The Decision to Contract out: A Study of Contracting for E-Government Services in State Governments
Author(s): Anna Ya Ni and Stuart Bretschneider
Source: Public Administration Review, Vol. 67, No. 3 (May - Jun., 2007), pp. 531-544
Published by: Wiley on behalf of the American Society for Public Administration
Stable URL: http://www.jstor.org/stable/4624595
Accessed: 07/01/2015 11:22

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at http://www.jstor.org/page/info/about/policies/terms.jsp

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.
Government contracting, especially for information technology products and services, has accelerated in recent years in the United States. Drawing on the insights of privatization studies, the authors examine the economic and political rationales underpinning government decisions to contract out e-government services. This article tests the extent to which economic and political rationality influence governments' contracting decisions using data from multiple sources: a survey conducted by National Association of State Chief Information Officers, a survey by the National Association of State Procurement Officers, the Council of State Legislatures, and macro-level state data from the U.S. Census Bureau. Important factors affecting the state-level contracting decision are population size, market size, the competitiveness of the bidding process, the professional management of contracts, the partisan composition of legislatures, and political competition. Political rationales appear to play a major role in state contracting decisions. Some arguments associated with markets and economic rationality are clearly politically motivated.

During the last two decades, as privatization has gained political currency, contracts with private sector organizations have increased dramatically in bipartisan governments. Privatization advocates believe that contracting out is an effective tool for government to reduce costs, increase efficiency, improve services, and encourage innovations (Gore 1993; Kettl 1993; Osborne and Gaebler 1992; Salamon 1989; Savas 1987).

Along with the growth of contracting out, interest in electronic government (e-government) has also grown for many of the same reasons. A substantial number of e-government initiatives have made heavy use of contracting out (Gant, Gant, and Johnson 2002). The popularity of contracting out services such as data processing, Web site hosting, training, and project management has spread across all levels of government. It is believed that contracting helps governments overcome financial difficulties in accessing the esoteric expertise and professional management skills of private firms to develop e-government applications (Brown and Brudney 1998; Chen and Perry 2002).

Growing interest in privatization has fueled many studies of contracting. However, much of the literature has focused on normative propositions, such as why government agencies should or should not contract out (Greene 2002; Hodge 2000; Johnson and Walker 2000; Kettl 1993; Lavery 1999; Millward 1996; Moe 1996; NAPA 1989; O’Looney 1998; Savas 1987, 2000; Seidenstat 1999; Steuerle et al. 2000). Few articles have rigorously analyzed and empirically tested the factors that actually affect a government agency’s decision to contract out. Within the relatively scarce empirical evidence on contracting decisions, most of which is focused on local government or school districts (Boyne 1998; Ferris and Graddy 1986; Hirsh 1995; O’Toole and Meier 2004), there is little empirical information on the effects of the political environment.

This paper attempts to fill this gap by examining the extent to which economic and political factors affect a government’s decision to contract for e-government services. Drawing on theories of privatization and the environment of public organizations, this research constructs a theoretical framework for analyzing government contracting decisions. This framework is then used to develop a series of hypotheses relating to the economic and political motivations for contracting out. To test the hypotheses, we use data from a recent survey by the National Association of State Chief Information Officers, a survey by the National Association of State Procurement Officers, data from the Council of State Legislatures, and macro-level state data from the U.S. Census Bureau. Using a logistic regression model with fixed effects to control for different e-government services, the data are analyzed and relevant results presented. Finally, we discuss the implications of these findings and suggest several directions for future research.
Contracting Out E-Government Services

Contracting out has been a management practice of government from the very beginning of the American republic. Recent emphasis on contracting appears to come from increasing concerns over tight budgets and growing demands for public services. Starting with the Reagan administration, a more conservative philosophy of smaller government has dominated public thinking, promoting the idea of realigning public sector and private sector roles through privatization. More recently, the Clinton administration’s reform initiatives, such as the reinventing government movement and the National Performance Review, encouraged the application of private sector business management practices to the public sector (Osborne and Gaebler 1992). Born from a desire to “make government work better and cost less,” the reformers suggested that governments should seek market rather than administrative solutions to facilitate the delivery of services (Gore 1993). Contracting out was the alternative considered most frequently (Boston 1991; Brown and Brudney 1998; Gore 1993; Osborne and Gaebler 1992). As a result, government contracts with the private and nonprofit sectors have rapidly increased in volume and extended to various service areas (Avery 2000; Chi and Jasper 1998; CSG 1993; Hirsch 1991; ICMA 1997; Schlesinger, Dorwart, and Pulice 1986). Indeed, the market for contracts to provide government services has been growing faster than that of any commercial segment (Wait 2002). The amount of federal spending on service contracts grew from $70 billion in fiscal year (FY) 1990 to $87 billion in FY 2000 (GAO 2001). Surveys of states, counties, and cities have also demonstrated a significant movement toward privatization, particularly contracting (Chi and Jasper 1998; CSG 1993; ICMA 1997).

