Concurrent Sourcing in the Public Sector: Contracting and Agent Strategies to Manage Risk

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Abstract

Public administration theory has given too much emphasis to the public/private delivery dichotomy when empirical studies show increasing attention to mixed contracting, 'make and buy,' as a strategic management choice. Drawing from the private sector management literature on concurrent sourcing, we use national survey data on US local governments to show that mixed delivery is an effective strategy to reduce contracting risk in public sector contracting as well. Contracting strategy (mixed or total) is complemented by choice of contract agent. Public managers face a broader range of contracting agents (both private for profit and public inter-governmental) than private sector managers. We find mixed contracting is more common with for profit agents and total contracting out is more common in contracts to other governments. Contracting with public partners is less risky due to greater goal congruence, so mixed delivery with public partners is not needed. When contracting with for profit partners, mixed delivery helps reduce risk, promote competition, and ensure attention to citizen interests.

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Introduction

Earlier studies in the field of public administration recognize the fact that local governments do not always perceive the make or buy decision with respect to their public service sourcing choices as a clear dichotomy. They sometimes make and buy the same service simultaneously. In other words, local governments may, when considering the better alternative for service delivery, both contract the delivery of the service to an external supplier, and at the same time produce and deliver the service by their own means (Warner and Hefetz 2008; Miranda and Lerner 1995; Stein 1993). In this study we explore the trends of this mixed delivery alternative and focus on its possible sources and some potential explanations. We employ several theories from management and organization sciences as well as public administration that may provide a better framework for understanding this mixed delivery alternative.

We first depart from the common consensus among organization and management scientists on the division between make and buy. A firm decides whether to expand its own internal production activity or to rely on market transactions for inputs based upon the investments it makes in the production process and the internal versus external governance capacities it builds (Williamson 1991). This indicates whether the firm will make or buy inputs, but does not predict the concurrent sourcing option. However, more recent examinations of firm interactions with markets argue that not only is a mixed 'make and buy' approach observed, there might be broader theoretical grounds for predicting such behavior (Puranam, Gulati and Bhattacharya 2008; Parmigiani 2007; Bradach and Eccles 1989).

In the public sector, where public organizations such as local governments deliver services to citizens, this make or buy dilemma occurs whenever alternative delivery methods are available to complement traditional internal in-house production and delivery (Levin and Tadelis 2010; Brown and Potoski 2003a; Warner and Hefetz 2003; Nelson 1997; Stein 1990; 1993). The mixed alternative, the 'make and buy' delivery option, is quite common among US local governments and grew dramatically in 2002 (Warner and Hefetz 2008). In this research we look at the most recent data for 2007 and explore the two most common outsourcing alternatives that are mixed with public delivery: private markets of contracts with for-profit suppliers and public markets of contracts with other governments. The goal of this study is to make a distinction, first, between these two broad strategic approaches, make or buy and make and buy, and then to distinguish between the two major alternative market providers, for profit firms or other governments, based upon the characteristics of the service and the characteristics of the environment in which the government provides services. We explore the relationship between the characteristics of the government organization, the service mix and the market conditions in the local community. We then investigate how local government managers' decisions are adjusted to respond to the needs created by service characteristics and market conditions.

The decision to engage with markets is based upon internal and external governance capacities. However, this decision is also dependent on market properties such as level of

competition and provider availability. Public and private markets differ one from another in the level of uncertainty and the level of stability they provide. For most private firms, the choice between markets is mainly a question of location, distance, or availability over time (Bradach 1997; Heide 2003), but for local governments when contracting out the delivery of public services, stable delivery is at least as important (Boyne and Meier 2009: Brown, Potoski and Van Slyke 2008; Warner and Bel 2008; Lamothe, Lamothe and Feiock 2008; Hefetz and Warner 2007), thus public markets maybe the better solution for contracting out, when private markets are less stable.

We use the most recent evidence on local government service delivery collected by the International City and County Management Association (ICMA) to assess the nature of mixed delivery in comparison to services that are completely contracted out. Looking over the last four surveys (conducted every five years from 1992 to 2007), we note that mixed delivery, make and buy, is primarily associated with for profit contracts, while totally contracting out, the buy option, is primarily associated with inter-governmental contracts. This raises the need to also look at the nature of the agent in the market – whether it is a for profit firm in the private market, or another government in the public market. Thus, our analysis adds to the existing understanding of the 'make and buy' literature by exploring the nature of the contract agent. Mixed delivery is used as a management strategy to reduce risks based on market, service and agent characteristics (Farneti and Young 2008). This is more important for for-profit contract agents but less needed as a risk management strategy when contracting with other governments because inter-governmental relations are more cooperative and create long term relational arrangements (Warner 2011). Our research will explore theoretically and empirically why choice of mixed delivery (especially among for profit agents) and attention to agent type (e.g. inter-governmental) are used as risk management strategies.

Literature Review

The market paradigm of public service delivery offers a substitute to the traditional public administration framework (Hood 1991; Osborne and Gaebler 1992). Governments that contract delivery of public services to private firms were expected to benefit from market efficiencies and lower costs. However, despite growing political support for outsourcing, empirical studies do not find clear cost savings (Bel, Fageda and Warner 2010; Boyne 1998; Domberger and Jensen 1997). Moreover, the outsourcing decisions show a stronger association with traditional public management rather than with new market approaches (Miranda and Lerner 1995). Miranda and Lerner (1995) analyze the mixed sourcing alternative and conclude that this "redundancy" helps to improve government control over the contract and to avoid possible monopoly expenses, and thus may be more efficient in comparison to totally contracted cases. They did not find that "redundancy" is the consequence of budget maximizing bureaucrats, as expected by public choice theory (Niskanen 1971). Several authors have used a transaction cost framework to suggest that such joint delivery may reduce transaction costs of contracts (Brown and Potoski 2003b; Brown, Potoski and Van Slyke 2008; Lamothe, Lamothe and Feiock 2008), yet within this

theoretical framework mixed delivery is a default rather than a strategy. In other cases this mixed delivery may be a form of public-private enterprises that combine the benefits of private management with public interests to create a hybrid organizational form (Bel and Fageda 2010). These mixed firms can take advantage of economies of scale and scope and offer a more stable form of privatization (Warner and Bel 2008; Bognetti and Robotti 2007).

In the United States, mixed firms are uncommon but mixed contracting is common and grew dramatically in 2002. A study of mixed delivery from 1992 to 2002 in the US found that mixed contracting was used both to maintain competition in the market and to ensure attention to citizen satisfaction (Warner and Hefetz 2008). Mixing internal and external delivery of public services creates a middle way between market and public approaches. More recent work explores the private sector experience with mixed contracts and recognizes the limits of transaction costs in explaining the mixed 'make and buy' alternative and provides more comprehensive theoretical grounds for concurrent sourcing (Mols 2010; Mols, Hansen and Villadsen 2011). We explore these theoretical grounds and their relevance in understanding mixed delivery in public services.

