

Managing for Less The Fiscal Attributes of Collaboration*

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Abstract

The benefits and costs of collaborations are often discussed in generic terms. Rarely do studies estimate the fiscal value of costs and benefits. This study begins to address this important issue by estimating costs, revenues and savings associated with interlocal agreements, and estimating the factors that contribute to higher or lower savings from local collaborations. Findings indicate these factors include attributes of the actual resources used in collaboration, characteristics of the agreements themselves, and qualities of the partnering local governments. Several implications for public managers are indicated in the conclusion.

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INTRODUCTION

There are many potential benefits of collaborative public management. Gray et al. (2003) suggest advantages for collaboration include synergy (the partnership adds value by combining mutually reinforcing interests), transformation (the partnership objective is to transform different views into an ideological consensus), and financial benefits (the partnership endures by maximizing resources). O'Leary and Bingham (2009, 7) suggest collaboration benefits include "organizational effectiveness and efficiency, such as the ability to buffer external uncertainties, share risks, achieve competitive advantages, generate cost savings, improve organizational learning, and produce higher quality services." Tschirhart, et al (2009) note that resources also can be the root of some of the challenges of collaboration. Agency managers in a public management network (PMN) incur organizing and transaction costs that are assumed directly by network members, especially in networks that evolve informally (Provan & Milward, 2001). Managers in a variety of networks identify several types of collaboration costs, including lost time and opportunity, human relations processing costs, and resource hoarding (the failure to commit resources to the network) (Agranoff, 2007). Whether viewed as a benefit or cost, these and other studies suggest that understanding resource issues is essential for understanding collaborations.

Even when a collaboration is explored to increase service effectiveness, someone is bound to ask the question: "How much will this cost the organization?" (Klitgaard & Treverton, 2004; Zeemering, 2008) If a collaboration is created to yield fiscal savings, how much savings ought they to expect, and what conditions the ability to achieve savings in collaborations? The answers to these questions are not straightforward because it can be difficult to explicitly assign dollar values to benefits and costs, especially when so many times

it is a matter of perception (Klitgaard & Treverton, 2004). Hence, it is not surprising that there has been little empirical research to measure the fiscal characteristics of collaborations.

This paper begins to fill this void by exploring the fiscal attributes of public management collaborations among local governments. The allocation of resources in a collaboration (financial, human and physical) may be critical for the management of a partnering arrangement (Gray et al., 2003, 44). There is potential for resource-related matters to dominate partnership decisions, especially when the motive for partnership is driven by a desire to access missing resource by getting it from a partner. “It is almost too self-evident to observe that partnerships take time and resources to manage,” Gazley (2008) remarks.

Our study focuses on the fiscal attributes of interlocal agreements, a longstanding form of collaboration between cities, counties, and other local governments. There are over 91,000 local government jurisdictions in the US in 2007, including more than 3,000 counties, and over 19,000 municipalities (U.S. Census, 2007); they are a rich laboratory of collaboration. Several studies have demonstrated that cities frequently participate in intergovernmental service delivery arrangements (Agranoff & McGuire, 2003; Agranoff & Pattakos, 1985; Bartle & Swayze, 1997; Coalition to Improve Management in State and Local Government, 1992; Deutsch, 1964; Friesema, 1971; Henderson, 1984; Jones, 1942; Marando, 1968; Meek, Schildt, & Witt, 2002; Morgan & Hirlinger, 1991; National League of Cities (NLC), 1995; Pagano, 1999; Shanahan, 1991; Studenski, 1930; L. Thompson, 1997; Thurmaier & Wood, 2002; U.S. Advisory Commission on Intergovernmental Relations (ACIR), 1985; Wikstrom, 2002; Wood, 2006; Zimmerman, 1974a, 1974b, 1976). While fiscal characteristics of local

governments are well researched, the fiscal characteristics of their interlocal collaboration are not.

We direct our attention here to the attributes of interlocal collaboration associated with saving money through collaboration, including the organizational resources used in the collaboration, the intensity of communication to manage the collaboration, the size of the collaborating local governments, and other factors. Disaggregating savings, what are the costs and revenues that might be realized in interlocal agreements (ILAs), and how might they vary according to the factors identified above? Our aim is to shed light on these questions using a statewide dataset of information collected about various types of ILAs. To our knowledge, this is the first systematic study of interlocal collaboration to this extent and depth. We conclude with observations about the nature of collaborative savings and efforts required to achieve savings from collaboration.

VARIATION IN LOCAL GOVERNMENT COLLABORATION

Although there are many ways to characterize public management collaboration (e.g., Agranoff, 2007; Milward & Provan, 2006; Wood, 2006), there are generally two primary foci. One focus of collaboration is to address transjurisdictional problems that bedevil solutions by any single public entity acting alone (Agranoff & McGuire, 2003; Frederickson, 1999; Milward & Provan, 2006; Thurmaier & Wood, 2002). Coordination and collaboration among first responders in emergency management is critical to service delivery, regardless of the related resource issues. The problems of responding to a natural or human disaster transcend jurisdictional boundaries and require a coordinated, multi-jurisdictional response to affectively address the needs of citizens and communities in the emergency (Waugh & Streib, 2006).