As e-government initiatives have become popular at all levels of government, contracting for e-government services and projects has increased rapidly. This trend is exemplified by the rapid growth in contracting for information technology (IT) services by the federal government. Specifically, federal government purchases of IT services increased from $3.7 billion in FY 1990 to about $13.4 billion in FY 2000 (GAO 2002). Federal IT contracts were expected to grow at a rate of 16 percent per year between FY 2001 and FY 2006, reaching $13.2 billion and becoming “the fastest-growing segment in the overall federal IT market” (Wait 2002). Nonfederal spending on IT contracts is also projected to soar to $23 billion by FY 2008, up from $10 billion in FY 2003 (Chabrow 2003). Data processing, Web sites, and other IT services in local governments are increasingly being contracted out (Gant, Gant, and Johnson 2002; ICMA 2002; Norris, Fletcher, and Holden 2001).

Proponents of e-government contracting make a number of claims. Contracting has the potential to address problems caused by the shortage of IT skills in public organizations. Lack of technological expertise presents a major barrier to developing e-government applications, especially at the local level (ICMA 2000, 2002). Contracting could also help public organizations overcome financial constraints. When implementation is contracted to outside firms, governments are freed from having to finance large overhead or start-up costs (Brown and Brudney 1998). In addition, e-government contracting could transfer some of the risk of system development to vendors when technology uncertainty is high. Brown and Brudney (1998) argue that e-government contracting could yield ancillary benefits by revealing the true “cost” of implementation, which could, in turn, reduce the risks associated with underestimating system costs in relation to benefits.

However, because e-government applications have certain unique characteristics, the use of contracting raises serious concerns. E-government service contracting may be distinguished from other government service contracting in at least four ways. First, e-government services are not homogenous. Traditionally, IT was used to enhance internal business processes and the production and delivery of services in public organizations. In the past, contracting for IT products and services was categorized as “procurement” contracting—contracting for products and services used directly by a government agency—as opposed to “purchase-of-service” (POS) contracting—contracting for the delivery of government-funded services by third parties to external recipients (Kelman 2002). However, with the advent of the Internet, the World Wide Web has transformed the nature of IT. Many e-government projects not only facilitate the operation of a government’s internal functions but also provide access points and direct services to businesses and citizens. Thus, the procurement/POS contracting split is no longer appropriate for e-government services contracting. Additionally, IT services and products differ across customers, technologies, hardware, software, and management. This type of technology is usually bundled into heterogeneous groups for different contracts. For example, server farms or Web site hosting contracts are quite different from contracts requiring software development. Whereas the former concerns only the renting of the vendor’s hardware, the latter involves collaboration and coordination of intellectual resources between the two parties. Therefore, the diversity of e-government services contracting has important implications for public administration and the use of contracting.

Second, e-government technology, by nature, is rapidly changing. The growth rate of technological change is exponential (Kurzweil 2001). Exponential growth in IT has created an environment in which
forecasting has become increasingly difficult over time. The high degree of uncertainty associated with predicting the future of technology increases demand for management skills, especially contract management, in order to reduce risk. Over the past several decades, many governments have experienced failures in high-tech projects (OECD 2001; NAO 2004; Ni and Ho 2005). Most of these failures may be attributable to poor contract management. For that reason, the Organisation for Economic Co-Operation and Development (2001) suggests that government agencies avoid being at the technological frontier and recommends that governments adopt only proven technologies when developing e-government projects.

Third, some e-government services involve citizen rights and security issues. Government job training contracts may not be that different from similar private sector contracts. However, other e-government services, especially citizen-based information systems, involve critical government information and personal records, including tax and service data. Contracting out such services raises special concerns for privacy and security.

Finally, software development contracting presents new challenges for contract management. Contracting out software development services can bring to government not only the benefit of expertise and shared risk but also the rewards flowing from newly created intellectual property. For example, the Gangnam District of Seoul, a local government in Korea, contracted out several software development projects but retained a share in the intellectual property rights associated with the final product (Bretschnieder et al. 2005). Although this is not a new issue, the development of intellectual property as a result of contracting out raises a number of unique issues—for example, is it appropriate for governments to create new intellectual property that may compete with private firms? Although government expenditures on IT contracts and demand for management capacity involved in e-government contracts are growing rapidly, the growth in knowledge about e-government service contracting is surprisingly sparse (Chen and Perry 2003).

Contracting out software development services can bring to government not only the benefit of expertise and shared risk but also the potential rewards flowing from newly created intellectual property.

**A Framework for the Contracting Decision**

Contracting out is one method of acquiring public services. Kelman defines contracting as "a business arrangement between a government agency and a private entity in which the private entity promises, in exchange for money, to deliver certain products or services to the government agency or to others on the government’s behalf" (2002, 282).