The power of transaction cost theory in explaining the nature of the firm (hierarchy) within markets (Coase 1937), is mainly based on the make or buy dichotomy (Williamson 1981; 1991). The theory clearly distinguishes a point from which the firm will prefer buying its inputs from external market providers due to efficiency concerns, whereas up to that point the firm builds on its own internal hierarchical production process. This point is the intersection between internal and external governance costs and level of assets required for the production and provision of these inputs (Williamson 1981; 1991). Although Williamson (1991) defines a hybrid form of the firm, this form is mainly meant to explain the state of unclear boundaries between the firm and its partner (Puranam, Gulati and Bhattacharya 2008). Questions can be raised as to what extent inputs are contractible, and what might be the effects of internal reactions to external contracts (Dow 1994). Internal governance costs and external costs of contracts are not linear. Furthermore, what if the firm decides to make and buy the same input simultaneously? These decisions challenge the exclusive make or buy options.

Bradach and Eccles (1989) suggest that the make or buy decisions are not mutually exclusive. They describe the three core mechanisms of markets and hierarchies: price, authority, and trust as possibly mixed, or in their words: "The trust produced by these social structures does not simply replace market and hierarchy; frequently it complements the two forms" (Bardach and Eccles 1989, p. 98), so that what is considered a distinct control mechanism in the market (prices) or the within the firm (authority) is used by the firm for the same function at the same time. This suggests the benefits of operating the firm simultaneously via market contracts and by internal hierarchy exceed the benefits of any distinct make or buy choice (Gulati and Puranam 2006). These concurrent control mechanisms allow the firm to exchange innovative ideas between the two forms and prevent higher specialization of each, which may lead to higher monopoly power either within the firm or between the firm and the market (Bradach and Eccles 1989; White 1985).

Empirically, we can see evidence that illustrates this concurrent sourcing option from different industries. For example, He and Nickerson (2006) suggest that simultaneous 'make and buy' is chosen in order to increase efficiency, increase the range of service types, and improve market spatial position in the trucking business. The problem of deadheading in the trucking service calls for a creative solution. Firms outsource those hauls that end in the contractor hub. These types of contracts enable trucking firms to grow spatially, so the costs of concurrent sourcing are learning costs in terms of getting better information on the market. Another study looks at small-firm sourcing patterns and asks whether the mixed strategy is a distinct choice or a result of a continuum along the make or buy options (Parmigiani 2007). A mixed strategy according to both transaction cost and production cost theories may represent a possible continuum, but the two discrete options rest at the ends of this scale. This continuum may result from possible uncertainties or lack of market information.

Parmigiani (2007) argues that concurrent sourcing is a distinct strategic decision. She uses transaction cost economics to argue that a mixed strategy may be preferred linearly with regard to levels of asset specificity. When it is difficult to specify assets, in-house production is more efficient and outsourcing becomes riskier. Moderate difficulty to specify assets calls for concurrent sourcing (Parmigiani 2007). Market uncertainties lead to increases in internal production, but they also provide reasons for simultaneous sourcing as a risk management strategy.

Another important factor that impacts the outsourcing decision is the level of firm expertise. The firm may choose concurrent sourcing if it lacks full in-house production skills. This way the firm reduces learning costs (Jacobides and Billinger 2006). Parmigiani (2007) finds that firms' tendency to make and buy simultaneously, expresses the desire to produce efficiently, to monitor suppliers, and to improve processes (learning). Bradach (1997) in an earlier study of restaurant chains finds this same behavior when comparing company stores, franchises, and plural-form (franchise/owner mix) stores. He shows how the plural form of service improves both central expertise for the company and local expertise for franchisers. Similarly to Jacobides and Billinger (2006), Bradach (1997) emphasizes labor relations as a key factor in the decision to make, buy, or to do both. The company is built of hierarchical labor relations, while outsourcing increases the small business effect. In other words, franchises are less bounded by central hierarchies (Bradach 1997).

Transaction cost economics relaxes some economic assumptions about the expected behavior of economic agents (utility maximizing) and returns to scale (Coase 1937). Concurrent sourcing, or any other term that describes the choice to make and buy simultaneously, relaxes the make or buy continuum and emphasizes an alternative choice in between which benefits from both (Puranam, Gulati and Bhattacharya 2008). The level of a firm's concurrent sourcing depends on the complementarities between the organization and its business environment, and the organizational constraints (barriers to exit) that limit pure contracts and impose a minimum, indispensable level of internal production (Gulati and Puranam 2006). Complementarities refer to improvements and enhancements of firm performance as a result of internal and external relations (Bradach and Eccles 1989; Milgrom and Roberts 1995). Two major types of complementarities are involved in firm procurement

decisions: knowledge and incentives. Knowledge complementarities are improvements in expertise (the learning process), and incentive complementarities are improvements in incentive strategies (the allocation process) (Gulati and Puranam 2006). That is, the mixed strategy represents not only the specific characteristics of the input, but a broader set of firm and market characteristics.

Several predictions arise from these complementarities: concurrent sourcing levels increase with complementarities and decrease with transactional hazards. In cost-benefit terms, complementarities generate benefits, but transactions generate costs. Concurrent sourcing is more likely to be the choice if both complementarities and constraints exist. Otherwise, a choice between the two ends is made with respect to the relative advantages of each end.

We have shown that organizational and management theories have gone far beyond the make or buy dichotomy and provide a strong conceptual framework for concurrent sourcing as an option with empirical evidence from various industries. In public-sector outsourcing policies the debate is between the two ends which fails to accept the fact that to do both is sometimes more efficient. Concurrent sourcing as the preferred strategy may provide the flexibility required to adopt continuous reforms, while reducing possible conflicts with existing arrangements.

Overall, the sourcing decisions local governments make differ from the private sector decisions in two important respects: first, local governments, as providers of commonly consumed services, must interact with citizens in order to design the better service with respect to local needs (Christensen and Laegreid 2002); second, local governments may contract to both private market suppliers of public services, or they may contract to public suppliers such as neighboring local governments or authorities. Public markets of neighboring local governments are more stable and, although external monitoring means are less effective to control these mutual agreements (Marvel and Marvel 2008), internal complementarities exist in common organizational frameworks, legal constraints and a level of trust (Warner 2011; Krueger, Walker and Bernick 2011; LeRoux, Brandenburger and Pandey2010; Feiock and Carr 2001). This makes contracts to public markets less risky and thus use of concurrent sourcing is less necessary under inter-governmental arrangements. Use of inter-governmental contracting increased significantly in the US in 2007 (Hefetz, Warner and Vigoda-Gadot forthcoming; Warner 2011). We expect inter-governmental contracts to be more commonly found at the buy end of the spectrum, totally contracted services, than under mixed delivery or concurrent sourcing.

Several sources of risks can be seen in the outsourcing process. First, the structure of the markets indicates the accessibility to private supply for municipalities. If markets are unstable and less accessible, efficiency gains may be lost (Girth et al. forthcoming; Johnston and Girth 2012). Second, potential cost savings depend on both the existence of competitive markets and the level of local governments' managerial capacity. Unstable contracts result from lower monitoring capacity and impose unexpected costs of contract failures (Amirkhanyan 2010; Kelman 2009; Hefetz and Warner 2004; 2007; Brown and Potoski 2003a). Third, heterogeneous municipalities are less attractive to private providers. Even

public markets are better formed across homogeneous governments rather than heterogeneous ones (Andrews 2011; De Witte and Geys 2011; Warner 2006; Warner and Hefetz 2002; Frug 1999). Fourth, given the emphasis on local identity, markets may be less responsive to local voice and erode local identity that is expressed in the middle level of professional public decision makers that is often lost with outsourcing (Johnson and Molloy 2000; Palma, Pima e Cunha and Lopes 2010). A possible response to these risks may be mixed contracts, where local governments manage their sourcing strategy to mitigate risks while interacting with markets.