Other examples of these problems include environmental pollution in a river that transects multiple jurisdictions, the pursuit of criminals across municipal or county boundaries, or coordinated services to troubled youth who can live in multiple jurisdictions in a single year or whose services are delivered by multiple jurisdictions. This type of collaboration is designed to improve service delivery effectiveness.

Agranoff (2007, pp. 125-54) analyzes the knowledge management role of public management networks. The process of network collaboration produces explicit and tacit knowledge for members that was unavailable previously to individual partners. The participants “are in the business of making sense out of difficult, interagency problems and pointing to potential or possible solutions....Observations and experiences are exchanged, data are interpreted, learning experiences emerge, and tacit knowledge rises to the top” (153). The emergent tacit and explicit knowledge from the collaborations help them address the common problems and issues the partners are facing. Agranoff believes that much of the knowledge management function of public management networks “is less visible or lies beneath the surface, but is deeply imbedded in what the [public management networks] do” (154). He observes that “networks rarely make formal efforts to write up or codify the tacit knowledge they generate” (139).

Another focus for collaborative public management is economizing on the costs of public service delivery (Morgan & Hirlinger, 1991). Examples of these collaborations include cost-sharing for building a bridge that joins two jurisdictions, contracts for services delivered by a single metropolitan crime lab to avoid building and maintaining a crime lab in each jurisdiction within the metropolis, or contracts with a county sheriff to provide routine patrol

services to a small municipality to avoid the high costs of policing a small community. This type of collaboration is designed to save the collaborating partners money (Bartle & Swayze, 1997; Scanlan, 2005; Zeemering, 2008).

The different foci of interlocal collaboration are likely to engender different types of fiscal characteristics of collaborative agreements between partners. The collaborations focused on effectiveness are likely to have diffused benefits and costs among the partners, and the actual financial reckoning of these agreements may be difficult to determine. There are several possible reasons for this, including [1] savings are not an important feature of the collaboration, such as in economic development collaboration (Ashbacher, 2005); [2] the intangibility of the benefit, such as tacit knowledge generated by a network, makes it difficult to measure (Agranoff, 2007; Tschirhart et al., 2009); [3] the divisibility of the benefit, e.g., tacit knowledge versus shared snow plowing for a roadway (Agranoff, 2007); and [4] the high cost of information, that is, the time and energy to track benefits and costs may not be worth the benefit of knowing that information (Thurmaier & Wood, 2002).

For example, the costs for collaborating to provide continuous services to troubled youth may have diffused and unspecified costs throughout the participating organizations. The collaboration requires a commitment of personnel hours and resources by each collaborating partner. Unless the persons delivering services rigorously adhere to a system of logging work on each client in the collaborative agreement, as well as logging costs of phone calls, paper copies, and other supplies, it will be difficult for the collaborating organization to calculate the actual costs of participating in the collaboration. Moreover, the collaboration of working together generates tacit knowledge about the client that is available to all, owned by

none, and characterized by diffused costs and perceived benefits (Lavalee, 2005; J. Thompson, 2005). Finally, if a collaboration involves transfers of funds between partners, the transfers in can be treated as revenues, but the transfers out may inaccurately reflect (i.e., underestimate) the true cost of participation in the collaboration. Even if specific personnel (and their office supply costs) are dedicated to the youth services collaboration, the costs in personnel hours and office supplies of other offices in the organization may not be captured in a formal reporting system for the collaboration.

The costs and benefits of participating in an efficiency focused collaboration are likely to be more easily calculated for individual participating organizations. Since the focus of the agreement is economizing, partners are more likely to know the approximate cost of the service delivery when agreeing to collaborate in the first place. If the collaboration is a fee-for-service exchange between two local governments (for example, patrol services by the sheriff), then the fee can be set to recover the costs of service delivery. On the other hand, it is possible for the provider to accede to a concessionary fee to minimize the fee burden on the local government partner. For example, a very small municipality with very low tax capacity may be charged a minimal fee that does not cover more than a trivial amount of the cost of providing patrol services by the county sheriff (Scanlan, 2005). Zeemering (2008) finds elected officials are generally aware of and satisfied with the costs of interlocal contracts for purposes such as receiving fire services from neighboring municipalities. Formal contracts are able to yield predictable financial and service implications for local governments collaborating for these purposes.

Another example of cost-sharing as an agreement focus is when multiple government agencies at multiple levels agree to collaborate and share costs of building a bridge that may involve two states, two counties, and two or more municipalities. In this case, the cost estimates for the bridge construction can be fairly certain and the collaborating partners can reach an accord about how to share those costs. Still, the financial calculations of implicit tangible and intangible benefits to any single jurisdiction (as in a formal cost-benefit analysis for the specific jurisdiction) may be difficult to ascertain.