Contracting has long been a practice of the private sector. Private firms contract out not only subsidiary functions and temporary needs but also physical inputs, intermediate or component products, and services used to produce or deliver the main goods or services in which the company specializes (Prager 1994). Contracting out public services and functions is justified by public choice economics, which contends that the public and private sectors have much in common and that their behavior can be explained largely in terms of economic incentives (Buchanan and Tullock 1962; Downs 1957).

However, public organization theorists argue that governments operate in a different environment than private companies, one that is characterized by the absence of economic markets for final product outputs. Moreover, the public environment is distinct from the private environment because of its reliance on government appropriations for financial resources. This reliance produces particularly elaborate and intensive formal legal constraints as a result of oversight by a large array of formal authorities. These constraints reflect political influences and specialized forms of accountability that are not typically faced by private sector firms (Bozeman 1987; Rainey 1997). This unique environment shapes transactions between public organizations and citizens, as well as organizational roles, structures, and processes.

In this paper, we suggest that a government agency's contracting decisions are framed by its economic and political environment. Our theoretical model requires the following assumptions:

- A government agency's contracting decision is an organizational process that is influenced by environmental factors, which are differentiated into two groups—those associated with economic rationality and those associated with political rationality (Bozeman 1987; Bozeman and Bretschneider 1986).
- Characteristics of the government agency, such as its management, which directly define the contracting decision, are shaped by the agency's political and economic environment.
- The nature or characteristics of the service affect the decision to contract for it.

Figure 1 depicts the conceptual framework of our theory. Environmental factors—specifically,
those associated with economic rationality and those associated with political rationality—as well as the nature of services, will be discussed in turn.

**Economic Rationale**

The core argument for the economic rationale is that public sector organizations can deliver services at a lower cost by contracting with private or nonprofit sector organizations than it can through the direct production of services. This presumption is rooted in the standard competitive market model formulation, which suggests that in the absence of a profit motive or an incentive for efficient operation as a result of competitive forces, public sector agencies become inefficient (Sclar 2000). Private contractors operating in competitive markets are under constant pressure to keep costs down often through innovative service delivery (Donahue 1989; Kettl 1993; Pack 1987; Savas 1987).

Since the late 1990s, many local governments have experienced increasing financial stress. Hirsch (1995) argues that local governments adopted contracting as an effort to reduce taxpayer burden. Numerous studies have cited monetary and cost-efficiency considerations as key factors in contracting decisions (Donahue 1989; Hirsch 1995; Kettl 1993; Savas 2000; Seidenstat 1999). However, the empirical evidence on the relationship between fiscal stress and contracting is mixed. In their study of contracting in school districts, O'Toole and Meier (2004) found that high levels of local resources were positively related to the amount of contracting. This result suggests that contracting might be used to provide “enhancements,” or additions to noncore services when slack resources are available. Boyne (1998) found almost equivalent numbers of local governments using contracting under fiscally stressed and nonstressed circumstances. Recognizing that some governments may adopt contracting to improve service quality, Boyne suggests reconsidering the theoretical relationship between fiscal stress and contracting out. Therefore, we offer the following economic hypothesis:

**HE₁:** Governments that are in better fiscal health are likely to contract out their services to enhance service quality, expand functionality, or increase managerial flexibility, which will result in higher levels of contracting than in governments with poor fiscal health.

Economists consider contracting an efficiency-enhancing practice that exploits the merits of economies of scale in a competitive market. Contracting can enhance productive efficiency through economies of scale and economies of scope (Hirsch 1995; Prager 1994). Large-scale production often leads to lower costs because scale economies generate a lower variable cost per unit. Thus, contracting is a more cost-effective alternative for small government units that cannot take advantage of economies of scale. Previous studies on city government services have empirically verified that population size within a jurisdiction is likely to affect the government’s contracting decision (Hirsch 1995; Ladd 1992). These results suggest a U-shaped curve, where economies of scale exist for smaller and larger jurisdictions and diseconomies exist for medium ones.

Larger governments may also benefit from contracting out. First, large governments may face greater pressure to reduce size and costs. Second, when a service is provided by a single contractor that contracts with many departments or with many governments, efficiency gains can be realized through the use of bulk purchases of the service. For example, through centralized purchasing, a government may contract out part or all of its IT services to a single contractor. Another example is when state governments provide bulk purchasing discounts for IT equipment to their constituent local governments. Therefore, for larger governments that are beyond decreasing returns to cost considerations, contracting could generate lower costs through large-scale purchasing. Thus,

**HE₂:** Larger governments are more likely to contract out their services in order to benefit from increasing returns to scale of purchasing.

Price theory states that competition among producers strengthens the bargaining power of the purchaser. In the context of e-government applications, more of the cost savings generated by a contractor are likely to be passed on to the contracting government when alternative contractors for the same service exist. Therefore, the availability of a competitive market plays a critical role in economic rationality for contracting out. We hypothesize that

**HE₃:** Governments with access to more competitive markets for a given service are more likely to contract out such service in order to reap economic benefits.