To complete this theoretical framework we suggest two competing public administration paradigms, the market paradigm heralded by New Public Management (NPM) (Osborne and Gaebler 1992; Hood 1991), and the service paradigm heralded by New Public Service (NPS) (Warner 2008; Denhardt and Denhardt 2003). We follow recent studies that test the associations between these alternative paradigms and the contracting decision (Mols, Hansen and Villadsen 2011; Warner and Hefetz 2007).

The learning process in public administration suggests a shift from the market versus hierarchy debate to a broader discussion of a middle way between the two paradigms. Additional central governance is necessary to control and regulate markets for public services. The market mechanism needs a central governance control (Osborne 2010). Mattisson and Thomasson (2007) have stressed the importance of strategic learning among public managers to build competence and capacity as a purchasing organization. Johnston and Girth (2012) have shown how public managers devote considerable resources to managing the market – creating competition – and this often comes at the expense of monitoring. At the same time, the service paradigm, which builds on traditional hierarchical control, benefits from a broader community-based responsibility for public services based on citizen interactions with the government on a democratic basis (Nalbandian 2005; Denhardt and Denhardt 2003; Frug 1999). The political learning process of administrative reforms recognizes the importance of democratic interactions between all social agents (Dhameja 2003; Vigoda 2003; Ewalt 2001; Fox and Miller 1996). The need for both control and community interaction provides support for mixed delivery of public services. The mixed form of public service delivery aligns better with these new public administration emphases and reflects two types of learning by the decision makers: how decision makers learn about their organization constraints (Kelman 2009) and how they learn about market opportunities (Girth et al. forthcoming).

Data and Method

We use local government service delivery data collected by the International City County Management Association (ICMA). Every five years ICMA surveys chief administrative officers in US municipalities regarding how they deliver local services. The Alternative Service Delivery (ASD) survey covers 67 common services in seven broad areas (public works, public safety, public utilities, health and human services, parks and recreation, culture and arts, and support functions). It explores the following delivery options: direct public, mixed public/contract, and several contracting options – inter-governmental, for profit, non profit, franchise and subsidy. The two most common contracting options, accounting for 69% of all

contracting, are contracts to other governments and contracts to for profit providers. These two options are the focus of our analysis.[1]

The ICMA ASD surveys are the best data source for analyzing local government contracting in the US.[2] ICMA's sample frame includes all cities over 10,000 population and counties over 25,000 and an additional sample of one in four smaller municipalities. The 2007 ASD survey received responses from 1599 municipalities for an overall response rate of 26%. There were 1474 useable responses in the final set of respondents. Breakdowns by metro status show 18% metro core, 53% suburb and 29% rural independent in 2007.

We complement this data with a supplemental survey we conducted with ICMA in 2007 of 164 city managers asking their assessment of the following characteristics for each of the 67 services measured by the survey: level of competition in the market, asset specificity of the service, contract management difficulty, and citizen interest in the process of service delivery.[3] We also use data from the US Census, American Community Survey (2005-2009 averages) for socio-demographic data. We differentiate core metropolitan municipalities from outlying suburban municipalities using Office of Management and Budget criteria. Core cities have 40 percent of their residents working in the central city of the Metropolitan Statistical Area and employment residence ratios of at least 0.75. All other metropolitan cities are classified as outlying--suburban. Non-metropolitan towns are classified as rural.

The Dependent Variable

Mixed delivery, the make and buy option, has accounted for roughly 18 percent of total delivery over the 1992 – 2007 period. Mixed delivery grew substantially in 2002, a period when total contracting dropped. As total contracting grew again in 2007, mixed delivery dropped back to its historic levels. Mixed delivery, the make and buy option, appears to be an important complement to total contracting, the buy option. See Figure 1.

Figure 1 about here

In our current analysis we give special attention to the nature of the contracting partner – whether it is a contract with another government or a contract with a for profit provider. Figure 2 shows that for profit contracting is split between mixed delivery and total contracting. Inter-governmental contracting is primarily found under the total contract, buy option and mixed delivery is quite small.[4] These patterns are consistent across the four

[1] More detailed analysis of mixed delivery outside these two major contracting options is not possible due to insufficient data.

[2] The Census of Government ceased asking about contracting after the 2002 census. Even when it did explore these questions, the Census asked about a much narrower range of services and delivery options making it a less useful data source for studies of this issue.

[3] This survey was sent to all municipal officials for whom ICMA had valid email addresses. The majority of respondents to the supplemental survey were from suburban municipalities (53%), and the rest were from metro core (25%) and rural independent municipalities (22%).

[4] Non profit delivery follows a similar pattern to inter-governmental contracting, but it is such a small percentage of services, we do not distinguish it in our subsequent analysis.

survey years. Even in 2002, the year when mixed delivery was highest, these patterns persist. We focus our analysis on the 2007 period, the most recent data available, and the period when mixed delivery falls back to its historical average levels. What we want to understand is how the strategic decision to use mixed delivery, or concurrent sourcing, differs by the choice of contract agent, for profit or other government.

Figure 2 about here

Figure 3 provides a breakdown of these four options among the 15 services with the highest levels of for profit contracting and the 15 services with the highest levels of inter-governmental contracting. It is easy to see that mixed delivery is more common among services that are provided with for profit agents. Total contracting is more common among services that are provided by contracts with other governments. These services (libraries, jails, delinquent tax collection, public health, welfare determination and water treatment) are services that are hard to measure, have high public interest and need for inter-governmental coordination. Contracting to other governments allows for such regional coordination and citizen scrutiny. Where mixed delivery occurs in inter-governmental contacts it is in services that need both local and regional delivery (police/fire communication and sewerage collection and treatment). By contrast we see that services that fall on the for profit side of the figure are more likely to be provided with mixed delivery (street repair, vehicle and building maintenance, tree trimming). These are services that may require specialized equipment but are relatively easy to measure. Mixed delivery can address information asymmetries and ensure more control and competition in the market so that contractors cannot charge monopoly rents. Total contracting is most common in legal services, waste collection and disposal, vehicle towing and gas utilities. These are services where there is considerable experience with private contracting and despite the requirement of investment in specific assets, they are relatively easy to measure and there is a reasonable level of competition in the market place. Gas utility management is the exception as a natural monopoly – but one with long experience with contracting out and a public service utility regulatory framework to ensure public oversight.

Figure 3 about here

We focus our analysis on the local government as the unit of analysis. On average, municipalities provide 35 of the 67 services measured, but both the number and type of services provided varies considerably by size and metro status of municipality. Table 1 shows that on average, six services are provided via mixed delivery and 10 via total contracts. But when we look at the breakdown between for profit and inter-governmental we see that mixed delivery is much more likely to be found in for profit contracts, while total contracts are more likely to be found in inter-governmental contracts. These results intrigue us and constitute the focus of our subsequent analysis.