THE ROLE OF RESOURCES IN COLLABORATION

Collaborations require resource commitments by partners. Sometimes the resource investment is fiscal and sometimes it is a nonfiscal asset such as technical skills or tacit knowledge. Tschirhart et al. (2009) draw an important distinction between resource exchange and resource sharing. In the former case, partners exchange one resource (e.g., money) for another; a small municipality pays money to a sheriff's office and in exchange for the money, the sheriff provides expertise and equipment to the municipality in the form of traffic patrols for the municipal jurisdiction (Scanlan, 2005).

Resource sharing, in contrast, requires that each member of the collaboration has access to the same resources, and no single partner controls access to it by another partner. For example, Clive, Urbandale, and West Des Moines (Iowa) collaborate to provide a consolidated public safety dispatch facility (*Westcom*) that receives public safety related calls and dispatches police, fire and EMS for the three cities (Thurmaier, 2006). *Westcom* is physically located in West Des Moines' Law Enforcement Center, but the operation is co-

owned by all three cities. The policy oversight body for *Westcom* is a committee made up of representatives of the three cities and chaired by a city manager.

Various theoretical approaches prompt a closer investigation about the role of resources in collaborations. Resource dependency theory (RDT) suggests partners collaborate in a strategic desire to gain access to resources from a partner (Pfeffer & Salancik, 2003; Ulrich & Barney, 1984). The theory postulates that organizations try to gain greater power in relationships by reducing their dependence on other organizations and conversely increasing the dependence of other organizations on them. But there is a debate about the utility of RDT to explain collaboration participation. While resource dependency theory is often cited as an explanation for collaboration, Fleischman (2009) does not find it to be a strong predictor. Focusing on local governments adds complexity to the study of resource allocations in collaborations. For example, local governments may be able to identify scarce and desirable resources in neighboring communities, but they may be limited in their ability to alter their structure and activities to exploit the power relationships predicted by dependency theory. Wood (2006) finds that only half of the city administrators in interlocal collaborations reported that their city measured and evaluated the efficiency of intergovernmental service-delivery arrangements, suggesting resource dependencies were not at the heart of (at least) the other half of the collaborations.

Relational contracting offers an alternative model for understanding resource relationships between partnering local governments. Two-party collaborations in the public management context are akin to relational contracting, whereby interlocal agreements between units of government incorporate some degree of ambiguity to allow for building

working relationships built upon trust to improve the prospects for effective service delivery. Relational contracting moves beyond the traditional boundaries of organizations to develop bilateral governance to enhance public sector service delivery (Baker, Gibbons, & Murphy, 2002; Gordon & Ponomariov, 2006; Poppo & Zenger, 2002; Sclar, 2000; Wu & Roe, 2007).

Relational contracting begins with the recognition that each partner depends on the other, and the quality of trust between the organizations is the reference point for dispute resolution more than the actual contract itself (Sclar, 2000, 123-128). Van Slyke (2009, 151) observes that “trust development between parties has cost implications,” especially as trust is built through repeated interactions of successful collaboration. His study of contractual relationships between state governments and NGOs suggests that there are serious costs to partners who collaborate in a long-term continuous service project such as delivering multi-jurisdictional youth services or collaborating in a county-wide economic development program. Such collaborations favor flexibility over specificity in resource commitments because of the high degree of uncertainty in the projects. Conversely, a local government collaboration to rebuild a bridge may suffice with a transactional contract between partners that specifies the expected contribution from each party to the contract.

Gazley and Brudney (2007) note that costs of collaboration can include considerable institutional time and resources. One of the less understood aspects of building trust through repeated interactions of the partners is the cost of communication in collaboration. Communication occurs because individuals devote time and intellectual energy to the effort. Partners collaborating in economic development for a community, for example, need to share tips and leads with each other, query each other on knowledge about a given prospect, and

communicate to develop a shared strategy of courting the prospect using the tacit and explicit knowledge developed through all of these exchanges. Whether they use face to face meetings, emails, faxes, or other communication tools, they are contributing valuable personal and organizational hours each day to the collaborative effort. As important as the communication resource is to successful collaboration, we know little about the cost of collaboration communications to public managers. Communications is an important element of the transactions costs of interlocal collaboration (Feiock, 2002).

The division of collaborative agreements into these two broad categories is helpful but insufficient for ascribing fiscal characteristics to different types of local government collaboration. There are several dimensions of local government collaboration that may condition the fiscal characteristics of agreements. Fiscal characteristics may be different in collaboration for a one time project than when the collaboration requires ongoing and continuous commitment by partners.

