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**DYNAMICS OF SERVICE PROVISION:
SERVICE, MARKET AND PLACE CHARACTERISTICS**

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Dynamics of Service Provision: Service, Market and Place Characteristics

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Dynamics of Service Provision: Service, Market and Place Characteristics

Abstract

Analysis of local government contracting decisions typically focuses on transactions costs related to service characteristics, especially asset specificity and difficulty of contract management. This analysis expands the focus to include market characteristics (competition), citizen characteristics (public interest in the service delivery process), and place characteristics (metro status). Direct surveys of city managers' rankings of 67 services by transactions costs, competition and citizen interest are combined with data on city managers' sourcing decisions (direct public, inter-government cooperation, for profit and non profit contracting). Multinomial logit models of service delivery sourcing choice find metro status and competition are key explanatory variables. Inter-governmental cooperation represents an important public market alternative when contract management is difficult and competition is low. For profit contracting is less common when citizen interest is high and competition is low. Differences by metro status show the highest rates of contracting among suburbs.

Dynamics of Service Provision: Service, Market and Place Characteristics

Introduction

The shift toward market delivery of public services, particularly contracting out, was conceived as a means to promote efficiency, better align managerial objectives with citizen concerns, and promote local economic development. The superiority of market delivery is based on public choice assumptions (increased choice, efficiency) (Savas 1987, Osborne and Gaebler 1992). However, recognition of the importance of transactions costs on contracting have led to empirical analysis looking at the nature of the service and of the contracting process (Brown et al 2008, Levin and Tadelis 2009, Bel and Fageda, 2007), as well as the differential nature of public sector response by geography (Warner 2006, 2009, Warner and Hefetz 2002, 2003, Bel and Costas 2006, Bel and Mur 2009, Dijkgraaf and Gradus 2008). Public administration theory focuses primarily on the nature of the service, but geography, economics and planning give more attention to broader theoretical frameworks which focus on industrial organization and the structure of the market and the place (Bel and Warner 2008, Bel and Mur 2009, Hefetz and Warner 2007, Vickers and Yarrow 1988). Recent concern with citizen engagement and the role of government has given more attention to social choice concerns on the interaction between citizens and government (Sager 2002, Denhardt and Denhardt 2001, Warner 2008).

From both an economic and an organizational perspective, service characteristics are important in determining the sourcing decision - whether a service will be provided in house or contracted in the market. In the private sector the "make or buy" literature explores when transactions will occur inside the firm and when they will take place in interaction with the market, based on the relative transactions costs of market or internal production related to governance form (Coase 1937). Transactions costs analysis also figures importantly in analyses of the public sector (Nelson 1997, Sclar 2000, Hefetz and Warner 2004, 2007, Brown and Potoski 2003a, 2005,

2008, Bel and Fageda 2008, Levin and Tadelis 2009, Ferris and Graddy 1994, Lowery 2000, Kavanagh and Parker 1999).

In this paper we expand from a primary focus on service characteristics and look at the broader objectives and constraints that government managers must consider in their decisions on sourcing service delivery. In addition to service characteristics related to asset specificity and contract management, we give attention to the level of public interest in the process of service delivery and the level of competition in the market. We conduct a nationwide survey of local government managers to derive measures of these features for a set of 67 services. We combine this survey with the most recent data from the International City County Management (ICMA) (2007) on forms of local government service delivery. We use multinomial logit regression models to explore the choice of alternative service delivery choices (public delivery, public contracting or private contracting), and the role of service characteristics (technical expertise and asset specificity, contract specification and monitoring), market characteristics (level of competition), citizen interest (public interest in service delivery) and place characteristics (metro status) on service delivery form. Our results yield new insights on the nature of transactions costs and show the need for more attention to the nature of local markets and the role governments play in managing those markets and balancing service delivery concerns with citizen interests.

Literature Review

From Political to Pragmatic Privatization

Public sector reforms in many countries since the end of the 1970's adopted privatization policies as a major instrument in search of expenditure and tax cuts and higher efficiency. The aims of privatization reforms, as practiced first by the Thatcher administration in the UK, were mainly to withdraw the government share from market production, to lower public debts and limit money

supply, to reduce labor union influence on government decisions, to widen private markets and to gain political support (Heffernan 2005; Marsh 1991). Advocates predicted a decreasing role for direct government provision of public service delivery. Although privatization programs gained wide support at national and local levels around the world (Henig 1990), actual privatization rates, especially among US local governments, have grown more slowly than expected.

ICMA surveys of US municipalities show privatization peaked at less than twenty percent of service delivery in 1997 (Warner and Hefetz 2004). In addition, studies of cost savings and efficiency have not found clear success across experience with privatization reforms (Boyne 1998; Domberger and Jensen 1997; Jensen and Stonecash 2005; Marsh 1991, Bel and Warner 2008a, 2008b). New research has challenged privatization, especially outsourcing public services, as efficiency oriented rather than service-quality oriented, and missing the importance of citizen and government engagement in the democratic process (Box 1999; Christensen and Laegreid 2002; Denhardt and Denhardt 2000; Nalbandian 2005). Current public reforms undertake a middle path which combines market solutions with political control, while early privatization reforms dichotomized politics from administration and substituted managerial control for political control (Christensen 2001, Warner 2008). The debate over privatization is moving from ideology to pragmatism - not a quest for a better administration philosophy, but for better functioning public organizations. The same concerns with politics and economic efficiency that motivated ideological outsourcing may serve as promoters for more balanced approaches to public service delivery (Feigenbaum and Henig 1994; Hefetz and Warner 2007, Warner and Hefetz 2008).

Several questions arise from the current status of this debate. Early enthusiasm is now replaced by a broader set of concerns, and in practice, governments embrace a more pragmatic approach (Bel et al 2007, Hebdon and Jalette 2007, Brown et al 2006, Boyne et al 2002). This calls for a better understanding of the sourcing decision. Is it a "make or buy" dichotomy, or are there alternatives

that involve some level of integration between markets and planning? Under which circumstances are which delivery modes better suited? Public management can look to private organizations as a source for reform models (Boyne 2006, Prager 1994). The focus of this study is to understand how public managers' assessments of transactions costs, competition and public interest affect the choices they make on sourcing and how this assessment varies by place. We will look at four sourcing alternatives: in house public delivery, inter-governmental cooperation (contracting to other governments), private contracting to for profit providers and private contracting to non-profit providers.

Transactions Costs and Service Characteristics

The potential of private markets for public services has turned the sourcing dilemma into a central one faced by public managers. Understanding the sourcing decision, “to make or buy” is a fundamental question in industrial economics. The theoretical analysis of privatization and contracting out uses the concept of transactions costs to include administrative costs as well as costs of contracting. Coase, in his seminal 1937 paper, outlined transactions costs as a means to understand why firms exist. Williamson (1991, 1999) gave specific attention to transactions costs inside the public sector. Williamson (1999) imagines a continuum from public to mixed to private production depending on the nature of the service. Stein (1990) used transactions costs to classify local government services and assess the form of delivery. Theory building on Williamson (1999) and Coase (1937) suggests that the decision to “make or buy” a service will be determined primarily by service characteristics 1) the level of specific physical infrastructure or technical expertise and 2) difficulty in contract specification and monitoring. Transactions costs have been used to explain government choice in the decision to contract out (Nelson 1997, Sclar 2000, Zerbe and McCurdy 1999). Some authors find transactions costs are important in explaining decisions regarding service

delivery choice (Ferris and Graddy 1994, Lowery 1998, Kavanagh and Parker 1999, Brown and Potoski 2003, Entwistle 2005, Hefetz and Warner 2004, 2007, Bel and Fageda 2008, 2009, Levin and Tadelis 2009). Others argue that the costs of bureaucracy are higher (Savas 1987, Eggers and O'Leary 1995, Osborne and Plastrick 1997, Megginson and Netter 2001).