However, some economists argue that markets are not perfectly efficient mechanisms for allocating resources.
The assumption that markets produce efficient outcomes depends on preconditions that may not exist. Market imperfections can undermine these assumptions, especially when the government is the buyer. First, the competitive market model assumes that a large number of buyers and sellers exist and that there are no barriers to entry. In reality, governments often buy a wide range of goods and services for which there are no preexisting markets or only a limited number of suppliers. Markets for government products may have significant barriers that prevent new suppliers from entering. These barriers could be technological, political, or the result of scale economies attributable to the sheer volume of transactions.

Second, information in a competitive market is assumed to be fully symmetric. Yet information in a contractual relationship is notoriously asymmetric. Principal–agent theory points to two common problems resulting from such asymmetries (Coats 2002; Eisenhardt 1989). Principals supply incentives for agents to act, but asymmetric information provides agents with the opportunity to shirk. The asymmetry of information essentially curtails a principal's control over an agent. To reduce shirking by agents, principals have to monitor their behavior; however, monitoring is costly.

Another problem with the traditional market model is the assumption that no additional costs besides the price are incurred in any transaction. In fact, transaction costs are inevitable in every stage of contracting, from soliciting suppliers and selecting bidders to monitoring contractors and evaluating performance (Sullivan 1987; Globerman and Vining 1996). Contract failure and “backout” scenarios can be expensive. Both tangible and intangible costs may apply. Being locked into a long-term contract with a service provider, a government may be deprived of the flexibility to adapt. Being captured by producers, a government may face the threat of losing not only managerial control but also privacy, confidentiality, and accountability.

These imperfections put government agencies at a disadvantage and raise important questions about the presumed benefits of contracting. Imperfect markets and market failures result in a lack of competition and inefficiency. Several studies have provided mixed evidence that in the absence of competition, private sector firms do not outperform their public counterparts (Donahue 1989; Sclar 2000).

Moreover, the extent of competition does not depend merely on the availability of potential contractors but also on the structure of the bidding and rebidding processes. Collusion among bidders and the monopolistic powers of contractors with large market shares can be leveraged to decrease market competitiveness (Domberger and Rimmer 1994). Thus, Governments that are more capable in terms of facilitating a competitive bidding process are more likely to contract out because they are more likely to reap the economic benefits of contracting.

In addition, the ability to manage contracting relations and enforce accountability must be assessed (Avery 2000; DeHoog 1984; Kettl 1993). Contracting is not a costless activity. Besides selecting bidders, the government’s ability to monitor, evaluate, and award or penalize contractors defines its likelihood of reaping economic benefits from contracting. When a government lacks the capacity to manage contracts effectively, the transaction costs incurred may exceed the potential economic benefits. Therefore, whether the government can efficiently monitor a contractor’s performance is a critical factor in contracting decisions. Thus,

Governments that are more capable in terms of contract management are more likely to contract out to obtain economic benefits.

Political Rationale

Framing contracting decisions strictly in economic terms would make sense if government organizations were insulated from politics. Public agencies, however, unlike their private counterparts, are heavily influenced by politics. Public decision makers have to balance efficiency with political considerations.

The long-standing American hostility to government explains much of the contracting rhetoric. The ideological reasoning for contracting is that government is too large, and large government presents a threat to individual freedom. Consequently, whenever possible, market-based provision of services is politically preferred over the government’s direct provision of services. As antigovernment political ideology prevails within a jurisdiction, the likelihood that a government will contract out increases (Lowery 1982). For example, Dubin and Navarro (1988) found that in local governments with a high degree of support for Democrats, the government was less likely to provide refuse collection using external agents. Previous studies have found that committed political leaders in legislative bodies, as well as key elected executives such as governors and mayors, play a crucial role in introducing privatization (Chi and Jasper 1998; GAO 1997).

The dominant party affiliation of a legislative body can affect contracting out decisions as legislatures with more conservative values representing stronger ties to private sector businesses tend to favor contracting out, while political parties representing low-income workers and unions tend to oppose the practice, leading to our first political hypothesis:
Governments that operate in a more conservative political environment are more likely to contract out for ideological reasons.

However, contracting is also a logical and politically popular strategy for legislators with liberal values to employ in winning public support. Both conservative and liberal governments frequently adopt contracting to grow government programs while creating the appearance of cutting the bureaucracy, to build constituencies for programs, and to advance the traditional goals of political patronage (Guttman 2004).

In addition, competition between parties may result in an absence of party dominance within a legislature. Party composition alone does not capture the complex political environment of a contracting decision. Though contracting out may be associated with political rationality and constituency support, as political competition increases, the checks and balances of political control will prevent overreliance on contracts. Thus,

Governments that operate in a more competitive political environment are less likely to contract out for political reasons because of political checks and balances.