SERVICE TYPES AND PARTNER CHARACTERISTICS

Fiscal attributes of collaborations may also differ by size and type of governments and across the rural-urban dimension of the partnerships. Partnerships by small cities may not be able to achieve the economies of scale of partnerships by larger cities. Rural local governments may incur higher communication costs for collaborations (including travel to joint planning meetings and such) than urban partners in close proximity. Savings may also depend on the type of governments in the ILA partnership. That is, city-city collaboration in a mutual aid agreement might produce more savings than a city-county agreement because the former tend to be relational partnerships and the latter a fee for service.

Finally, we should not expect to realize the same degree of savings in each type of public service delivery. Collaborative law enforcement services such as patrolling, housing *ex juris* prisoners in a jail, and providing crime lab services can produce efficiency gains for each partner. Many types of highway and public works collaborations can yield efficiency gains by sharing costs of bridge and highway projects. Likewise, mutual aid fire agreements can reduce the need for each collaborating jurisdiction to purchase expensive equipment and build more fire stations, in effect, allowing collaborating partners to share expensive fire equipment.

Emergency management collaboration, on the other hand, may actually increase costs for some or all of the partners as they strive to increase interoperability for improving service delivery effectiveness. Counties collaborating under state mandate to provide coordinated services to troubled youth may also experience increased caseload costs as they continue to provide services to youth who exit their county jurisdiction but not the collaborative service area (J. Thompson, 2005). Local governments collaborating in a jointly owned economic development corporation may increase expenditures for that service beyond what they might have invested in economic development alone (Ashbacher, 2005).

The local government managers involved in these different types of collaborations may perceive costs and savings differently, with managers in a long-term service collaboration overestimating long-term costs and underestimating long-term savings, while managers in a short-term building project may overestimate savings and underestimate the total costs to the organization of project participation. For example, the bridge project collaborators may only identify the financial costs in the contract, omitting the organizational and personal hours that will be required to participate in the collaboration.

Satisfaction is a heuristic way to assign value to the participating organization's efforts and resource contributions to the collaborative effort. Satisfied managers who enjoy a high degree of trust in a collaboration may overestimate savings and underestimate the total costs to the organization of project participation. Conversely, dissatisfied managers may overestimate the costs of personal and organizational efforts required for participation (since it is time unhappily spent), and underestimate the benefits of the collaboration, including diminishment of any fiscal savings. Thurmaier and Wood (2002) find that local governments in successful collaborations in metropolitan Kansas City simply do not keep track of this type of data and therefore have no idea whether they are saving money, or how much time an ILA might cost the personnel responsible for managing the agreement; costs and savings seem to have low salience in these collaborations.

RESEARCH QUESTIONS

In this current study, we want to explore how much local government units (LGUs) actually save by using an interlocal agreement (ILA) for service delivery, and what are the costs to participate and manage an ILA. Do LGUs save more on short-term projects with high capital costs (Sonenblum, Kirlin, & Ries, 1977), or more on ongoing agreements? Does savings depend on the type of governments in the ILA partnership? That is, do city-city ILAs produce more savings than city-county ILAs because the former tend to be partnerships and the latter a fee for service? Does savings depend on the type of service provided by the ILA (law enforcement versus bridge building)? Do regular face-to-face meetings of partners produce higher savings, even though it also may increase costs? In general, are the increased costs of higher commitments of personal and organizational hours rewarded with increased revenues

and savings? Table 1 summarizes the variables arising from this review and the hypotheses associated with each variable that we explore in this study.

[Insert Table 1 Here]

METHODOLOGY

This paper explores the principal research questions using data gathered from a 2004-2005 systematic statewide study of interlocal agreements in Iowa. A large, systematic study on a statewide level has the benefit over previous research of being able to probe more deeply into the managerial and fiscal aspects of ILAs, while controlling for such institutional variables as the structure of LGUs in a state, the revenue options and expenditure mandates by states on LGUs, the regulatory regime controlling ILAs (i.e., encouraging or discouraging them), and intergovernmental fiscal regulations. Probing the fiscal factors associated with ILAs within a single state can provide important insights into the underlying nature of ILA management. Future studies can then try to replicate these results in other states, testing hypotheses under different state legal institutions.

Interlocal agreements in Iowa are created under the authority of chapter 28E of the Iowa code (Iowa Code 2003). Hence, interlocal agreements in Iowa are usually referred to as 28E agreements. Under chapter 28E, interlocal agreements must be filed with the Office of the Secretary of State (OSS) and a county recorder.ⁱ The authors worked in cooperation with the Office of the Secretary of State, the Iowa League of Cities, the Iowa State Association of Counties, the Iowa City/County Managers Association, and the School Administrators of Iowa to survey all local government units (LGUs) with 28E agreements to determine the scope and breadth of agreements in Iowa, as well as the goals and management issues concerning 28Es.ⁱⁱ

The survey package was sent to the central contact point for each type of local government, either the county auditor, the city manager/city clerk, the school superintendent, or the fire chief. The survey package included a CD with two types of files. First, there were multiple TIF files (e.g. L006615.tif) that were scanned copies of each of the 28E agreements for the LGU. There was also a single PDF file on the CD that contained individual surveys corresponding to each of the 28E agreements (i.e., the TIF files). The LGU contact was asked to “distribute each survey and its corresponding 28E copy to the person who is responsible for managing the 28E program or project, if you are not that person.”