Understanding Market Characteristics: Competition and Cooperation

Service characteristics described by transactions costs are only one element in the government sourcing decision. Governments face a broader set of concerns than just asset specificity and contract specification and monitoring when deciding how to deliver a service. Williamson (1999) sees a broader objective function for government than just efficiency. Government is also responsible to ensure probity – failsafe service delivery. This concern over failsafe delivery leads many local governments to both make and buy a service – ensuring redundancy in the market (Miranda and Lerner 1995). The use of such mixed delivery has risen among local governments as they have gained experience with contracting (Warner and Hefetz 2008).

Competition is key to the potential for costs savings and probity under outsourcing. However, lack of competition continues to plague markets for public goods (Sclar 2000, Johnston et al 2004, Johnston and Girth 2008). This problem is especially acute in rural areas (Warner 2009, 2006, Warner and Hefetz 2002, 2003, Kodrzycki 1994, Hirsch 1995). Although policies promoting competition, such as Compulsory Competitive Tendering in the UK have attempted to address this problem (Szymanski 1996, Domberger et al 1986), competition remains a concern (Davies 2007, Pinch and Paterson 2000). Lack of competition undermines the potential for cost savings (Bel and Warner 2008 a, 2008b). This has led local governments to explore other means of gaining economies of scale.

Limited competitive markets for local government services have raised the debate over competition or cooperation (Entwistle and Martin 2005). The most common alternative to private contracting is public inter-governmental contracting. This is used most commonly by suburban areas to gain scale, and by rural areas in order to create markets where limited private markets exist (Warner 2006, 2009, Bel and Costas 2006, Bel and Mur 2009). In the US small rural governments have trouble attracting a market of competitive private suppliers, so a public market of cooperating governments offers a means to gain scale (Kodrzycki 1994, Ferris and Grady 1991, Morgan and Hirlinger 1991, Lavery 1999). Through cooperation, local governments retain public control and local identity in service delivery and still achieve the benefits of a larger market scale (Parks and Oakerson 1993, Anas 1999, Morgan and England 1992, Warner and Hefetz 2002, 2003). In 2007, the ICMA survey shows inter-governmental contracting – cooperation - is more common than for profit contracting (Warner and Hefetz 2009).

Markets for public services must be civic. This implies some level of public accountability and control. Regulation of private contract markets is not enough as the recent debacles in the energy and financial sectors have shown (Ramesh 2008, Clark and Bradshaw 2004). Clark and Bradshaw outline the framework for a civic market based on public oversight to ensure cooperation, innovation, interactional learning and internalization of externalities. “The civic market is not built on the premise that a competitive market must be created and maintained; instead, it is built on the premise that such a competitive market is impossible to guarantee and that the public good must be served and assured by active public private partnerships between empowered state agencies and innovative and socially responsible companies” (Clark and Bradshaw 2004 p 344). Opportunism, bounded rationality and uncertainty are not exogenous, but emerge as part of the exchange process (Williamson 1996). Clark and Bradshaw point out that cooperation allows for interactive learning which a static view of transactions costs model ignores.

They argue there should be a civic core to markets for public goods which includes cooperation, local control and planning. Inter-municipal cooperation is one way local governments have worked to sustain that civic core.

Understanding Public Interests and Governmental Complexity

In addition to concerns with competition and cooperation, theorists are also giving increasing attention to the differences between citizen and consumer. Recent literature has challenged privatization, especially outsourcing public services, as missing the importance of citizen and government engagement in the democratic process (Box 1999; Christensen and Laegreid 2002; DeLeon and Denhardt 2000; Denhardt and Denhardt 2000, 2003; Nalbandian 1999, 2005). While early privatization reforms dichotomized politics from administration and substituted managerial control for political control, current public reforms undertake a middle path which combines market solutions with political engagement (Christensen 2001, Warner 2008). Effectiveness of service delivery can be increased with citizen engagement (Potapchuck et al. 1998). In addition, citizen participation can help avoid social choice dilemmas as individual preferences become more social through a process of iterative dialogue and engagement (Lowery 1998, Sager 2002). Municipalities represent an increasingly heterogeneous population and it is largely through local public services that citizens practice engagement with others unlike themselves (Frug 1999). Market delivery, by contrast tends to segment consumers into more homogeneous groups based on preference (Webster and Lai 2003). However, there is a public core to public service delivery and depending on the level of citizen interest, government sourcing decisions will tend more toward public options (direct public delivery or inter-municipal cooperation).

We need to better understand local government managers as actors in both a civic and an economic market place of public goods. Zerbe and McCurdy argue “Public provision of public

goods may have less to do with the characteristics of goods than the behavior of the interests providing them” (1999, p 567). Government managers must assess service characteristics, market characteristics and citizen concerns. Each element in this calculus is important for the sourcing decision. Failure to include attention to market and place characteristics denies the importance of local differences in public service delivery. In this research, we directly engage those differences and assess sourcing decisions based on predicted expectations of service, market and place characteristics with actual observed behavior of local government managers.

Prior Empirical Research

Three prior studies which assess the sourcing decision with regard to service characteristics deserve special attention. Stein (1991) analyzed the first ICMA survey (1982 data) and characterized services by Ostrom’s categories of private, toll, common property and collective goods (Ostrom and Ostrom 1977). He then looked at sourcing decisions based on this typology. He found local governments were more likely to contract private goods and most likely to directly provide common property goods. However the rates of direct provision were over one third even for private goods and over half for all other types. This shows a strong preference for public provision despite differences in service type. Stein did not directly measure service characteristics, he assessed them theoretically.

Brown and Potoski (2005) were the first to actually conduct a survey measuring asset specificity and ease of measurement of 64 specific local government services. Their sample of 36 local government managers’ assessments of these two service characteristics was then used to understand monitoring levels among respondents to the larger ICMA local government Alternative Service Delivery survey. They found little relationship between service characteristics and monitoring (2003b), but significant effects on sourcing decisions (public inter-governmental

contracting, private, non profit and direct public service delivery) (2003a). Subsequently they used these two measures to look at changing sourcing forms over time, and asset specificity was only a significant predictor in the non profit model. Ease of measurement was significant in all models in the expected direction (easier to measure services more likely to be contracted out) though its effect was weak (Brown et al 2008). In each of these models, they used the mean value for each service characteristic measured across all places.