Furthermore, governments, which serve a variety of constituent groups, have multiple goals. Advocates justify contracting out as a solution to alleged government sector inefficiency. However, it is no surprise that governments are inefficient when public policy makers de-emphasize efficiency as a goal of the public sector.

The issue is not an inherent inefficiency but a failure to understand that political goals and motivations drive governmental decision-making processes. Much of the literature criticizing contracting in the public sector argues that the efficiency gains of contracting may be compromised by a loss of equity, citizenship, and accountability (Kettl 1993). The efficiency claim often shades the commercial motive of contracting, shifting government spending toward private firms. Politicians may exploit contracting to reward important constituents (Seidenstat 1999). Contracting initiatives can also be used to advance other policy objectives, such as local economic development.

As local and state economies have become more international and businesses more mobile, governments have developed strategies to attract and retain industries. Contracting decisions may be used to subsidize local economies. Preferential treatment of local contractors, sometimes institutionalized in formal contracting rules, bring both economic and political benefits to a jurisdiction. Even if the economic development logic prevails, the use of in-state vendors could be used to transfer government spending to benefit local private firms—but at a higher cost!

Other policy goals, such as local economic development, may compete with the efficiency goal in governments’ decisions to contract out. Governments that have a legal preference for local contractors are less likely to contract out for economic gain and more likely to contract out for political reasons.

Nature of Service

Political and economic rationales affect services differently. Some services require large infrastructure investments. When a contractor has superior resources and the capability to deliver a given service, government contracting is more likely. Some services, however, are considered “inherently governmental” and thus less likely to be contracted out (Guttman 2000; Moe 1996). Some scholars have suggested that services whose quality can only be evaluated after they are delivered should not be considered for outsourcing (Behn and Kant 1999; Donahue 1989). However, many of these types of services (e.g., health care and human services) are frequently contracted out (Ferris and Graddy 1986; ICMA 1997; Van Slyke 2003). Other scholars have developed criteria for a variety of service characteristics to facilitate the decision to contract out, including stability of demand (Kelman 2002), technology requirements (Brown and Brudney 1998), and legal constraints (Reed and Meyer 2004). Moreover, the use of external producers depends on whether the service is offered by the market. Overall, different services must be evaluated differently in contracting decisions. Therefore, any attempt to explain contracting decisions must control for the type of service.

Research Methodology

Most previous empirical studies of contracting have focused on the federal or municipal level of government and have not looked at IT-related contracting. This paper focuses specifically on contracting for IT services by state governments. It is reasonable to assume that contracting varies across different levels of government and by type of service. State government is one of the major types of governments to seek solutions through partnerships with private sector IT service providers (Gant, Gant, and Johnson 2002), as well as one of the most important developers of e-government applications. To date, most state governments have moved beyond the static information or bulletin board approach to offer a wide range of interactive services on the Web (Ahn, Bretschneider, and Gant 2006). Compared to federal government agencies, state governments are smaller, more heterogeneous, and more sensitive to regional and local needs. Unlike county or city governments, state governments are less constrained by resource availability and management capacity in their decisions to adopt new managerial practices or new forms of information technology.

In the context of state government, agencies are embedded structures that are strongly influenced by centralized policies and institutions. Consequently,
although state agencies make partially independent decisions, they are highly constrained by statewide policies and institutions. Our experimental design takes a state government's decision to contract out a service as the unit of analysis.

**Data**

The data come from multiple sources. First, we use the Digital Government Survey conducted by the National Association of State Chief Information Officers (NASCIO) between October 2001 and January 2002.¹ This survey provides information on decisions made by the state government chief information officer about e-government services—specifically, whether services are developed in house or outsourced. The survey generated responses from 47 states and the District of Columbia, representing approximately 93 percent of the nation's population. Alaska, Oregon, and Florida did not respond to the survey.

Second, we used the Survey of State Government Purchasing Practices conducted by the National Association of State Procurement Officials (NASPO) in 2003.² Forty-six states and the District of Columbia responded. Alabama, Florida, New Jersey, and Pennsylvania did not respond to the survey. This survey provides information on state contract management practices and capabilities.

Finally, data from the U.S. Census Bureau and the National Conference of State Legislatures were collected to characterize each state's economic and political environment.

**Model Specification and Measurement**

The following equation provides our model for the determinants of the contracting out decision by state governments:

\[ y_i = f(\mu_i, m, p) \]

where \( y_i \) is a binary variable denoting whether the state government \( j \) contracts out the service \( i \), \( \mu_i \) is the fixed effect for service \( i \), \( m \) is a vector of market or economic variables, and \( p \) is a vector of political variables.

**Dependent variable.** Our unit of analysis is the statewide decision to contract or not to contract out each of 16 different e-government services (see table 1). The data reflect decisions made by each state's chief information officer for centralized services (obtained from the NASCIO survey).³ Although 47 states responded (excluding the District of Columbia) to the survey, only 46 states responded to the questions regarding the decision to contract out these 16 services, thus generating a total of 632 decisions.⁴ After combining the data from the NASCIO survey with data from other sources and eliminating missing values, we obtained a sample of 573 observations from 42 states. A quick review of table 1 demonstrates that the decision to contract out varies significantly across services, with training being contracted out in 64 percent of the states and portfolio and program management contracted out in only 12 percent of the states.