The survey frame includes the 28Es filed with the OSS between 1993 and July 2004 that has at least one city or county government in the agreement. All 99 counties have at least one 28E agreement during that time period. Out of 947 cities in the state of Iowa, 601 cities have at least one agreement filed with the OSS. The total number of agreements in the survey frame is 7,142. Each agreement in the survey frame has at least two parties to the agreement, where one of them is a city or county government.

We mailed or personally delivered surveys during the summer of 2004 and conducted follow-ups through summer 2005. Surveys were sent to the central contact point for each type of local government, either the county auditor or the city manager/city clerk. In total, we mailed 5,374 surveys to 99 counties and 4,358 surveys to 601 cities. We personally delivered the surveys for Polk County and the city of Des Moines, each with the largest number of 28E agreements for a county or city, respectively. Response rates calculated by the percentage of survey returned are approximately ten percent for counties and twelve percent for cities, respectively. The overall response rate for all surveys is approximately 11 percent.ⁱⁱⁱ

A more thorough investigation of response rate requires a perspective combining jurisdictions and level of collaboration both in the sampling frame and the sample. Interlocal collaboration is essentially a jurisdiction-based decision (Agranoff & McGuire, 2003; McNabb, 2009). Moreover, the level of collaboration as indicated by the number of 28E agreements tells us whether our sample represents the level of collaboration as exhibited in the sampling frame. Therefore, we adopt an analytical perspective of representativeness that groups local governments in terms of the level of collaboration, with a separate analysis of cities and counties. The results are presented in tables 2 and 3.

[Insert Table 2 Here]

The populations of cities and counties include the set of 601 cities and 99 counties (respectively) that registered at least one 28E agreement with OSS between 1993 and 2004. The middle column of table 2 presents the distribution of the population of cities by the number of 28Es filed with OSS between 1993 and 2004, and column 3 presents the distribution of the 75 cities in the sample by the number of 28Es filed with OSS in the same period. The county analysis is more straightforward; all 99 counties in Iowa registered at least one 28E with OSS from 1993-2004. The middle column of table 3 presents the distribution of the 99 counties by the number of 28Es filed with OSS between 1993 and 2004, and column 3 presents the distribution of the 20 counties in the sample by the number of 28Es filed with OSS in the same period. Note that none of the Iowa counties registered less than 17 agreements with OSS in the study period. Overall, our survey over-samples the jurisdictions that have a higher level of collaborative activity and under-represents jurisdictions with a relatively low level of collaborative activity, as reflected by the total number of agreements

that they have registered with OSS in the 1993-2004 period. This is more true for counties than for cities in our sample.

[Insert Table 3 Here]

An index of service codes categorizes agreements by the type of public service (Appendix A). The index is an amalgamation of services provided by a “full-service” city of 50,000 population and a GFOA award winning budget (Ames, IA) and services provided by a professionally managed county government with a GFOA award winning budget (Scott County, IA). Each of the agreements was coded as providing a single type of service. In some cases, agreements included multiple services (e.g., mutual aid response for fire and ambulance) and these were coded for the first service mentioned in the title.

Public works and law enforcement account for the two largest types of 28E agreements filed with OSS between 1965 and 2003. The Law Enforcement group (29 percent) includes traffic & patrol, jail, emergency management, and criminal investigations agreements. The Highways and Public Works group (29 percent) includes water systems, electric utility system, engineering, streets, sanitation, and other facilities. Together, these two groups account for 58 percent of the 1322 agreements in the survey response data. This distribution is consistent with Henderson’s (1984) survey; he finds the most frequent areas of cooperation are public works and utilities, public safety, health and welfare, finance, and general government. Half of the sample agreements were filed before 1999 and half of them after. Survey data suggests that about 75 percent of the 28E agreements filed with OSS are ongoing relationships (compared with about 25 percent that are short term project agreements).

The dependent variables of fiscal factors associated with 28Es were measured by three questions related to monetary costs, revenues, and savings.

Costs and Benefits of 28e Agreements

I estimate the annual costs for our participation in the agreement is: \$ _____

I estimate the annual revenues gained from our participation in the agreement is: \$ _____

I estimate the annual savings gained with participation in the agreement is: \$ _____

A preponderance of the respondents left the answers to these questions blank, and a large number of those who entered a value indicated that the costs, revenues, and savings from their agreements were zero. We speculate that the four challenges to accounting for explicit costs and benefits (and savings) we identified earlier explain much of the missing value problem (with very little attributable to respondent fatigue). Consequently, we expect that the ILA manager either did not know the true costs, revenues, and savings of the agreements, or (more likely) did not think them significant enough to record as a value. Future research will need to deal with this problem. For now, we analyze the 300 plus responses that recorded an answer to these questions.