Levin and Tadelis (2009) took the analysis one step further and conducted a survey of 22 local governments asking similar questions about service characteristics but they related them more directly to the management process. They included four measures: measuring and monitoring service quality, need for flexibility, provider scarcity and lock in, and resident sensitivity. These characteristics were assessed on 30 services. *Measuring and monitoring service quality* is similar to Brown and Potoski's ease of measurement variable except that it focuses on the monitoring process of the service, not just the service itself. *Need for flexibility* addressed uncertainty and the need for adaptive responses. *Provider scarcity and lock in* combined the notions of asset specificity and lack of competition into a single measure. They also asked about *resident sensitivity* to problems in service delivery. They found little variability and strong correlation among the first three measures and thus combined all three into a single variable, contracting difficulty, for their models. Subsequent multinomial logit models on sourcing decisions found that contracting difficulty and resident sensitivity were significant predictors of local government contracting in the expected directions (more contract difficulty or more citizen sensitivity, less contracting). However, as with Brown et al, Levin and Tadelis used a single average value for each service and then repeated this over all cases.

We improve on prior work in four ways. First, we use a larger sample, balanced across population size and metro status to assess whether managers' assessments vary by place. Second,

we include measurements of service characteristics (asset specificity and contract management), market characteristics (competition), citizen interest and place characteristics. Third, we directly link local managers' assessments of service characteristics, competition and public interest with their actual sourcing choices. We do not use averages for each service but the actual assessment of each individual manager paired with the individual service sourcing decision. Fourth, we use assessments from the same year. Brown and Potoski and Levin and Tadelis use assessments from a more recent time period than the data on sourcing decision. As managers have learned over time how to better monitor and manage contracts, it is possible that assessments of these service characteristics could change. In addition as we will show below, there is substantial variation in assessment of these characteristics and these vary systematically by place which challenges the prior use of service averages.

Data

Data for this analysis are based on two surveys. The first is a survey of local government managers' assessments of four characteristics outlined above for each of 67 services. The second is the ICMA 2007 Alternative Service Delivery (ASD) survey which measures the sourcing decision. Both surveys were conducted in 2007. The ICMA ASD survey is interested in *how* local governments provide services – in house or via contracting (for profit, non profit, inter-governmental) and has been conducted every five years since 1982. The sample frame includes all cities over 10,000 population and all counties over 25,000. For more descriptive information on the 2007 ASD survey see Warner and Hefetz 2009.

In summer 2007, the authors of this paper in collaboration with ICMA conducted a supplemental survey to assess service characteristics of the services ICMA measures on its ASD survey. The purpose of the supplemental 2007 survey was to gain manager's assessments of the 67 services measured by ICMA on the following characteristics: asset specificity, contract management and

monitoring, level of public interest and level of competition. We asked city managers to rank each service by the extent to which specific physical infrastructure or technical expertise was required, the difficulty of contract specification and monitoring, the level of public interest in service delivery, and the number of alternative suppliers (level of competition). Definitions were pretested with a number of local government officials and survey design experts. See Appendix A for definitions.

Responses were received from 164 municipalities.¹ This supplemental survey provides a remarkably close comparison sample to the full 2007 ASD survey. The majority of respondents were from municipalities under 25,000 (53%), with 22% from municipalities 25,000-50,000, 12 % from 50,000-100,000 population and 12% from 100,000 to 500,000 population. This breakdown is almost identical to the respondent distribution to the full ASD 2007 survey. The majority of responses to the supplemental survey were from suburban municipalities (53%), with the remainder split between metro core (25%) and rural independent municipalities (22%). We combined data from the two surveys for a data set of 118 municipalities (30 metro, 66 suburb, 22 rural) which answered both surveys. On average each municipality provides 38 services yielding a data set of 4745 cases of public service delivery on which all subsequent analysis is based.

Understanding Service, Market and Place Characteristics

The traditional economic approach to understanding whether to “make or buy” a service is based on how specific the asset is and how difficult it would be to manage and monitor a contract. Services which are more asset specific or more difficult to manage are less likely to be contracted out. Specific Infrastructure or Expertise was measured on a scale from low (1) to high (5). Across all cases of service delivery, the average asset specificity is 3.44. See Table 1. Those services with

¹ Surveys were sent to all chief elected officials of US Municipalities for which ICMA had valid email addresses (2207) in June and July 2007. A third email was sent in August to people who had begun the survey but indicated that they would “Finish Later.”

the highest asset specificity are in water and sewer, health, legal service, waste disposal, libraries and museums. Services with the lowest asset specificity are parking lots, vehicle towing and parking meter maintenance. For a detailed description of characteristic scores by each service from the full survey see Appendix 2.

Table 1 Model Descriptive Stats about here

Contract specification and monitoring is measured on a scale from easy (1) to difficult (5). Difficulty in contract specification and monitoring is 2.93 on average across all cases which suggests managers find contract management moderately difficult (1 is easy and 5 is difficult). The hardest to manage contracts are for hospitals, followed by police and fire, public health, sewer and water treatment, as well as human services – child welfare, emergency medical, welfare eligibility, job training, elderly programs and libraries and museums. The easiest services for contract management are similar to the ones with low asset specificity: parking lot, parking meter and vehicle towing. Services with low asset specificity and which are easy to manage are good candidates for contracting out.

We find many of the services which are difficult to manage contracts are also services with high asset specificity. Theory suggests these would be poor candidates for contracting. See Table 2. For police and fire services, and water and sewer this is generally true. However, for human services culture and arts, contracting to the not for profit sector is common (see Warner and Hefetz 2009 for full description of contracting levels by service in the 2007 ASD survey). Due to the complexity of these services, local governments seek to contract out to non-profit (but community controlled) actors with specific service expertise (e.g. homeless shelters, museums). In the case of legal services and utilities which are also highly asset specific and difficult to manage, local governments have come to rely on the private sector which has made investments in infrastructure and expertise that reduce the risk of contracting. This suggests either market confidence or community control

are important in making a decision to contract out despite high asset specificity and contract management difficulty.

Table 2 Theoretical Expectations about here

Market and citizen characteristics like competition and public interest may be as important as service characteristics in determining local government sourcing decisions. ICMA's 2007 ASD survey found on average 31% of respondents face an inadequate supply of private deliverers (Warner and Hefetz 2009). In this supplemental survey, we asked about the level of competition for each of the 67 services. Competition was measured on the following scale: 0= government only, 1 = one provider, 2=2 providers, 3=3 providers and 4+=4 or more providers. On average across all cases of service delivery the level of competition is 1.67. This means there are fewer than two alternative suppliers for the average service. Local services by definition must be provided locally, and for many services there is not a competitive local market of alternative providers. The services with the highest level of competition are: child care, legal services, vehicle towing and tree trimming. These are good candidates for contracting. Less than half of the 67 measured services have two or more alternative providers. Services with the lowest levels of competition are police, fire, libraries, sewer, water and tax collection. These services are more likely to be provided in house or via inter-governmental cooperation.

Local government services generate considerable public interest and the level of interest is related both to service quality and to the process of service delivery. Citizens seek engagement and participation in the process of local service delivery and care must be taken when contracting to preserve such opportunities for citizen involvement. Citizen interest was measured on a scale of low (1) to high (5). Averaged across all cases of service delivery, citizen interest is moderate (average 3.05). The services with the highest citizen interest are the same services as were high in asset specificity and contract management: crime prevention, emergency medical, fire prevention,

police, and water distribution. Such services would have low levels of contracting out. Other services with above average levels of citizen interest include: recreation and libraries, waste collection, public health and inspection services, street repair and snow plowing. Some of these services, such as waste collection and street repair, have high levels of contracting . This suggests that with experience, government managers can successfully contract out services with high public interest – especially if citizens can provide “eyes on the street” which assist with monitoring service quality. The lowest public interest is in support functions.