Table 1 about here

Independent Variables

We are interested in how mixed delivery is used as a strategic management choice across the full range of services a local government provides. We control for managers' need to manage risk by looking at service characteristics, market competition and citizen interest for the unique mix of services each local government provides. The supplemental 2007 service characteristics survey shows significant differences in managers' assessments of these four factors by metro status and by service. Transaction cost economics points to two key characteristics of a service – whether the service requires specific assets or technical expertise (*asset specificity*) and the difficulty of contract specification and monitoring (*contract management difficulty*) (Williamson 1991). In the public sector an additional characteristic is important – the level of *citizen interest* in service delivery (Hefetz and Warner 2012; Nalbandian 2005; Denhardt and Denhardt 2000).

We use the supplemental survey conducted with ICMA in 2007 to measure these characteristics. Each characteristic was ranked on a scale of 1 (low) to 5 (high) for each of the 67 services ICMA measures. The ICMA survey showed significant differences by metro status so we differentiated values by metro status (core cities, outlying suburbs, and independent rural places) for our sample.[5] An average value for each characteristic for each government was calculated using the mean value for each service by metro status and averaging across the actual mix of services each government provides. The set of services provided varies across place, so the variability of the mean scores provides independent values for each service characteristic for each place.[6] We expect governments with service profiles characterized by greater asset specificity, more management difficulty and greater citizen interest to be more likely to use mixed delivery and less likely to use total contracting out. However, we expect important differences by contract agent, with governments likely to use more mixed delivery as a strategy with for profit contracts and more total contracting out as a strategy with inter-governmental contracts when these transaction costs are high.

Local governments face different local market conditions. The ICMA supplemental survey also measured the number of alternative providers for each of the 67 services (0=government only, 1=1 alternate provider 2=2, 3=3, 4=4+alternate providers) Urban core

[5] For a complete list of ratings by service and metro status see Hefetz and Warner (2012). Assessments of asset specificity are highest among rural managers (3.46), followed by urban core managers (3.35), and suburban (3.32). Managers' assessments of contract management difficulty are highest for urban core (2.94) and suburban (2.90), and lowest among rural managers (2.81). Duncan Subgroup mean comparisons show urban and suburb are similar on these two measures. Assessment of citizen interest follows an urban (3.12), suburban (2.94), rural (2.85) gradient) and these differences are significant by Duncan Subgroup means.

[6] Mean values by metro status were imputed for all provided services for each place in the sample. The final variables used in the regression models are the sum of the scores across all services provided divided by the number of services provided.

$$mean\_agg\_score_{ej} = \sum_{j=0}^{s} \mathrm{P_j} * \mathrm{score_{ej}} \,/\, \sum_{j=0}^{s} \mathrm{P_j}$$

The value is the aggregated score across all provided services divided by the number of provided services where P_j=1 if service j is provided and j=1,2,…s service; $score_{ej}$=score e for service j, e=asset specificity, contract management difficulty, citizen interest, or competition.

and suburban managers generally report higher levels of competition than rural managers (1.8 alternative providers as compared to 1.1 alternative providers averaged across all 67 services). Using the same method as described above, we calculated the *mean level of competition* each local government faced for the mix of services it provided. We see in Table 1 that on average, for the mix of services provided by each government, there is only one alternative supplier. Many local government services are natural monopolies or face limited competition in the local market. We expect higher levels of competition to be associated with lower levels of mixed delivery and higher levels of total contracting out. In addition we use managers' answers to the factor question from the overall ICMA ASD survey on whether they face an insufficient supply of alternative private deliverers in their local market (on average 12% say they do). This is an assessment over all services that complements our estimate of actual levels of market competition perceived by managers for the actual mix of services they provide.

These four factors may be considered an assessment of need based on service and market characteristics. The next elements in our model assess the managers' response. Regarding competition, managers have several options. They can use mixed delivery – the core focus of our analysis, or they can also encourage competitive bidding from in house teams. We expect competitive bidding to be complementary to mixed delivery and a substitute for complete contracting.

Asset specificity and contract management difficulty could be addressed with more effective monitoring. We developed an index which includes a number of factors reflecting managerial learning and monitoring. These include four monitoring elements: monitoring costs and compliance with delivery standards specified in the contract, conducting field observations and analyzing data and records; and four learning elements: identifying successful uses of private alternatives in other jurisdictions, hiring consultants to analyze feasibility of private alternatives, developing programs to minimize the effect on displaced public employees and implementation of private alternatives on a trial basis.[7] We expect governments reporting higher values on our managerial learning and monitoring index to engage in more mixed delivery. Under total contracting out we expect higher monitoring under for profit contracting but not under inter-governmental contracting because managers will assume that internal monitoring methods still apply with inter-governmental contracts.

To measure managers' response to citizen interest we include a measure of political climate favoring a reduced role for government and an index of citizen satisfaction which includes answers to the following questions: evaluate citizen satisfaction, conduct citizen surveys, monitor citizen complaints and keep service complaint mechanism in house. We expect greater attention to citizen satisfaction to be associated with both more mixed delivery and more total contracting out.

[7] This index and the other indices used in this paper are created by summing positive responses to component questions and dividing by the total number of questions in the index. $\Sigma f_i/N$, where f=1 if checked yes to question and 0 if not, and i=1,2,…N for questions.

An important issue for local government managers in considering outsourcing options is the role of internal and external opposition. We include an opposition index based on managers' reports of opposition from citizens, elected officials, department heads and line employees. We expect opposition to lead to more mixed delivery and less total contracting out – especially in contracts with for profit partners (Levin and Tadelis 2010).

More professional managers are more likely to be able to manage the complexities of outsourcing. We control for governments that have the council manager form because they are more likely to have professional managers (Coate and Knight 2010). We expect professional managers will have higher use of mixed delivery in for profit contracts and lower use of total contracting out.

We also control for metro status. We know from prior work that suburbs use more contracting (Hefetz, Warner and Vigoda-Gadot 2012; Joassart-Marcelli and Musso 2005) but we are interested in determining if they also use more mixed delivery. Mixed delivery requires the capacity to offer services both in house and in the market. We expect municipalities with larger population and higher income to be more likely to use more mixed delivery.

Model and Results

We ran probit models on the overall level of mixed delivery and complete contracting a municipality uses. The dependent variable is the probability to select mixed delivery or total contracting out given the total number of services the local government provides.[8] Then we split the mixed and total contracting models into two subsets based on contract agent – for profit and other government. These probit submodels by agent are based on the total number of services a government provides via contracting (rather than the full service provision as in the overall mixed and total contracting out models), because we are especially interested in differentiating the importance of agent among the contracting categories. We focus on for profit and other government agents because these two represent the most common forms contracting, accounting for two thirds of all contracting.

With regard to the standard transaction cost variables, we see that overall mixed and total contracting behave largely as predicted. When a government faces a service profile that is more asset specific, managers are more likely to use mixed contracting and less likely to use total contracting. This is true whether mixed delivery is with for profit or other government, but in the total contracting model we see more contracts to for profits and fewer to governments when asset specificity is high. This is the opposite of our expectations but shows the higher use of total contracting in asset specific services such as utilities (natural monopolies) and public works (waste management) where private sector competence is well established. Managers are less willing to engage in total contracting to other governments when asset specificity is high. This may be a risk management strategy to

[8] A Probit transformation uses the inverse value of the cumulative standard normal distribution and produces predictions within the [0,1] range. A simple OLS procedure would predict results outside this range.

avoid the challenges of lock in. It may be easier to change a for profit provider due to a national market of competitors, whereas the inter-governmental market is purely local and thus concerns with lock in may be higher.