The large number of \$0 responses, however, invalidates simple OLS regression as an analysis tool. The preferred technique for a data set with a long tail of zero values is a TOBIT model for analyzing censored regression problems (Tobin, 1958). We report the results of three TOBIT models, one each for costs, revenues, and savings, each regressed on the variables presented in table 1.

FISCAL ATTRIBUTES OF LOCAL GOVERNMENT COLLABORATIONS

Descriptive Statistics

We are interested in what fiscal factors may account for the success of interlocal agreements. For example, how much does saving costs relate to “success” of an ILA? The most striking aspect of the data presented in table 4 is the wide range in the costs and benefits associated with the sample agreements. The variable means are highly influenced by the extreme values for each measure; this is very evident if we compare the mean and the trimmed (5 percent) mean. The differences are large. The estimated savings gained from participating in an agreement averages \$ 25,286, but is only \$1,243 once the range is trimmed by 5 percent. We note also that the median value for all variables is \$0. At least half of the agreements cost nothing, bring in no revenue, have no quantifiable annual savings, require no personal hours of work by the ILA manager, nor other work hours by other personnel in the manager’s unit. At the same time, it is important to note that some agreements have annual revenues of \$22 million, while others cost \$2 million for participation. Some agreements are saving about \$2.5 million annually.

[Insert Table 4 Here]

TOBIT Analysis

A principal contribution of this analysis is the ability to assess the independent contribution of the various factors to the fiscal characteristics of the interlocal agreements. As seen in table 5, costs, revenues, and savings are driven by their own unique set of factors. Overall, the cost and revenue models produce acceptable pseudo R-square for OLS, but the savings model is a

weak performer. All of the models have low pseudo R-square for TOBIT. Only significant variables are presented.

[Insert Table 5 Here]

Costs

Estimated costs are positively associated with the level of face-to-face communication effort [Regular (+), Adhoc (+)], the frequency of other contacts [Email (+)], and the need for on-going management [On-going (+)]. Costs diminish for more frequent contact by fax [Fax (-)].

The results indicate managers in local collaborations should be aware of communication needs and the management costs of on-going collaboration needs.

Revenues

Estimated revenues is positively associated with personal [Hours (+)], frequency of contacts by fax [fax (+)], and organizational time commitment [Hours (+)] and overall satisfaction [Satisfy (+)]. On the other hand, city-city partnerships generate less revenue than non city-city partnerships. The revenue model results imply that ILA managers view revenue as compensation for time spent by local governments and their managers, and that the kind of local government partnerships affects the revenue potential of a collaboration. It is interesting that satisfaction is related to revenue but not cost.

Savings

The estimated collaboration savings is positively associated with both the frequency of regular face-to-face meetings as means of communication [Regular (+)] and overall satisfaction with the agreement [Satisfy (+)]. The model indicates that the key to savings is regular face-to-face communication.

Service Type

The only distinction that appears across service types in any of the models is that transportation agreements are associated with both higher costs [Transportation (+)] and higher estimated savings [Transportation (+)]. The transportation result in itself is not surprising, as local governments often have clear budgeted contributions to regional transportation infrastructure (buses, trains, airports) while also saving funds because they do not need to create an entire infrastructure of their own. On the other hand, we expected to find more distinctions across service types, given the differences in resource demands by different types of public services.

Partners (Control Variables)

Although urbanization was not a significant predictor in any of the models, larger population governments (city or county) consistently yielded lower costs, revenues, and savings.

DISCUSSION AND CONCLUSIONS

This research is an important contribution to help build a richer theoretical understanding of public management collaboration. Ascribing more specific fiscal attributes to collaborations moves theory building beyond general statements about resources to more specific roles and relationships of those resources to common outcomes promoted as benefits of collaborations, including savings. Our findings provide several contributions to collaboration theory.

First, financial attributes of collaborations are related to a rich array of conditions that have fiscal implications for collaborations, including the types of governments involved, characteristics of the agreements themselves, the type of public service provided by the collaboration, and the population size of the governments involved. Second, the key to managers saving money in collaboration is regular face-to-face communication. This result

stands alongside the finding from the costs model that suggests regular face-to-face communication also contributes to higher costs of the collaboration. And while higher costs are not associated with collaboration satisfaction (an inclination to use an interlocal agreement for a similar service), satisfaction is related to both higher revenues and higher savings from collaborations.

Third, managers should pay heed to the actual costs and benefits of collaboration, even if they are difficult to measure. The communication required to build trust through repeated interactions with partners (Agranoff, 2007; Feiock, 2002; Gazley & Brudney, 2007; Tschirhart et al., 2009; Van Slyke, 2009) requires a commitment of personal and organizational hours, which can be translated into dollars—but it actually may be elusive to articulate benefits (savings) and costs in actual dollar terms in many cases. Communication is important in relational contracting and other collaborations, but that means personal involvement in building relationships that bring both tangible and intangible benefits to the organization.