Table 1 provides the standard deviation of responses for each characteristic and one can see that there is a wide range in responses across responding governments. This range is higher for citizen interest and competition than it was for asset specificity and contract management. Local government is responsive to citizen interest and local market conditions and survey responses show these vary substantially across services. Correlations across the four measures are low, suggesting they capture distinct characteristics (Correlations: asset specificity*contract management= .42; asset specificity*citizen interest= .35; asset specificity*competition = -.23; contract management*citizen interest= .31; contract management *competition= -.21; citizen interest*competition= -.21.)

Understanding Differences By Metro Status

The service differences described above suggest variation by place. In Table 1 we also show average levels for each of the four characteristics across all service cases differentiated by metro status. We can see that there are significant differences in the ranks given by metro, suburb and rural managers regarding asset specificity and contract management. Rural managers tend to rank services as slightly more asset specific and slightly less difficult to manage contracts.

We see even larger differences by metro status in citizen interest. Citizen interest is highest among metro areas, lower in suburbs and lowest in rural areas. This reflects the greater complexity of metropolitan service delivery. Congestion increases externalities and thus public interest in public services. Metro communities also face more heterogeneity of citizen interests. Rural areas, by contrast, have lower public interest in service delivery. Governments tend to provide fewer services in rural areas and the more sparse population reduces some of the externalities that urban congestion creates. The higher level of public interest in service delivery among metro municipalities may explain the lower levels of contracting we find among metro areas as compared to suburbs.

The most striking differences by metro status are in competition which is highest among metro and suburban cases (average 1.7 to 1.8 providers) and much lower among rural cases (average 1.2 providers). The percentage of for profit contracting is lower among rural cases than suburban cases (20% vs 23%). Private market competition is limited for many public services in rural areas, and thus the public market of inter-governmental contracting is an important alternative for rural areas whose level of cooperation is as high (20%) as that of suburban areas. This suggests that rural areas are willing to contract, but where they lack competitive private markets they look to a public market of contracting with neighboring governments. The metro cases show a lower level of both for profit and inter-municipal contracting despite competition levels similar to suburbs. Higher levels of public interest in the service delivery process may reduce metro areas' interest in contracting out. To test for differences by service and place we conduct a multinomial logit regression model.

The Model

We use a probabilistic model, a base-line category multinomial regression that tests the relationship between service, market and citizen characteristics and the actual sourcing decision with additional attention to place characteristics. In this model we include hypotheses on transactions costs, market competition, and place characteristics as shown in table 2.

The probability for a place to provide a service by alternative method j is set to a multinomial logit form, which generalizes the binary case:

$$1) p_{ij} = \frac{e^{x_i' \beta}}{1 + e^{x_i' \beta}},$$

Into the multinomial case:

$$2) p_{ij} = \frac{e^{x_i' \beta_j}}{1 + \sum_j^{J-1} e^{x_i' \beta_j}}, \text{ or in logistic units: } \log\left(\frac{p_{ij}}{p_{iJ}}\right) = x_i' \beta_j.$$

Where $i = \text{place} * \text{service} = 1, 2, \dots, n$ and $j = \text{sourcing methods: public, inter-governmental, for-profit, non-profit, other}$. Other includes all other cases (unspecified or combinations of three or more options) but these do not have meaning for our study and are not reported. Estimates for each reported sourcing choice give the probabilities of that choice. X is a $i * j$ matrix of known characteristics described above, and β_j is a vector of unknown parameters to each alternative j to be estimated by the model.

The log-likelihood of this model is then:

$$3) L = \sum_{i=1}^N \sum_{j=1}^5 n_i \log\left(\frac{e^{x_i' \beta_j}}{1 + \sum_j^{J-1} e^{x_i' \beta_j}}\right), \text{ for every choice } j \text{ by place} * \text{service } i.$$

Thus, by maximizing the log likelihood over the set of unknown parameters we get the estimates for these parameters.

In particular, the choice of a particular sourcing method is conditioned by the service, market and place characteristics. The model prediction is that a place chooses to provide a service by a particular method if it shows the highest probability among all alternatives.

$$4) p_{ij} > p_{im} \quad j, m \in J,$$

Where j and m are paired choices, which belong to the set of alternatives J . The model prediction is based on the rule described in (4).

Model Results

The model estimates are given in table 3, which provides four sets of estimates of the unknown β for the four alternatives in the study. Table 3 also provides the marginal effects, which are the change in probability as a result of a change in the variable value of plus or minus one standard deviation around the mean (or from 0 to 1 in the case of a dummy variable).

In terms of service characteristics we see that asset specificity is not significant among any of the sourcing alternatives. Contract management is significant but only in the inter-governmental cooperation model. When the difficulty of contract specification and monitoring is higher, the probability to use inter-governmental contracts increases. The marginal effect of 10% is the highest effect in that model. Cooperation keeps the difficult to manage service public and thus keeps public control and public scrutiny high. This may be an example of the kind of agile civic market with cooperation at its core that Clark and Bradshaw (2004) describe for difficult to manage services.

In terms of market characteristics we see that competition is the most important variable in our models with the largest impact among our top three sourcing alternatives. As hypothesized, more competition leads to less public delivery (-18%), less cooperation (-8.5), and more for profit sourcing (+20%). Competition has no impact on non-profit delivery. Governments often contract out to a single non-profit monopoly provider.

Citizen interest is significant only in two models – direct public sourcing and for profit sourcing and in both cases it is negative. Services which have a high level of public interest are less likely to be sourced publicly or via for profit contracts. This result supports our hypothesis regarding for profit contracting, but does not support our hypothesis on public delivery. Services with the highest citizen interest (such as human services and culture and arts) are often provided via non-profits and inter-governmental cooperation. Although there is no significant effect of citizen interest in the cooperation and non-profit models, there may be enough outsourcing of the highest public interest services to cause direct public sourcing to be negative. The other high public interest services are in the police and fire categories and these are almost always sourced publicly.

Place characteristics are important in all four sourcing alternatives. Metropolitan places are significantly more likely to source internally (11%) and less likely to use cooperation (-8.3%). This is because metro core municipalities already enjoy economies of scale that make cooperation less attractive. Metropolitan places are also more likely to use nonprofit delivery than suburbs – because they have the diversity of non-profit agencies from which to choose. Rural areas are more likely to use non-profit delivery as well. Interestingly rural areas are slightly more likely to use for profit delivery (+0.3% as compared to suburbs) when the level of competition is controlled. This shows rural willingness to privatize when competition is not a problem.

Overall we see competition and metro status are the variables with the greatest importance across our models. This shows that local government sourcing decisions differ significantly by place. Models focused primarily on transactions costs based on service characteristics miss these important differences. Asset specificity is not a significant determinant of sourcing choice, and contract management difficulty is only significant under cooperation. This reflects the importance of cooperation as a means to manage services where it is difficult to specify and monitor contracts. Competition is the most important characteristic determining sourcing choice. Metro status is

next. Citizen interest is important as well. These results suggest the need to expand earlier theoretical models based primarily on service characteristics and give more attention to place and market characteristics.