**Economic variables.** Five variables related to economic forces are included in our estimated model: state fiscal health, state IT market size, the competitiveness of the bidding process, the degree of professional management of contracts, and population.

State fiscal health is constructed as the average percentage of state actual annual general fund revenue (excluding any carry over from previous years) minus general fund expenditures for the years 1998–2002. A negative value indicates decreasing fiscal health or greater fiscal stress. A positive number suggests surplus and slack resources (\( HE_i \)).

### Table 1. State E-Government Services

<table>
<thead>
<tr>
<th>Services</th>
<th>N</th>
<th>Contract Out</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portfolio/program management</td>
<td>32</td>
<td>4</td>
<td>12.50</td>
</tr>
<tr>
<td>Help desk</td>
<td>39</td>
<td>6</td>
<td>15.38</td>
</tr>
<tr>
<td>Data processing/storage/warehouse</td>
<td>41</td>
<td>8</td>
<td>19.51</td>
</tr>
<tr>
<td>Videoconferencing facilities</td>
<td>40</td>
<td>10</td>
<td>25.00</td>
</tr>
<tr>
<td>Network administrative support</td>
<td>42</td>
<td>11</td>
<td>26.19</td>
</tr>
<tr>
<td>Printing/imaging/document management</td>
<td>36</td>
<td>10</td>
<td>27.78</td>
</tr>
<tr>
<td>Desktop/portable PC configuration</td>
<td>38</td>
<td>12</td>
<td>31.58</td>
</tr>
<tr>
<td>Server farm/Web hosting</td>
<td>41</td>
<td>14</td>
<td>34.15</td>
</tr>
<tr>
<td>Project management</td>
<td>43</td>
<td>16</td>
<td>37.21</td>
</tr>
<tr>
<td>Architecture assessment/design</td>
<td>44</td>
<td>17</td>
<td>38.64</td>
</tr>
<tr>
<td>Web site/portal production/framework</td>
<td>45</td>
<td>18</td>
<td>40.00</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>41</td>
<td>18</td>
<td>43.90</td>
</tr>
<tr>
<td>Telephone/voice network</td>
<td>40</td>
<td>18</td>
<td>45.00</td>
</tr>
<tr>
<td>Multimedia/audiovisual production services</td>
<td>28</td>
<td>13</td>
<td>46.43</td>
</tr>
<tr>
<td>Application/software development</td>
<td>40</td>
<td>24</td>
<td>60.00</td>
</tr>
<tr>
<td>Training</td>
<td>42</td>
<td>27</td>
<td>64.29</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>632</strong></td>
<td><strong>226</strong></td>
<td><strong>35.76</strong></td>
</tr>
</tbody>
</table>

The Decision to Contract Out 537
Market size is a compound measure of state business composition from two sectors: management consulting and computer-related services. For each of these sectors, we include five elements to form a composite index: the number of business establishments, the number of employees, the dollar value of annual payments, the dollar value of annual sales, and in-state sales as a percentage of national business sales. The variable is constructed by summing the standardized value of each of the 10 elements. This composite variable captures the variance of the IT and general consulting-related market composition across the states. Negative values indicate smaller than average in-state IT markets, whereas positive values indicate large ones. This composite measure has a standardized Cronbach’s alpha of 0.9929, suggesting a reliable measure. A positive relationship is hypothesized between the market composition and the dependent variable (HE).

The competitiveness of the bidding process is measured along a four-point scale based on the state central procurement office’s frequency of using a multistep competitive bidding process. Competition among bidders and cooperative procurement should lead to lower-cost contracts. States with higher scores are considered to have more bargaining power in the bidding process and therefore are more likely to be involved in contracting out (HE).

Professional management of contracts is also measured on a four-point scale based on the procurement office’s frequency of applying measurable performance requirements in contracts. A more professional contract management system should contribute to the success of contract performance. A positive relationship with the contracting decision is hypothesized (HE).

Population is measured by the state’s population size. We hypothesize a positive relationship between contracting decisions and state population size, suggesting that larger states are more likely to contract out because of the potential benefit of large-scale purchasing (HE).

**Political variables.** Five variables measure the political forces at work in contracting out. Republicans in the lower and upper houses of their state legislatures are measured as the percentage of Republicans in their respective houses before the 2002 election. We impute the missing values of these two variables for the nonpartisan unicameral state Nebraska with the percentage of Republican representatives or senators in Congress from this state, assuming that the party composition of the federal legislators elected from this state reflects the political structure of the state legislative body. States with a Republican governor are identified using a binary variable with the value 1, and the value 0 otherwise. It is hypothesized that each of these three factors will have a positive relationship with the contracting out decisions, as we expect state legislatures and governors with more politically conservative values (Republicans) to favor contracting (HP).