Fourth, these are the first concrete fiscal estimates of costs and benefits of collaborations; the issue of missing data needs further thinking and experiments in how to develop survey techniques that test our conjectures about why the collaborating managers did not specify amounts in their responses.

This research also contributes to building collaboration theory by focusing attention on the vast numbers of horizontal collaborative efforts among the thousands of local governments (especially cities and counties). This complements the public management network research involving intergovernmental collaboration in a vertical dimension, usually involving state-local, federal-local, or all three levels of government. Because local

governments far outnumber state and national governments, collaboration scholars should include more studies that focus on horizontal collaborations of local governments as we build theory on PMNs and public sector collaboration.

At the same time, this study is an important contribution to the small but growing area of interlocal agreement (ILA) research because ILA studies often fail to distinguish carefully between the different types of agreements. Our study identifies agreement features (i.e., the nature of the partnership, the project or program focus, and the service type) that researchers should heed when they study ILAs. While the current study cannot address all of the issues in local government collaboration, we have explored some important issues and developed propositions for further research by other scholars.

The conclusions to be drawn from the three TOBIT models are constrained by some important limitations. First, the data from a single state need replication elsewhere to increase generalizability. Second, service type needs to be recoded or disaggregated into more discrete types of services. At a minimum, for example, the model might distinguish between emergency management services (a service likely provided in a network fashion) and patrol services (likely provided in a (perhaps relational) contract fashion. Highway and public works services that are project oriented (construction projects) might be disaggregated from more long-term, continuous collaborations such as street clearing.

There are many avenues to pursue for further research about the fiscal attributes of local government collaborations. A survey instrument that can elicit more specific and quantifiable benefits and costs could lead to a richer understanding of the factors that

contribute to costs, revenues, and savings. More generalizability will be gained by replicating this study in more states and states with greater diversity in the urbanization measure.

Endnotes

ⁱ Historically, the OSS staff has registered the agreements with a barcode and then archived the papers in a box; when enough boxes had been collected in the office, the stack has been sent to the state archives. The Public Policy & Administration Program at Iowa State University (ISU) received funding from the LowAccess Advisory Council (Department of Administrative Services) to develop a project to transform static archives of interlocal agreements in Iowa into a dynamic database accessible on the internet. To search the database of interlocal agreements in Iowa, visit [www.sos.state.ia.us/search/corp/\(S\(1j0zyx55qeaiez55i4figauk\)\)/corp_search.aspx](http://www.sos.state.ia.us/search/corp/(S(1j0zyx55qeaiez55i4figauk))/corp_search.aspx). You may be required to create a userID to access the database.

ⁱⁱ The survey focused on 28Es filed with OSS between 1993 and 2004, and only on interlocal agreements. State-local 28Es, and agreements between state agencies (together about a third of all 28Es filed with OSS) were excluded from the survey frame.

ⁱⁱⁱ This low response rate is likely the result of the following. First, the survey requires a significant investment of time and energy by the responding local government. The main contact, a county auditor or city clerk/manager needs to find the person who is most knowledgeable about a specific agreement. Some coordination is required as a vast majority of local governments surveyed have more than one agreement. Moreover, the survey is eight-pages long with a good number of questions that require information gathering. Another complication is that filling out surveys is probably low on local governments' priority lists.

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Table 1. Research Variables and Associated Hypotheses

Aspect	Measure	Cost Hypothesis	Revenue Hypothesis	Savings Hypothesis
Partnership	City-City, City-County, County-County	Costs higher with ILAs between levels than at same level.	Revenue lower with ILAs between levels than at same level.	Savings more likely with ILAs between levels than at same level.
Satisfaction	Inclined to another agreement	Costs lower with satisfaction than not.	Revenues higher with satisfaction than not.	Savings higher with satisfaction than not.
Service Type	Police, Fire, Public Works, etc.	Service types involving between level services (e.g., police) have higher costs than same level cooperation.	Service types involving between level services (e.g., police) have lower revenues than same level cooperation.	Service types involving between level services (e.g., police) have higher savings than same level cooperation.
Duration	Short or Continuous	Short term have higher costs than long term.	Short term have lower revenues than long term.	Short term have higher savings than long term.
Location	Rural or Urban Government	Urban LGUs more likely to have lower costs than rural.	Urban LGUs more likely to have higher revenues than rural.	Urban LGUs more likely to have savings than rural.
Size of Government	Population	Larger LGUs have lower costs..	Larger LGUs have higher revenues.	Larger LGUs have higher savings.
Communication Email Fax Face to Face Regular Ad hoc	Frequency of Contact	Higher costs with regular face to face than with other types	Higher revenues with more frequent communications, all types	Higher savings with regular face to face than with other types
Resources Personal Organizational	Hours/year	Higher costs with higher resource uses	Higher revenues with higher resource uses	Lower savings with higher resource uses

Table 2. Representativeness of Responding Cities.