Model Predictability

Next we look at the model predictability and find that the model shows close probabilities with regard to the actual observed sourcing frequencies by metro status as shown in Table 4. This analysis looks at the average core metro, suburb, and rural place probabilities to use any one of the alternatives. Rural predictions are quite similar to actual frequencies. The major differences between actual and predicted values are found among suburbs and metro core municipalities. Higher use of direct public sourcing is predicted under metro core than is actually found. By contrast, lower use of cooperation is predicted than found among metro core and suburbs. Inter-municipal cooperation can substitute for direct public delivery. Like direct public delivery, cooperation helps with contract management and monitoring, and can be used to address problems with inadequate competition and contract management difficulty. However it offers the advantage of economies of scale – a benefit over direct public sourcing - especially for suburbs.

Table 4 about here

We expand this ex-ante analysis to explore differences across the scales of transactions costs, competition, and citizen interest measurements by metro status based on the predicted probabilities for each case. In this analysis we calculate the average predicted probability across all cases distinguished by delivery method chosen and rank given to each characteristic. This allows us to see how changes in the rank level of each characteristic are related to changes in the distribution of the four sourcing alternatives, see figure 1.

Figure 1 about here

Asset specificity was not significant in the full model, and we see here that the level of direct public delivery is stable regardless of the level of asset specificity across all metro types. For metro core places, the level of public delivery is higher across all levels of asset specificity but there is a slight shift from for profit delivery to inter-governmental cooperation as manager's assessments of asset specificity rise. For suburbs and rural areas use of cooperation and for profit delivery is remarkably stable as asset specificity rises. This suggests that when asset specificity is high the locality is stuck with the alternative chosen and shifting to another alternative is difficult.

The picture is different for contract management. When contract management difficulty is ranked higher, the level of cooperation is higher and the level of for profit sourcing falls. This substitution between public and private market alternatives is interesting. We see greater preference for a public market of cooperation under conditions of difficult contract management than for a private market. The level of direct public sourcing remains flat. As with asset specificity, contract management difficulty is higher for metro core areas – reflecting the greater complexity of service provision in metro contexts.

Where citizen interest is ranked higher we see an increased preference for direct public sourcing. However cooperation is the next most common sourcing alternative. This reflects the benefit of a public market of cooperation when public interest is high. For profit contracting is uncommon under conditions of high public interest.

When market competition is higher, direct public sourcing as well as cooperation are much lower. For profit sourcing rises dramatically. Non profit sourcing rises slightly for metro and rural places. This confirms theoretical expectations that private market sourcing would increase with competition.

Overall, this analysis supports our hypotheses regarding the relationship between service, market and citizen characteristics on the sourcing decision. It shows the special role of inter-

governmental cooperation as a sourcing alternative and the dramatic importance of competition. Overall, we see that local governments pursue a pragmatic approach to service sourcing and balance the contracting decision with careful assessment of service, market and citizen characteristics. We see considerable differences by place. Our results confirm a broader theoretical perspective than that offered by service characteristics is needed.

Conclusion

Academic literature has pointed to the importance of the nature of the service – asset specificity and the nature of the contract (management difficulty) - as service characteristics that play a key role in determining the level of contracting. These are two critical elements in transactions cost analysis. However our analysis finds that local government managers must also concern themselves with the nature of their local markets – supplier competition - and public interest. We also find the sourcing decision varies significantly by metro status. These results suggest a wider framework for understanding local government sourcing decisions is needed. We present a broader model that includes market, citizen and place characteristics. We test the relative importance of these characteristics with unique values for each service in each place.

Direct public sourcing is highest in services where competition is low, especially among metro core and rural governments. For Profit contracting is higher when competition is high and citizen interest is lower. Inter-governmental cooperation represents an important “public” market alternative when competition is low and contract management is difficult. Cooperation enables local governments to engage markets but still preserve the civic core necessary for effective public service delivery.

More theoretical attention needs to be given to the differences between public market (inter-governmental cooperation) and private market (for profit contracting) sourcing alternatives. These

are the two most common sourcing alternatives to direct public delivery. But they convey different advantages. Private markets work best in situations of high competition and low citizen interest. Public markets perform better in situations where competition is lower and contract management difficulty is higher. Each complements direct public delivery and expands the sourcing choices available to local government managers.

As research moves beyond the dichotomy of public or private delivery and looks more closely at alternative sourcing options, attention must shift from a primary focus on service characteristics to broader concerns with market, citizen and place characteristics. Market and place characteristics are especially important in explaining differences in sourcing decisions among local governments. Our results suggest that local government officials are smart contractors who are appropriately reluctant to contract out when they do not face competitive supplier markets. These data also suggest that research should give more attention to citizen interest and competition when studying the decision to contract out. Service characteristics alone do not explain the differences seen.

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Appendix 1

Specific Physical Infrastructure or Technical Expertise: Services which require special infrastructure (water pipes, treatment plants, ditch diggers) or technical expertise (legal, environmental) lead government managers to worry about lack of competitiveness in supplier markets and whether to maintain internal expertise or technical capacity. High asset specificity means the investments can not be easily adapted to produce another service. Specific Infrastructure or Expertise was measured on a scale from low (1) to high (5).

Contract Specification and Monitoring: Services hard to specify in a contract or monitor are less likely to be contracted out, or require a higher level of performance management expertise on the part of government. Contract specification and monitoring is measured on a scale from easy (1) to difficult (5).

Public Interest in Service Delivery: For many services, the public is not interested in *how* the service is delivered, just that it is timely and of good quality. But for some services the public has a high degree of interest in the *process* of service delivery and opportunities for participation must be preserved. Public Interest was measured on a scale of low (1) to high (5).

Number of Alternative Suppliers: For many services there is only one supplier, government. When contracting, competition is the key to cost savings and choice. Some governments face very limited markets of alternative suppliers, especially for some services. Competition was measured on the following scale: 0= government only, 1 = one provider, 2=2 providers, 3=3 providers and 4+=4 or more providers.