Contract management difficulty works the opposite as we expected in the overall mixed and total contracting models. Mixed delivery is less likely when contract management difficulty is high. Even though mixed delivery provides some benchmarking information, it is not enough to overcome the loss of information and control from outsourcing. Managers are less likely to totally contract out with for profit partners when contracts are more difficult to manage and monitor, but more likely to use inter-governmental contracts for difficult to manage services. The commonalities among governments (as principal and agent) make contracting in such difficult circumstances less risky. Common approaches, similar legal constraints, labor management practices and attention to citizen concerns may be the factors that make inter-governmental contracting preferred in these cases.

Citizen interest also operates as expected with more mixed contracts and less total contracting out when citizen interest is high. Mixed delivery is one way to keep open avenues for citizen engagement in the service delivery process. This is especially important with for profit contracts. Contrary to expectations we see more total contracting to for profits when citizen interest is high but no effect on contracts with other governments. Recall that waste collection had the highest level of total contracting out and even though it is a service with high citizen interest, it is one that is easy to measure and for which there is a lot of contracting experience. We see no effect of citizen interest on total contracting to other governments. Here the agent is another government, which already has avenues in place (and legal protections) to ensure citizen engagement.

Market competition is a critical factor in managing contracting risk. Competition offers alternatives to prevent lock in, and competitive pressures are one key to cost savings. We see mixed contracting is associated with more competition and total contracting out is associated with lower competition. The result for total contracting out is the opposite of expected but is explained by the differentiation by agent. Total contracting out with for profit agents rises with competition as theoretically expected. However, when there is more competition in the marketplace, total contracting to inter-governmental agents is used less. Inter-governmental contracting is the preferred option when competition is low. This reflects prior research that finds inter-governmental contracting is often used as an alternative when private market competition is thin, especially among rural providers (Girth et al forthcoming; Warner 2011).

Managers must make a strategic response to the service and market characteristics they face. We see this in the case of competition. Insufficient supply of alternative providers leads managers to use more mixed delivery with for profits and other governments. Mixed delivery creates competition in the market by dividing the service between in house and contract providers. It also prevents specialization and reduces the ability to charge monopoly rents either by internal teams or external contractors (Bradach and Eccles 1989; Miranda and Lerner 1995). Competitive bidding is another strategy employed by local governments but it results in a single winner. In our models we see that competitive bidding

is associated with a higher level of mixed delivery with for profit providers but a lower level of inter-governmental mixed delivery. Competitive bidding has no effect on the total contracting option. Competitive bidding is a strategy to promote competition *for* the market but mixed delivery is a strategy to maintain competition *in* the market.

We assess the managerial response to other transaction cost and citizen concerns with our citizen satisfaction index and managerial learning and monitoring index. Both are positively associated with mixed delivery. While attention to citizen satisfaction does not differentiate mixed delivery by for profit or other government agent, it does differentiate complete contracting by agent. More attention to citizen satisfaction leads to more total contracting out to other governments, but has no effect on for profit contracts. Citizen interest is an important additional characteristic that managers must address in local government contracting decisions. Mixed delivery, as a strategy, keeps open avenues for citizen engagement through the maintenance of the in house delivery option as one of the concurrent sources. Total contracting out can close off that avenue so managers must build in explicit mechanisms to ensure citizen engagement – such as those measured by our index. However, managers who give more attention to citizen engagement are more likely to select other governments as the contract partner because inter-governmental contracting maintains some avenues for citizen engagement within it, even under the total contracting strategy.

Managers have learned a lot about contracting over the decades. Managers recognize the need to assess and test feasibility beforehand and monitor performance after contracts are let. Those who do, as measured by our learning and monitoring index, are more likely to use more mixed delivery regardless of contract agent. Pre and post testing supplements the information and control offered by the mixed strategy. In the total contracting out models more learning and monitoring is associated with fewer inter-governmental contracts. This could be because intergovernmental contracting suffers from weak sanctions as argued by Marvel and Marvel (2008), or because inter-governmental contracting provides ongoing avenues for contract evaluation – inside the system – and thus fewer explicit techniques are required.

Managers also must manage politics and opposition. Managers that face a political climate emphasizing a reduced role for government engage in less mixed delivery. Opposition is not a factor in mixed delivery (note it is not significant in any of the mixed models), but is important in total contracting where we see opposition leads to less total contracting out over all and less for profit contracting when opposition is present. In general opposition to for profit contracting is greater than to inter-governmental contracts, in part because under inter-governmental contracts labor and open government processes remain the same (Krueger, Walker and Bernick 2011; Hefetz, Warner and Vigoda-Gadot 2012)

Council manager governments, which are more likely to have professional managers, are less likely to use mixed delivery with inter-governmental contracts and more likely to totally contract out. One might argue that mixed delivery in inter-governmental contracts is redundant and unnecessary because, as like agents in a stable network of ongoing intergovernmental relations, inter-governmental contracts share some

characteristics of mixed delivery even when they are totally contracted out. Experienced managers recognize this fact. While council manager governments do more total contracting out overall, this is due to higher levels of contracting with other governments. For profit contracts, due to key differences with the agent (different objectives, labor management strategies and legal rules regarding disclosure), are not preferred by council managers. Total contracting out, as we noticed in figure 2, is more common in inter-governmental contracts.

As expected suburbs do less mixed and more total contracting out overall. Research shows suburbs face more competitive markets generally, and more homogeneous citizen preferences which lead to less complex service needs (De Witte and Geys 2011; Warner 2009, Frug 1999). This makes mixed delivery as a strategy less important. Suburbs use more total contracting out for both for profit and inter-governmental contracts. The politically fragmented suburban landscape offers more inter-governmental options, making inter-governmental contracting less subject to lock in among suburban governments. Larger places use more mixed delivery and less total contracting out. This reflects the greater complexity and scale of larger places that makes mixed delivery both more possible and more necessary. Typically outsourcing is lower among larger urban places, in part due to complexity. By using a mixed delivery strategy, they can take advantage of some contracting while still giving attention, through in house delivery, to the complexity of their service and consumer mix. Richer places do both more mixed and more total contracting overall. However, when we break this by agent, we see the effect is positive only in for profit mixed contracts. Mixed contracting, as a strategy, requires resources and markets large enough to engage in both in house and contract delivery. Larger and richer municipalities are more likely to have access to the resources necessary for mixed delivery. Richer places are also more attractive generally as contracting partners. However, larger and richer places are less likely to engage in inter-governmental contracts, as they have internal economies of scale that may make inter-governmental contracting less attractive.