Level of Collaborative Activities (Number of ILAs of a single city)	Percentage of population cities in a particular category that received at least one survey (N=601 cities; 4,358 surveys)	Percentage of sample cities in a particular category that returned at least one valid survey (n=75 cities; 537 surveys)
1	20.5%	10.7%
2	19.5%	20.0%
3-4	22.6%	14.7%
5-8	17.1%	24.0%
9 or more	20.3%	30.6%
	100.0%	100%

Table 3. Representativeness of Responding Counties.

Level of Collaborative Activities (Number of agreements of a single county)	Percentage of Iowa counties in a particular category that received at least 1 survey (N=99 counties; 5,374 surveys)	Percentage of sample counties in a particular category that returned at least 1 valid survey (n=20 counties; 545 surveys)
0-16	0.0%	0.0%
17-30	19.2%	0.0%
31-37	20.2%	25.0%
38-44	21.2%	25.0%
45-61	20.2%	15.0%
62 or more	19.2%	35.0%
	100.0%	100.0%

Table 4. Descriptive Statistics for Dependent Variables.

	Estimated annual costs for participating in the agreement	Estimated annual revenues gained from participation in the agreement	Estimated annual savings gained from participating in this agreement
Mean	\$ 26,500	\$ 46,373	\$ 25,286
5% Trimmed Mean	\$ 3,490	\$ 1,423	\$ 1,243
Std. Deviation	\$ 144,946	\$ 907,133	\$ 211,108
Median	0	0	0
Minimum	\$ 0	\$ 0	\$ 0
Maximum	\$2,000,000	\$ 22,000,000	\$ 2,500,000
Range	\$2,000,000	\$ 22,000,000	\$ 2,500,000
Interquartile Range	\$ 1,000.00	\$ 0	\$0

Table 5. Estimated Costs, Revenue, and Savings of Interlocal Agreements

	Model 1 Estimated Costs	Model 2 Estimated Revenue	Model 3 Estimated Savings
Independent Variables	(N = 335 Non-zero:159)	(N = 320 Non-zero:111)	(N = 285 Non-zero:61)
<i>Resources</i>			
Personal Hours Spent (Annual)		Hours (+)*	
Organization Hour Spent (Annual)		Hours (+)**	
Frequency of Contact (by means of)	Email (+)* Fax (-)**	Fax (+)*	
Frequency of Face-to-face Communication (by means of)	Adhoc (+)* Regular (+)**		Regular (+)*
<i>Agreements</i>			
Partnership (City-city, city-county, county- county, others)		City-City (-)*	
Project (on-going, one-time)	On-going (+)*		
Satisfaction (inclination for using 28E for a similar service)		Satisfy (+)**	Satisfy (+)*
Service Type - law enforcement - fire services - highway and public works - transportation - community & neighborhood services - general management - court and legal services - elected officials, boards, and commissions	Transportation (+)***		Transportation (+)***
<i>Partners</i>			
Urbanization (Urban influence code)			
Population (natural log)	Pop (-)*	Pop (-)**	Pop (-)*
(Adjusted R-square OLS)	(.22)	(.37)	(.05)
Pseudo R-Square for Tobit	(.031)	(.051)	(.033)

*p < 0.05, ** p < 0.01, *** p < 0.001

Appendix A. Service Codes for Public Services

Service Type	Including:
Law Enforcement	
Police Protection	Patrol, Pursuit, tickets, crowd control, parking
Jail & Corrections	inc prisoner transfer, juveniles, community corrections
Emergency Management	inc 911, ambulance and emergency management
Criminal Investigations	including detectives, crime labs, drug enforcement
Fire Services	
Fire Response	
Hazmat Response	
Highways & Public Works	
Water System	including water, wastewater, storm water systems, utilities, wells
Electric & Energy Systems	including utilities, resale of power, gas utilities
Engineering	
Facilities	
Street & Road Systems	including bridges, streets, signaling, right-of-way, RR crossings
Sanitation	
Other	including golf courses, flood projects
Transportation	
Public Transit	
Airports	
Motor Vehicles	including driver licensing, car registration
Other	including railroads
Community & Neighborhood Services	
Parks and Recreation	including hunting and fishing licenses, conservation programs
Library Services	
Health	including mental health, hospitals, substance abuse, animal control, well regulation
Housing	including public housing, housing assistance, Sect 8
Economic Development	including tourism, business promotion, unemployment/job services
Planning	including building permits, zoning, inspections, other planning
Other	including elderly services, child support collections
General Management	
Information Services	
Purchasing Services	
Risk Management	
Fleet Services	
Finance & Tax Administration	
Court and Legal Services	
Elected Officials, Boards, & Commissions	
Education	including boundaries agreements, changing boundaries, voter registration any education service, inc school resource officers, transportation, but EXCLUDES workforce development/job training (filed under economic development)