Table 1: Characteristics and Sourcing Decisions by Metro Status

	All		Metro		Subur b		Rural	
	Mean	Std.	Mean	Std.	Mean	Std.	Mean	Std.
Characteristics								
Asset Specificity	3.44	1.23	3.45	1.24	3.39	1.24	3.57	1.18
Contract Management	2.93	1.20	3.01	1.22	2.91	1.19	2.85	1.21
Citizen Interest	3.05	1.41	3.21	1.38	3.02	1.44	2.91	1.34
Market Competition	1.67	1.60	1.72	1.56	1.83	1.62	1.18	1.48
Sourcing Decisions	Pct.	n	Pct.	n	Pct.	n	Pct.	n
Direct Public	48.4%	2,296	54.7%	756	44.6%	1,099	49.1%	441
Inter-governmental	17.3%	822	11.8%	163	19.6%	484	19.5%	175
For Profit	20.5%	974	16.6%	229	23.0%	566	19.9%	179
Non Profit	4.6%	218	7.3%	101	3.0%	73	4.9%	44
Other	9.2%	435	9.6%	133	9.9%	243	6.6%	59
N Cases	100%	4,745	100%	1,382	100%	2,465	100%	898

Characteristics found Significantly Different by Metro Status and by Sourcing Decisions (One-Way ANOVA, $PV < 0.05$); Sourcing Decisions by Metro Status found to have row/column dependency ($X^2 = 115.9$; $p < 0.00$)
 Source: Author analysis of ICMA Alternative Service Delivery survey 2007 and ICMA Service Characteristics survey 2007. 4745 service delivery cases from 118 responding municipalities

Table 2: Theoretical Hypotheses Regarding the Relationship between Sourcing Decisions, Service Characteristics and Metro Status

	Direct Public	Inter-Governmental	For-Profit Contracting	Non-Profit Contracting
Service Characteristics				
Asset Specificity	+	+	-	-
Contract Management	+	+	-	-
Market Characteristics				
Competition	-	-	+	indeterminate
Citizen Characteristics				
Public Interest in Service Delivery	+	+	-	+
Place Characteristics				
Met. Status -Metro Core	High	Low	Low	High
Met. Status - Suburb	Medium	High	High	Low
Met. Status - Rural	High	High	Medium	Medium

Table 3: Multinomial Logit Model Results

Delivery Method	Variable	Parameter Estimate	Marginal Effect
Direct Public	Intercept	2.274	
	Asset Spec.	0.017	-0.2%
	Cont. Man.	0.029	-6.0%
	Citizen		
	Interest	-0.080	-2.5%
	Market		
	Comp.	-0.317	-18.1%
	Metro Core	0.268	11.1%
	Rural	0.313	1.0%
Inter-Govt. Coop.	Intercept	0.992	
	Asset Spec.	-0.041	-2.0%
	Cont. Man.	0.229	10.2%
	Citizen		
	Interest	-0.046	1.2%
	Market		
	Comp.	-0.470	-8.5%
	Metro Core	-0.583	-8.3%
	Rural	0.240	-0.9%
For-Profit	Intercept	0.871	
	Asset Spec.	0.079	2.8%
	Cont. Man.	-0.068	-3.5%
	Citizen		
	Interest	-0.089	-0.9%
	Market		
	Comp.	0.072	20.2%
	Metro Core	-0.229	-4.2%
	Rural	0.314	0.3%
Non-Profit	Intercept	-1.390	
	Asset Spec.	-0.121	-0.3%
	Cont. Man.	0.137	0.2%
	Citizen		
	Interest	0.057	0.8%
	Market		
	Comp.	-0.029	1.1%
	Metro Core	0.924	2.0%
	Rural	0.911	1.3%

Pseudo-R² 0.13
 Likelihood Test X²=560.8;
 p<0.00
 N 4,745

Shadowed cells mean significance level at PV<0.05

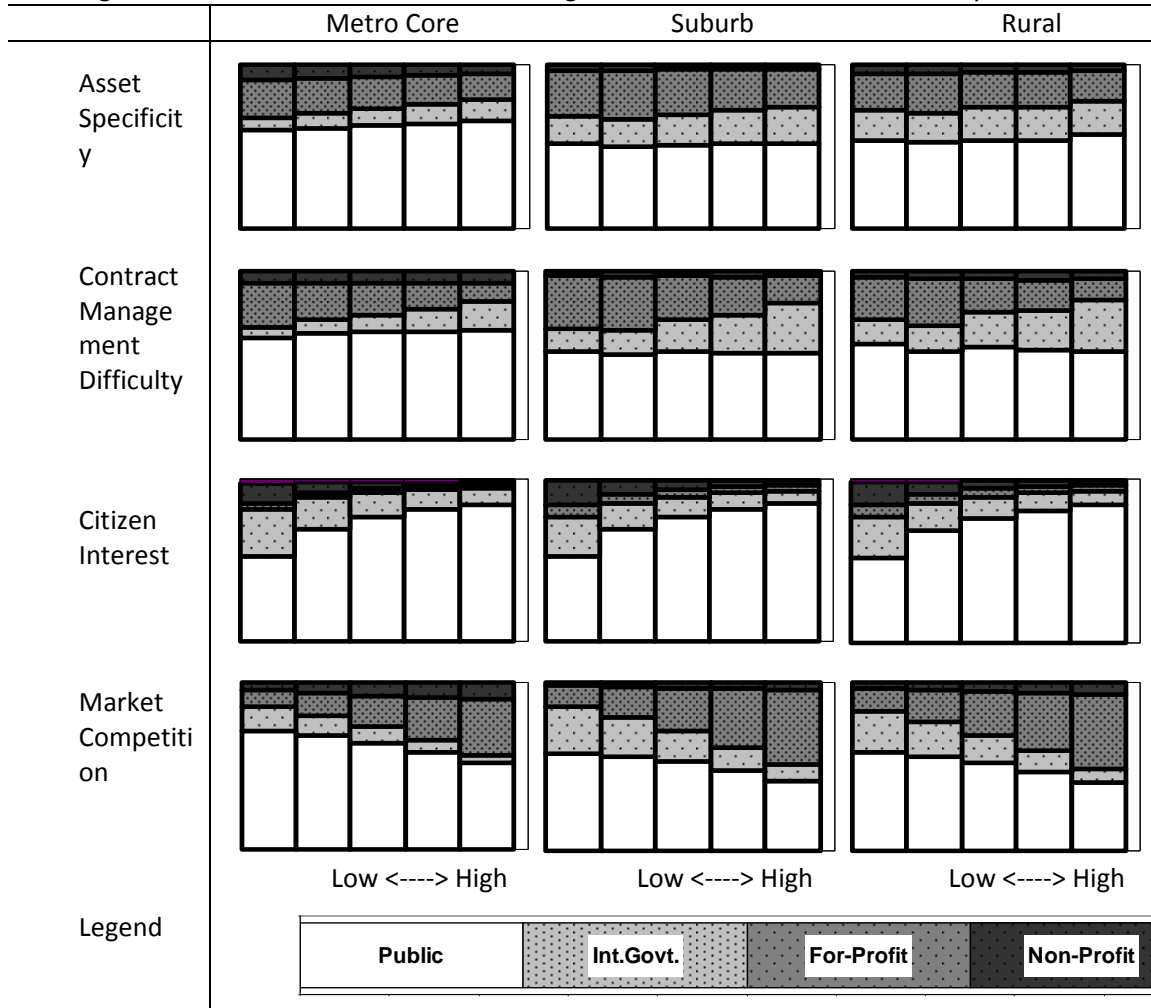
Source: Author analysis ICMA ASD survey 2007, ICMA Service Characteristics survey 2007, Washington DC

Table 4: Observed versus Predicted Probabilities of Sourcing Decisions by Metro Status

	Direct Public	Int. Govt. Coop.	For-Profit	Non-Profit
Metro Core				
Observed Pct.	54.7%	11.8%	16.6%	7.3%
Predicted Prob.	57.8%	9.7%	16.9%	6.5%
Suburb				
Observed Pct.	44.6%	19.6%	23.0%	3.0%
Predicted Prob.	46.3%	17.3%	23.6%	2.8%
Rural				
Observed Pct.	49.1%	19.5%	19.9%	4.9%
Predicted Prob.	50.5%	18.7%	20.1%	4.3%

