheses. \*p<.10, \*\*p<.05, \*\*\*p<.01; two-tailed test. +p<.10, one-tailed test.

**Table 6: Extent of Cooperation on Fire Services**

	All Units	Cities	Villages	Townships
<i>Government Structure/Powers</i>				
Total Municipalities in County, 2002	.026 (.009)***	.008 (.016)	.027 (.026)	.018 (.017)
Total Townships in County, 2002	-.019 (.009)**	.050 (.032)+	-.094 (.019)***	-.013 (.013)
Total Functions Not Provided by Unit	-.013 (.002)***	-.016 (.010)+	.003 (.009)	-.014 (.002)***
City Manager	-----	-.562 (.304)*	----	-----
Home Rule Village	-----	-----	.017 (.306)	-----
Charter Township	-----	-----	-----	.391 (.163)**
<i>Demographic Variables</i>				
Median Pop of Cities in County	.000 (.000)	.000 (.000)	.000 (.000)***	-.000 (.000)
Median Pop of Townships in County	-.000 (.000)**	.000 (.000)	-.000 (.000)***	-.000 (.000)
Log of Unit Population, 2000	-.331 (.082)***	-.426 (.249)*	-.046 (.298)	-.291 (.132)**
Pop Change (%), 1990-2000	-.005 (.003)+	-.028 (.008)***	-.001 (.006)	-.003 (.004)
Pop per Sq Mile, 2000	-.000 (.000)	-.000 (.000)***	-.000 (.000)	.000 (.000)***
Pop, 65 & Older (%)	-3.326 (1.032)***	-2.664 (1.990)+	-4.907 (3.849)+	-4.129 (2.020)**
Pop, Nonwhite (%)	.276 (.602)	.888 (.415)**	10.286 (18.140)	-1.326 (.780)*
Personal Income (Per Capita)	-.000 (.000)+	-.000 (.000)***	.000 (.000)+	-.000 (.000)
<i>Fiscal Variables</i>				
Log of Total Tax Levy	.084 (.064)+	.266 (.182)+	.093 (.220)	-.046 (.065)
Unit Millage	-.000 (.014)	-.081 (.042)**	.019 (.050)	.049 (.058)
Extra Millage	-.015 (.019)	.044 (.035)+	.046 (.086)	-.088 (.056)+
Log of State Shared Revs (Statutory)	-.170 (.066)***	-.364 (.168)**	.002 (.170)	-.249 (.078)***
Constant	5.872 (.565)***	7.329 (1.491)***	2.64 (1.799)+	7.814 (.735)***
Alpha	.360 (.076)***	.294 (.131)**	.159 (.157)	.247 (.065)***
Chi <sup>2</sup> (df)	650.00 (15)***	825.93 (16)***	904.30 (15)***	513.59(16)***
Log Likelihood	-805.537	-184.759	-108.246	-480.465
N (Observations)	386	102	47	236
N (Clusters, Counties)	24	23	21	24

Notes: Robust standard errors in parentheses. \*p<.10, \*\*p<.05, \*\*\*p<.01; two-tailed test. +p<.10, one-tailed test.