Our interest is focused on the local government as the decision making unit and the manager as the central decision maker. The public manager must balance considerations across services and other issues of importance to the local government unit. This is why we look at the contracting decision as a complex set of choices across all services in a place. Other scholars who focus on the service as the unit of analysis fail to capture the important balancing role of the public manager at the level of the local government (Levin and Tadelis 2010; Lamonthe, Lamothe and Feiock 2008; Brown, Potoski and Van Slyke 2008). To test the robustness of our results to an individual service based model, we ran a multinomial logit model of all contracted services to assess our four key contracting choices against the four key characteristics that vary by service: asset specificity, contract management difficulty, citizen interest and competition. The multinomial logit results are similar in all models except the mixed inter-governmental model but this model represents only four percent of all service cases and multinomial logit does not do a good job of distinguishing such small proportions.[9]

[9] The mixed inter-governmental model was not similar – only the citizen interest variable was stable. But the total contract out for profit model was identical and the mixed for profit

Discussion

These results have shown that concurrent sourcing or mixed delivery is an important contracting strategy. The 'make and buy' option allows local government managers to respond to transaction costs, market competition and citizen interest. Mixed delivery is a strategy that complements monitoring, competitive bidding and mechanisms to ensure citizen satisfaction with contracted service delivery. What is interesting is how governments use mixed delivery and complete contracting differently among contracting agents. Mixed delivery is especially important with for profit contract partners. When citizen interest is high and government faces an insufficient supply of private deliverers, mixed delivery provides another means to enhance competition, avoid provider lock in and ensure continued avenues for citizen engagement in the process of service delivery. But mixed delivery requires resources. Local governments with larger populations and higher incomes are more likely to use the mixed delivery strategy.

Our research has shown clearly that agent matters. With for profit contract partners the objective function is different as well as legal rules regarding labor management and citizen engagement (Dannin 2006). There is also the question of market power. Mixed delivery allows public managers to address the incongruences in goals and process between public and private sector actors and promote competition. This ensures the benefits of contracting while reducing the risks. With inter-governmental contracting, the agent, as another local government, does not pose the same risks of incongruence of goal and process as found with for profit partners. There is also a wider market of potential governments with which to contract – at least for suburbs. This makes the complete contracting strategy a less risky option. Our models show governments prefer this strategy when contract management difficulty is high. Commonality of interest and approach makes inter-governmental partners less risky when pursuing the complete contracting strategy. However when private market competition is high, total contracting out with other governments is less likely.

As with the private sector literature on outsourcing, we find the make and buy option is an important strategic management choice. For local government managers, who need to balance all the traditional transaction costs along with wider attention to a broader set of public sector concerns, the mixed strategy is an important strategic option that complements other managerial tools.

Parmigiani (2007) and Heide (2003) argue concurrent sourcing among private managers is a middle range option between in house delivery and complete contracting. Our results suggest something different for public managers. Whereas private managers only have the for profit outsourcing option, public managers face a wider set of sourcing choices. They can contract to private markets or to public markets of other governments.

Table 3 provides the Duncan Post Hoc rankings of the average values of the four key service characteristics on our four sourcing choices as measured across all individual

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and total out inter-governmental models were the same except for the citizen interest variable which went from positive to negative in the for profit mixed model and from not significant to negative in the total contracting out inter-governmental model.

services. We include public in house delivery as a point of comparison. Mixed delivery does not lie in the middle between public delivery and total contracting out. Instead, mixed delivery is found at the ends of the range for each of these four service characteristics. Mixed for profit delivery is found among services with lower asset specificity, contract management difficulty and citizen interest, whereas mixed inter-governmental delivery is found at the other end of the scale in services where these characteristics are higher. The total contracting options lie next to the mix but closer to the public sourcing choice, which lies in the middle of the range. Competition works in the opposite direction with mixed for profit delivery found in services where competition is higher and mixed inter-governmental delivery found in services where competition is lower. This suggests that both choice of contracting agent and choice of sourcing strategy, mixed delivery or complete contracting, is important in managing these service characteristics. Because public managers face a wider set of sourcing partners, they have a wider array of sourcing choices than for profit firms. This important pubic manager distinction is another reason why more attention should be given to mixed sourcing strategies in public administration scholarship.

Table 3 about here

Mixed is a strategy for experimenting and managing risk. Public delivery, as the traditional delivery option, can be found in services at all levels of asset specificity, citizen interest, and management difficulty. This is why public delivery lies in the middle, as the average across a wider range of provided services (recall over half of all services are provided in house). Total contracting out to for profit or other governments are the next most common alternatives (used in 6 and 2 services on average) and they move out on the range of service characteristics rankings. But at the furthest end of the range is where we see use of the mixed delivery option. This allows governments to explore contracting, but with a concurrent sourcing strategy that enables them to better manage risk, address information asymmetries and secure greater market management control.

We know that mixed delivery dropped from 2002 to 2007. A look at these movements shows that mixed delivery is the intersection between domains – 'make' (public in house) and 'buy' (for profit and other government contracts). Some services stay in mixed delivery as a stable option; for others mixed delivery is a strategy to test the possibility of contracting. Figure 4 shows these domains and the movements between them from 2002 to 2007. This figure is based on a count of service movements for the 438 places that answered the ICMA survey in both 2002 and 2007. We see that mixed delivery was used to test contracting and movements toward total contracting out are slightly larger than movements from total contracting out back to mix. If a contract is successful, mixed delivery may be less needed. But we also see mixed is a pathway back toward public delivery. Government managers are architects of a dynamic system and mixed delivery gives them a flexible 'make and buy' strategy that complements the make or buy alternatives.

Figure 4 about here

Conclusion

In this research we examine alternative sourcing strategies used by local government managers. We show that when local governments mix their sourcing alternatives so that service delivery relies on both market supply and internal supply, this mixed delivery complements other contract monitoring mechanisms and may reduce contract risks while enhancing potential benefits from competition. When private markets are limited, public managers still have the option to benefit from public markets of intergovernmental agreements. Our empirical results present the mixed delivery alternative as a strategy rather than a default. The mixed delivery alternative allows higher response to citizen needs, and permits market experimentation even when markets are thin. Public managers that use market alternatives currently with internal in-house provision in a mixed form may benefit from market/hierarchy complementarities, while lessening the effect of internal and external constraints.

Public administration theory needs to move beyond transaction cost considerations to embrace the broader set of strategic alternatives that recognize the importance of the make and buy option. The private management literature offers important insights, relevant to public management (Boyne 2002), and this is shown especially by the private management work on concurrent or plural sourcing (e.g. Bradach and Eccles 1989; Parmigiani 2007). However, public management scholarship has something to contribute to the private management literature. There is something distinctive about public management not only as regards citizen involvement and public values, but also as regards stability and fail safe service provision (Rainey 2011), issues made even more salient during the recent crisis in private financial markets. Public sector concurrent sourcing emphasizes more than competition, price and information risks. It also tests the importance of agent, goal congruence and attention to citizen (customer) and community interests outside the central control of the firm. Our understanding of stability and risk management in contracting, both in the public and private sectors, might be enhanced by greater attention to these broader issues.