Source: Author Analysis based on predicted results from multinomial logit models vs observed data

Figure 1: Predicted Distribution of Sourcing Decisions across Characteristics by Metro Status



Source: Author Analysis based on predicted results from multinomial logit model

Appendix Table 2a: Average Scores by Service and Metro Status: Asset Specificity and Contract Management

SERVICE	Asset Specificity				Contract Management Difficulty			
	All	Metro	Suburb	Rural	All	Metro	Suburb	Rural
residential waste collection	2.91	2.80	2.85	3.19	2.17	1.88	2.28	2.23
commercial waste collection	2.83	2.90	2.78	2.89	2.15	1.84	2.27	2.17
waste disposal	3.81	4.12	3.69	3.72	2.82	3.03	2.73	2.77
street repair	3.32	3.30	3.33	3.35	2.56	2.46	2.60	2.56
street/lot cleaning	2.40	2.33	2.38	2.51	1.94	1.89	1.93	2.00
snow plowing/sanding	2.70	2.35	2.70	3.00	2.37	2.23	2.42	2.38
traffic sign maintenance	3.60	3.46	3.71	3.47	2.61	2.49	2.65	2.65
parking meter maintenance	1.87	1.74	2.03	1.65	2.07	2.17	2.08	1.92
tree trimming/planting	2.61	2.54	2.62	2.66	2.34	2.29	2.36	2.34
cemeteries maintenance	2.26	1.91	2.14	2.87	2.07	1.97	2.13	2.06
inspection/code enforcement	3.94	3.88	3.92	4.06	3.43	3.53	3.46	3.23
lots/garages operation	2.18	1.97	2.27	2.23	2.04	2.27	2.00	1.84
bus system maintenance	3.18	3.17	3.36	2.79	2.91	3.14	2.98	2.44
paratransit system maintenance	3.10	3.21	3.05	3.05	2.92	3.03	2.96	2.62
airport operation	3.99	4.34	3.72	4.12	3.47	3.75	3.40	3.25
water distribution	4.45	4.54	4.45	4.35	3.50	3.63	3.55	3.19
water treatment	4.45	4.47	4.47	4.35	3.54	3.64	3.57	3.33
sewage collection/treatment	4.49	4.54	4.49	4.44	3.59	3.79	3.55	3.45
sludge disposal	3.70	3.86	3.70	3.53	2.93	2.97	3.08	2.48
hazardous materials disposal	4.14	4.21	4.20	3.93	3.56	3.59	3.60	3.41
electric utility management	4.20	4.27	4.19	4.14	3.59	3.80	3.67	3.09
gas utility management	4.11	4.25	4.16	3.83	3.55	3.82	3.59	3.05
utility meter reading	2.88	2.56	3.00	2.93	2.37	2.26	2.47	2.25
utility billing	3.03	2.86	3.03	3.24	2.45	2.37	2.52	2.37
crime prevention/patrol	4.07	4.10	3.99	4.26	3.89	4.18	3.95	3.40
police/fire communications	4.28	4.10	4.34	4.34	3.64	3.58	3.80	3.34
fire prevention/suppression	4.35	4.32	4.39	4.30	3.64	3.80	3.74	3.18
emergency medical service	4.40	4.42	4.37	4.47	3.42	3.47	3.50	3.13
ambulance service	4.11	4.08	4.11	4.15	3.17	3.06	3.29	2.96
traffic control/parking enforcement	2.91	2.64	2.96	3.13	2.77	2.55	3.00	2.43
vehicle towing and storage	2.23	2.19	2.23	2.29	2.14	2.03	2.18	2.16
sanitary inspection	3.24	3.47	3.16	3.21	2.93	3.19	2.82	2.90
insect/rodent control	2.74	2.68	2.73	2.88	2.44	2.50	2.37	2.54
animal control	2.98	2.97	2.96	3.03	2.83	2.79	2.81	2.94
animal shelter operation	3.10	2.97	3.15	3.13	2.69	2.64	2.66	2.81
daycare facilities operation	2.99	3.04	3.00	2.91	2.74	2.93	2.67	2.70
child welfare programs	3.29	3.59	3.05	3.52	3.47	3.96	3.28	3.35
elderly programs	3.00	2.91	3.03	3.03	2.99	3.19	2.97	2.83
hospital operation/management	4.14	4.25	4.08	4.14	3.92	3.93	3.87	4.05
public health programs	3.66	3.87	3.49	3.81	3.60	3.63	3.61	3.56
drug/alcohol treatment programs	3.32	3.36	3.14	3.74	3.38	3.25	3.41	3.48
mental health programs operation	3.63	3.92	3.43	3.79	3.53	3.54	3.48	3.65
prisons/jails	4.09	4.41	3.84	4.32	3.73	4.21	3.56	3.57
homeless shelters operation	2.65	2.53	2.69	2.73	2.92	2.83	2.96	2.91
job training programs	3.09	3.19	2.93	3.39	3.05	2.94	3.03	3.26
welfare eligibility determination	2.94	3.07	2.68	3.38	3.11	3.11	3.07	3.22
recreation facilities maintenance	3.30	3.40	3.12	3.58	2.83	2.90	2.79	2.83
parks landscaping/maintenance	2.90	3.03	2.71	3.19	2.47	2.49	2.48	2.44
convention centers/auditoriums operation	3.27	3.55	3.19	3.13	3.02	3.07	3.02	2.96
cultural/arts programs operation	2.79	2.69	2.72	3.18	2.87	2.91	2.87	2.76
libraries operation	3.53	3.63	3.45	3.61	3.07	3.17	2.99	3.15
museums operation	3.39	3.52	3.34	3.38	2.94	3.10	2.95	2.70
buildings/grounds maintenance	2.94	2.93	2.88	3.11	2.45	2.40	2.41	2.59
building security	2.78	2.50	2.82	3.03	2.37	2.24	2.43	2.38
heavy equipment maintenance	3.66	3.51	3.71	3.71	2.71	2.85	2.63	2.71
emergency vehicles maintenance	3.74	3.68	3.77	3.72	2.70	2.93	2.64	2.56
all other vehicles maintenance	3.39	3.28	3.40	3.48	2.61	2.75	2.56	2.58
payroll	3.33	3.15	3.27	3.69	2.37	2.40	2.31	2.50
tax bill processing	3.23	3.28	3.15	3.37	2.56	2.61	2.46	2.73
tax assessing	3.72	3.77	3.64	3.86	3.02	3.09	3.08	2.79
data processing	3.75	3.71	3.70	3.94	2.91	3.03	2.84	2.94
delinquent tax collection	3.00	2.86	2.94	3.29	2.53	2.53	2.43	2.77
title records/plat map maintenance	3.45	3.53	3.32	3.62	2.80	2.69	2.80	2.90
legal services	4.20	4.15	4.17	4.34	2.90	3.15	2.83	2.79
secretarial services	2.61	2.38	2.52	3.09	2.14	1.97	2.21	2.18
personnel services	3.40	3.17	3.35	3.76	2.78	2.79	2.76	2.82
public relations/public information	3.10	3.05	3.05	3.32	2.77	2.74	2.74	2.90