Political competition weights each of the three elected state government units—upper house, lower house, and governor—as equal competitors in the state arena. If one party dominates a state government, there is little competition. We define the following variable for the degree of political competition to be U-shaped. The lowest value, 0, occurs when either party has complete control of all three branches of government or increases as the distribution of power across the three units becomes more contested:

\[
\text{Political competition} = RH + RS + RG \quad \text{if} \quad (RH + RS + RG) < 1.5 \\
3 - (RH + RS + RG) \quad \text{otherwise},
\]

where \(RH\) is the fraction of house representatives who are Republicans, \(RS\) = the fraction of senators who are Republicans, and \(RG\) = 1 if the governor is a Republican and 0 otherwise. Political competition between parties is expected to hinder the decision to contract out because of the process of checks and balances; therefore, a negative relationship is hypothesized (HP).

In-state contractor preference is a dummy variable based on whether the state provides a legal preference for in-state bidders or products. If the coefficient on this variable is positive and significant, it suggests a political rationale, whereas a negative sign suggests an economic rationale (HP).

Table 2 presents summary descriptive statistics for these variables.

**Service dummy variables.** One of the advantages of the fixed effect model design is its ability to control for the effects of service type. In the data set, we include 15 dummy variables for the first 15 e-government services. The coefficient estimates for \(\mu_i\) automatically capture the effect (as compared to the 16th service) of service \(i\) on the decision to contract out.

**Logistical Regression Results**

Table 3 presents the results of the estimated logistic model for these data. As expected, the effects of different services are not homogeneous. Individual chi-square tests and likelihood ratio tests support the view that, all else being equal, different services are contracted out by state chief information officers at different rates. Training is the service most likely to be contracted out, and internal portfolio and program management is the least likely to be contracted out.

The coefficient estimated for state fiscal health has a positive sign and is statistically significant. As states generate financial surpluses, they are more likely to
contract out. This result reaffirms the assertion that governments may contract out for nonefficiency reasons (Boyne 1998; O'Toole and Meier 2004). Fiscal stress could increase the scrutiny associated with new contracts, and a higher standard for fiscal savings may impose greater transaction costs, thus reducing the likelihood of contracting. Although this explanation is not a political rationale, it does represent a rational organizational or bureaucratic response to fiscal stress. Similarly, in states with healthy budgets, slack resources might permit greater flexibility to try innovative solutions, leading to a greater willingness to contract out. Regardless, stress does not appear to behave as an economically rational incentive to contract out.

Our hypothesis for market size is rejected: Instead of a significant positive coefficient, our statistical model produced a statistically significant negative coefficient. A coefficient of -0.1388 for market size suggests that as the market for IT-related services grows larger, states are less likely to contract out for e-government services. There are a number of possible explanations for these results. Again, the single aggregate measure may not adequately capture the differentiation in how these markets match the 16 different services (e.g., construct validity). Assuming the measure is adequate, it may be that as market size increases, transaction costs also increase, and thus finding appropriate vendors for specialized technical services is more difficult, making it more costly to contract for the service. It is also possible that our measure is capturing the size of the IT manpower market more than vendor availability. With larger in-state IT labor markets, it would be easier for government to recruit qualified employees and, over time, to develop adequate technical expertise within government to provide e-government services directly. Again, these results do not support a purely economic rationale for contracting out.

Considering the isomorphic pressures from neighboring states based on a reviewer's comment, we constructed a variable (neighbor) by multiplying the market size variable with the state contiguity matrix.
Table 3 Logistic Regression Results