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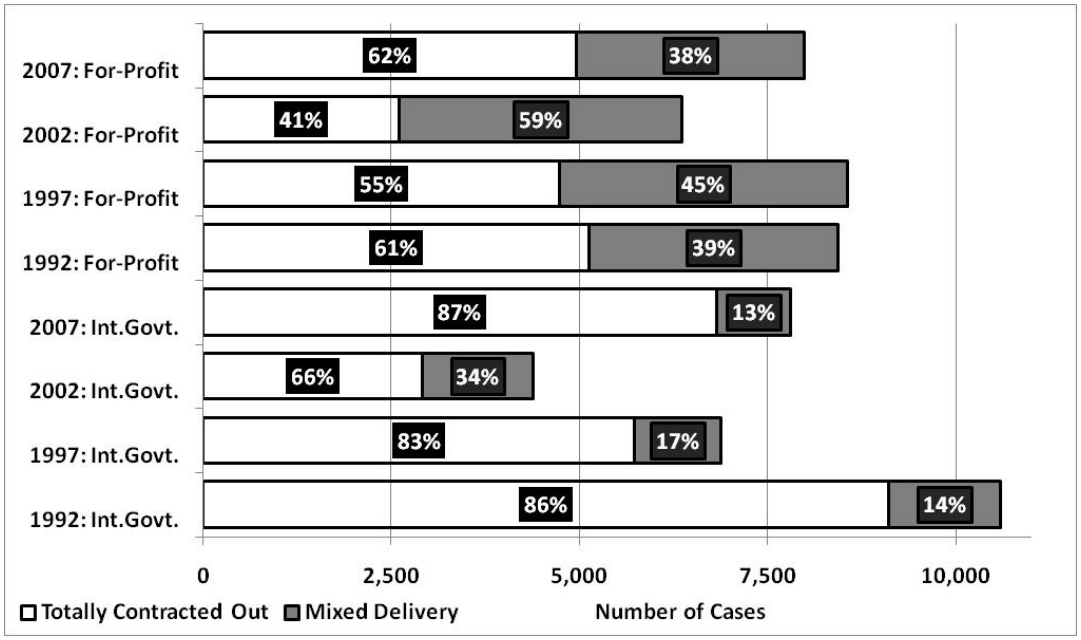
Figure 1: Composition of Local Government Service Delivery 1992 - 2007

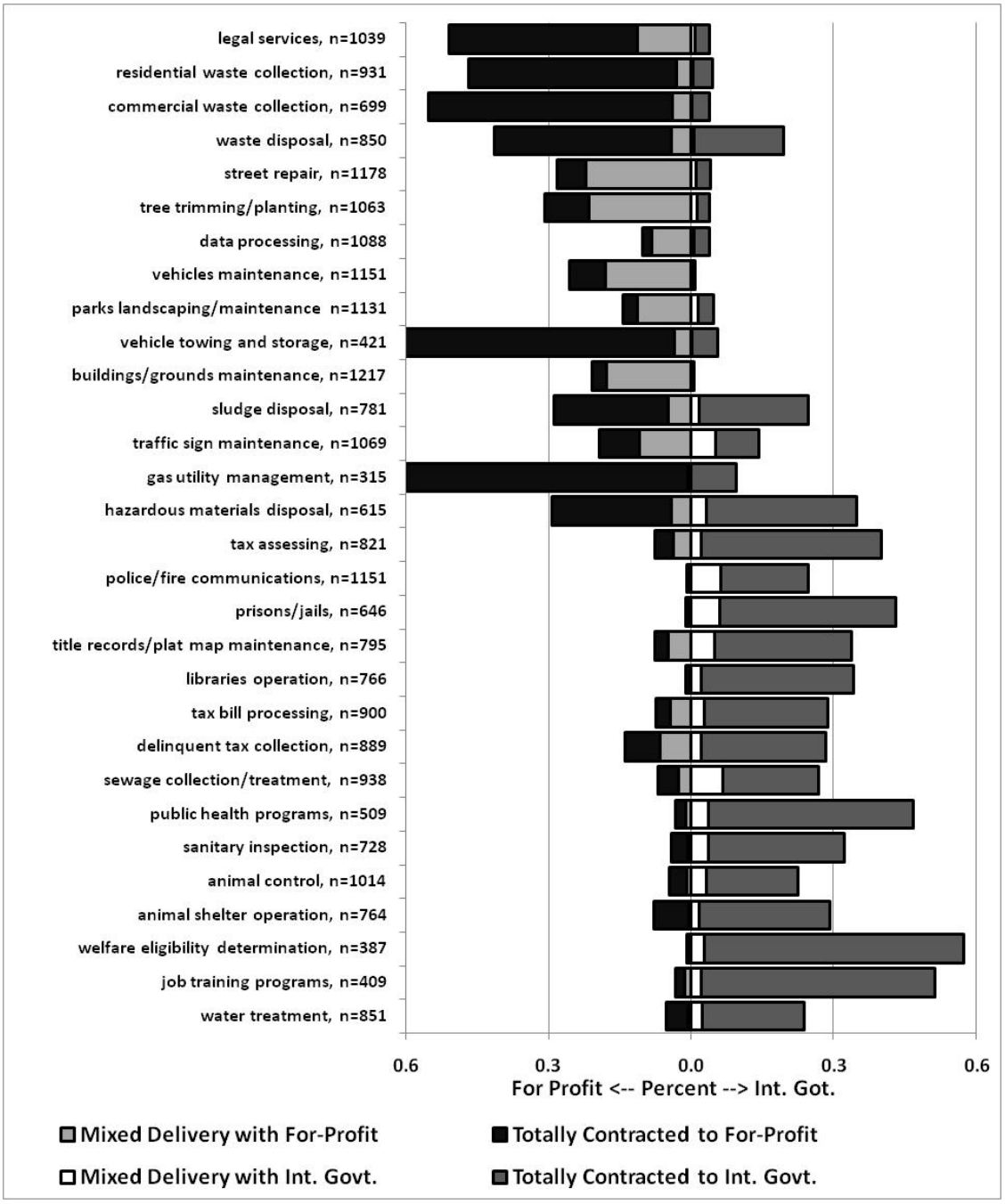
Source: Authors' Analysis of Alternative Service Delivery Surveys, 1992 - 2007, ICMA, Washington DC.

Figure 2: Distribution of Mixed versus Totally Out Contracting, 1992 – 2007



Source: Authors' Analysis of Alternative Service Delivery Surveys, 1992 - 2007, ICMA, Washington DC.

Figure 3: For Profit and Inter-Governmental Mixed and Total Contracting Frequencies



Source: Authors' Analysis of Alternative Service Delivery Survey, 2007, ICMA, Washington DC. Top 15 services delivered as for profit and top 15 services delivered as inter-governmental contracts.
n=total number of cases for that service.