Source: Author analysis of ICMA Service Characteristics survey 2007. N=164 places. Scores ranked from low (1) to high (5)

Appendix Table 2b: Average Scores by Service and Metro Status: Citizen Interest and Market Competition

SERVICE	Citizen Interest				Market Competition			
	All	Metro	Suburb	Rural	All	Metro	Suburb	Rural
residential waste collection	3.61	3.56	3.70	3.44	2.59	2.66	2.82	1.94
commercial waste collection	2.77	2.70	2.93	2.44	2.85	3.10	2.95	2.33
waste disposal	2.80	2.83	2.83	2.69	1.69	1.59	1.92	1.28
street repair	3.67	3.92	3.56	3.63	2.79	3.16	2.92	1.97
street/lot cleaning	2.61	2.64	2.59	2.60	2.01	2.42	2.20	1.09
snow plowing/sanding	3.54	3.48	3.58	3.52	1.76	1.90	1.90	1.32
traffic sign maintenance	3.01	3.08	3.11	2.65	1.66	1.72	1.88	0.97
parking meter maintenance	1.79	2.00	1.82	1.50	1.16	1.14	1.50	0.41
tree trimming/planting	2.91	2.79	2.99	2.83	2.91	3.00	3.09	2.37
cemeteries maintenance	2.39	2.35	2.29	2.61	1.63	1.84	1.72	1.23
inspection/code enforcement	3.72	3.88	3.75	3.46	1.07	1.03	1.22	0.74
lots/garages operation	1.98	2.14	2.00	1.71	1.83	2.09	2.10	0.88
bus system maintenance	2.89	3.08	2.90	2.59	1.04	1.34	1.13	0.44
paratransit system maintenance	2.91	3.00	2.90	2.81	1.23	1.38	1.38	0.62
airport operation	3.10	3.56	2.96	2.81	0.68	0.52	1.00	0.22
water distribution	3.99	4.24	4.00	3.65	0.79	0.78	0.94	0.45
water treatment	3.91	4.14	3.91	3.63	0.88	0.83	1.08	0.39
sewage collection/treatment	3.59	3.62	3.59	3.55	0.67	0.71	0.78	0.35
sludge disposal	2.38	2.29	2.48	2.21	1.28	1.76	1.24	0.86
hazardous materials disposal	3.13	3.29	3.14	2.88	1.51	1.66	1.69	0.85
electric utility management	3.80	4.10	3.74	3.55	1.43	1.37	1.49	1.36
gas utility management	3.54	3.82	3.49	3.32	1.40	1.32	1.50	1.23
utility meter reading	2.48	2.44	2.60	2.19	1.35	1.55	1.43	0.89
utility billing	2.82	2.89	2.95	2.38	1.54	1.91	1.59	0.96
crime prevention/patrol	4.65	4.83	4.65	4.43	0.23	0.34	0.27	0.03
police/fire communications	3.95	4.12	3.89	3.89	0.57	0.65	0.71	0.14
fire prevention/suppression	4.33	4.39	4.41	4.06	0.41	0.33	0.41	0.52
emergency medical service	4.40	4.53	4.40	4.23	1.23	1.16	1.32	1.10
ambulance service	4.25	4.39	4.25	4.04	1.58	1.86	1.54	1.33
traffic control/parking enforcement	3.20	3.18	3.28	3.00	0.61	0.70	0.73	0.19
vehicle towing and storage	2.11	2.11	2.16	1.97	3.18	3.42	3.17	2.94
sanitary inspection	3.00	3.45	2.83	2.93	0.90	0.61	1.26	0.32
insect/rodent control	2.78	3.06	2.74	2.54	2.30	2.61	2.50	1.33
animal control	3.47	3.86	3.36	3.29	0.82	0.61	1.10	0.36
animal shelter operation	2.94	3.22	2.83	2.84	1.28	1.40	1.36	0.97
daycare facilities operation	3.14	3.32	3.02	3.26	3.44	3.70	3.30	3.52
child welfare programs	3.13	3.45	2.92	3.26	1.36	0.96	1.76	0.83
elderly programs	3.34	3.38	3.37	3.21	2.04	2.68	2.09	1.21
hospital operation/management	3.85	4.11	3.63	4.10	2.32	2.52	2.60	1.41
public health programs	3.37	3.70	3.23	3.31	1.21	1.28	1.39	0.73
drug/alcohol treatment programs	2.81	3.11	2.70	2.70	2.66	3.15	2.66	2.13
mental health programs operation	2.82	3.12	2.71	2.75	2.05	2.52	2.09	1.46
prisons/jails	3.27	3.97	2.97	3.14	0.84	0.73	1.15	0.25
homeless shelters operation	2.16	2.60	1.97	2.09	2.00	2.38	2.02	1.45
job training programs	2.52	2.84	2.28	2.67	2.01	2.26	2.03	1.63
welfare eligibility determination	2.25	2.68	2.05	2.21	0.81	0.70	1.07	0.33
recreation facilities maintenance	3.91	4.03	3.81	4.00	1.51	1.64	1.75	0.81
parks landscaping/maintenance	3.47	3.50	3.49	3.39	2.26	2.38	2.60	1.31
convention centers/auditoriums operation	2.58	2.76	2.44	2.71	1.67	2.07	1.84	0.79
cultural/arts programs operation	2.84	3.14	2.75	2.64	2.35	2.71	2.24	2.14
libraries operation	3.83	3.83	3.85	3.75	0.60	0.74	0.65	0.32
museums operation	2.77	2.94	2.82	2.38	1.63	1.70	1.68	1.38
buildings/grounds maintenance	2.55	2.63	2.60	2.31	2.53	2.92	2.64	1.80
building security	2.34	2.43	2.28	2.38	2.26	2.89	2.51	0.94
heavy equipment maintenance	1.98	2.05	2.00	1.86	2.08	2.41	2.24	1.31
emergency vehicles maintenance	2.38	2.51	2.43	2.06	2.08	2.48	2.18	1.34
all other vehicles maintenance	1.99	2.08	2.00	1.88	2.44	2.77	2.42	2.09
payroll	1.64	1.71	1.60	1.66	1.96	2.35	2.07	1.21
tax bill processing	2.61	2.83	2.56	2.47	1.04	1.06	1.24	0.52
tax assessing	3.50	3.60	3.49	3.38	0.71	0.68	0.81	0.53
data processing	2.01	2.08	1.94	2.12	2.28	2.50	2.58	1.26
delinquent tax collection	2.33	2.39	2.30	2.33	1.68	2.32	1.83	0.63
title records/plat map maintenance	2.29	2.28	2.28	2.31	0.78	0.87	0.92	0.40
legal services	2.47	2.58	2.42	2.49	3.28	3.59	3.37	2.71
secretarial services	1.66	1.58	1.71	1.62	2.68	2.86	2.76	2.29
personnel services	1.93	2.03	1.89	1.91	2.03	2.49	2.00	1.62
public relations/public information	2.78	2.87	2.69	2.90	2.31	2.55	2.44	1.63

Source: Author analysis of ICMA Service Characteristics survey 2007. N=164 places

Citizen Interest ranked from low (1) to high (5), Competition no alt. providers (0), to 4 or more providers (4)