Table 1: Model Variables, Descriptive Statistics

	Mean	STD
Number of Services Provided[1]	35.4	13.1
Number of Services with Mixed Delivery[1]	6.4	6.1
Number of Services with Mixed For-Profit Delivery[1]	2.1	3.4
Number of Service with Mixed Int. Govt. Delivery[1]	0.7	1.7
Number of Services Totally Contracted Out[1]	10.1	9.9
Number of Services Totally Contracted Out to For-Profit[1]	3.4	3.7
Number of Services Totally Contracted Out to Int. Govt.[1]	4.6	6.4
Average Asset Specificity across all ServicesProvided[2]	3.5	0.1
Average Contract Management Difficulty across all ServicesProvided[2]	2.9	0.1
Average Citizen Interest across all ServicesProvided[2]	3.0	0.2
Average Market Competition across all ServicesProvided[2]	0.9	0.3
Political Climate[1]	0.07	0.26
Competitive Bidding[1]	0.09	0.29
Insufficient Market Supply[1]	0.12	0.33
Citizen Satisfaction Index[1,5]	0.19	0.29
Learning and Monitoring Index[1,5]	0.24	0.28
Opposition Index[1,5]	0.14	0.26
Council Manager Dummy[1]	0.61	0.49
Suburb Dummy[1]	0.53	0.50
Population Size[3]	71,246	183,011
Per Capita Income[4]	27,550	11,532
N – Total Number of Governments	1,474	

Source:
[1] Alternative Service Delivery Survey, 2007, ICMA, Washington DC;
[2] Service Characteristic Survey, 2007, ICMA, Washington DC;
[3]U.S. Census Bureau, Population Division, 2006 Population Estimate, more @http://www.census.gov/popest/overview.html, Variable is Log transformed;
[4] 2005-2009 American Community Survey 5-Year Estimates, Census of Housing and Population, more @ http://factfinder.census.gov/servlet/DatasetMainPageServlet?_program=ACS&_submenuid=&_lang=en&_ts=) Income in USD averaged across 2005 to 2009, variable is log transformed;
[5] All indices are on a scale of zero to one, and are the sum of all positive (1) checks over the number of items in the index.

Table 2: Probit Model Results

	1. Mixed Delivery Model			2. Total Contract Out Model		
	All Mixed Contracts	**Private For-Profit**	**Inter-Govt.**	**All Total Contracts**	**Private For-Profit**	**Inter-Govt.**
Average Asset Specificity	1.533*	0.936*	0.645*	-1.913*	0.578*	-1.264*
Average Cont. Difficulty	-0.891*	-2.227*	-0.892*	3.409*	-0.703*	2.962*
Average Citizen Interest	0.048	0.458*	0.288*	-0.371*	0.220*	-0.168
Average Market Comp.	0.965*	0.691*	0.328*	-1.242*	0.309*	-1.394*
Political Climate	-0.072*	0.039	-0.102	-0.019	0.054	-0.054
Competitive Bidding	0.014	0.077*	-0.135*	-0.009	0.022	-0.055
Insufficient Supply	0.117*	0.167*	0.126*	-2.3e-4	-0.063*	-0.054*
Citizen Satisfaction Index	0.084*	0.020	0.094	0.075*	-0.083	0.164*
Learning-Monitoring Index	0.124*	0.212*	0.233*	-0.048	0.055	-0.238*
Opposition Index	0.048	0.073	0.062	-0.140*	-0.095*	0.059
Council Manager Dummy	-0.011	0.005	-0.137*	0.093*	-0.017	0.071*
Suburb Dummy	-0.137*	-0.018	0.034	0.224*	0.116*	0.198*
Population log	0.043*	0.136*	0.031	-0.138*	-0.056*	-0.088*
Income log	0.361*	0.082*	-0.095	0.055*	-0.045	-0.093*
Intercept	-8.787*	-2.291*	-1.932*	-0.925*	-0.797	-1.403*
N=1,432						
χ^2	8,810	4,152	2,432	554,955	3,100	3,555

Source: Authors' Analysis of Alternative Service Delivery Survey, 2007, ICMA, Washington DC.

Note: the denominator for "All Mixed Contracts" and "All Total Contracts" is total number of provided services in that jurisdiction, while the denominator for the submodels (for-profit or inter-governmental contracts) is the number of contracted services (mixed and totally out).

* sig. at $p<0.05$

Table 3: Service Characteristics by Delivery Choice

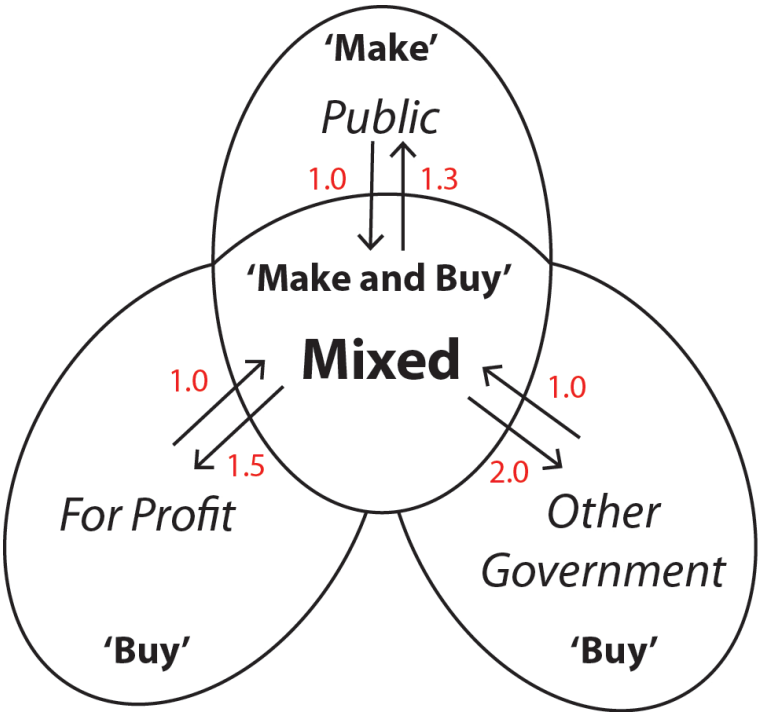
	Low	Medium Low	Medium	Medium High	High
Competition	T. Out Int. Govt.	Mixed Int. Govt.	Entirely Public	T. Out For-Profit	Mixed For-Profit
Mean Score:	0.51[a]	0.56[b]	0.82[c]	1.15[d]	1.31[e]
Citizen Interest	Mixed For-Profit	T. Out For-Profit	Entirely Public	T. Out Int. Govt.	Mixed Int. Govt.
Mean Score:	2.80[a]	3.01[b]	3.01[b]	3.16[c]	3.32[d]
Management Difficulty	Mixed For-Profit	T. Out For-Profit	Entirely Public	T. Out Int. Govt.	Mixed Int. Govt.
Mean Score:	2.68[a]	2.76[b]	2.87[c]	3.10[d]	3.12[d]
Asset Specificity	Mixed For-Profit	Entirely Public	T. Out For-Profit	T. Out Int. Govt.	Mixed Int. Govt.
Mean Score:	3.34[a]	3.45[b]	3.46[b]	3.58[c]	3.65[d]

Source: Authors' Analysis of Alternative Service Delivery Survey, 2007, ICMA, Washington DC.

The Duncan multiple-range method tests the hypothesis that one subgroup mean is significantly larger than that of another subgroup. Group means are clustered and ranked based on a 0.05significance level and are shown by the superscripted letters a,b,c, ….

Subgroup Ns: N=number of services in the analysis, where n cases of entirely public = 27,811; n mixed for-profit = 3,028; n mixed intergovernmental = 982; n totally contracted to for-profit = 4,959; n totally intergovernmental = 6,821.

Figure 4: Mixed Delivery - The 'Make and Buy' Option: Movements, 2002-2007



Author Analysis base on Alternative Service Delivery Survey, 2002, 2007, Paired surveys ICMA, Washington DC. Movements from 2002-2007. Paired sample N=Number of mixed cases, 2002=3439, 2007=3143.