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Estimate</th>
<th>SE</th>
<th>P &gt; ChiSq</th>
<th>Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental Factors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiscal health</td>
<td>0.3480</td>
<td>0.0697</td>
<td>&lt; .0001</td>
<td>1.416</td>
</tr>
<tr>
<td>Market size</td>
<td>-0.1388</td>
<td>0.0292</td>
<td>&lt; .0001</td>
<td>0.870</td>
</tr>
<tr>
<td>Competitiveness of bidding process</td>
<td>0.3118</td>
<td>0.1411</td>
<td>0.0271</td>
<td>1.366</td>
</tr>
<tr>
<td>Professional management of contracts</td>
<td>0.9720</td>
<td>0.1883</td>
<td>&lt; .0001</td>
<td>2.643</td>
</tr>
<tr>
<td>Population (in million)</td>
<td>0.0242</td>
<td>0.0059</td>
<td>&lt; .0001</td>
<td>1.025</td>
</tr>
<tr>
<td><strong>Political factors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Republicans in house</td>
<td>-0.0640</td>
<td>0.0129</td>
<td>&lt; .0001</td>
<td>0.938</td>
</tr>
<tr>
<td>Republicans in senate</td>
<td>0.0198</td>
<td>0.0120</td>
<td>0.0979</td>
<td>1.020</td>
</tr>
<tr>
<td>Republican governor</td>
<td>0.0511</td>
<td>0.2583</td>
<td>0.0002</td>
<td>2.589</td>
</tr>
<tr>
<td>Political competition</td>
<td>-1.0432</td>
<td>0.0650</td>
<td>0.0249</td>
<td>0.352</td>
</tr>
<tr>
<td>In-state preference</td>
<td>-0.7229</td>
<td>0.2544</td>
<td>0.0045</td>
<td>0.485</td>
</tr>
<tr>
<td><strong>E-Government Services</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portfolio/program management (intercept)</td>
<td>-2.8355</td>
<td>0.9846</td>
<td>0.0040</td>
<td></td>
</tr>
<tr>
<td>Help desk</td>
<td>0.1132</td>
<td>0.0750</td>
<td>0.0007</td>
<td>1.120</td>
</tr>
<tr>
<td>Data processing/storage/warehouse</td>
<td>0.5068</td>
<td>0.0714</td>
<td>0.0001</td>
<td>1.660</td>
</tr>
<tr>
<td>Videoconferencing facilities</td>
<td>1.0663</td>
<td>0.6863</td>
<td>0.1426</td>
<td>2.735</td>
</tr>
<tr>
<td>Network administrative support</td>
<td>0.8738</td>
<td>0.6942</td>
<td>0.0027</td>
<td>2.396</td>
</tr>
<tr>
<td>Printing/imaging/document management</td>
<td>1.1056</td>
<td>0.7031</td>
<td>0.0158</td>
<td>3.021</td>
</tr>
<tr>
<td>Desktop/portable pc configuration</td>
<td>1.4058</td>
<td>0.6825</td>
<td>0.0394</td>
<td>4.079</td>
</tr>
<tr>
<td>Server farm/Web hosting</td>
<td>1.6145</td>
<td>0.6737</td>
<td>0.0156</td>
<td>5.025</td>
</tr>
<tr>
<td>Project management</td>
<td>1.7475</td>
<td>0.6709</td>
<td>0.0092</td>
<td>5.740</td>
</tr>
<tr>
<td>Architecture assessment/design</td>
<td>1.7290</td>
<td>0.6696</td>
<td>0.0098</td>
<td>5.635</td>
</tr>
<tr>
<td>Web site/portal production/framework</td>
<td>1.9914</td>
<td>0.6634</td>
<td>0.0027</td>
<td>7.325</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>2.0253</td>
<td>0.6711</td>
<td>0.0025</td>
<td>7.579</td>
</tr>
<tr>
<td>Telephone/voice network</td>
<td>2.0497</td>
<td>0.6729</td>
<td>0.0023</td>
<td>7.765</td>
</tr>
<tr>
<td>Multimedia/audiovisual production services</td>
<td>2.0964</td>
<td>0.7293</td>
<td>0.0040</td>
<td>8.137</td>
</tr>
<tr>
<td>Application/software development</td>
<td>2.7808</td>
<td>0.6848</td>
<td>&lt; .0001</td>
<td>16.131</td>
</tr>
<tr>
<td>Training</td>
<td>3.1540</td>
<td>0.6932</td>
<td>&lt; .0001</td>
<td>23.430</td>
</tr>
</tbody>
</table>

(used to define which states neighbor each other). This new variable is typically called a spatially lagged variable. However, the estimate of the neighbor variable was not statistically significant when added to the original model (Pr > ChiSq = 0.5799). In addition, we also constructed a vector of spatially lagged variables for each of the service decision variables also by using the state contiguity matrix. Most estimates of these variables, in the context of the base model, were also not statistically significant. Moreover, these additional variables did not significantly change other parameter estimates. Therefore, we found no empirical evidence supporting the view that a neighboring state’s decisions or neighboring state IT markets influence a state’s decision to contract out e-government services.

The competitiveness of the bidding process and the professional management of contracts both have coefficients with positive and statistically significant signs. The positive signs are consistent with the earlier hypotheses that the competitiveness of the bidding process and the professionalism of procurement practices increase the likelihood that states will contract out to extract economic benefits, all other things held constant.

A positive relationship was found between contracting out and state population size. The coefficient is statistically significant at the 1 percent level. This is consistent with our hypothesis that larger organizations possess an economic incentive to contract out services in order to take advantage of economies of scale. This is particularly true for a centralized state agency because it provides the same service to multiple agencies. Consequently, potential gains from large-scale purchasing may affect the contracting decision.

As with the economic variables, the empirical results for the political variables are mixed. The presence of an in-state preference decreases the likelihood that a state will contract out. This turns out to be a statistically significant result that is more consistent with economic than political rationality. In-state preferences lead to higher overall costs, thus reducing the incentive for chief information officers to contract for a service. Interestingly, 23 of the 42 states have a legal preference for in-state vendors and contractors. The existence of such policies clearly demonstrates that political rationality plays a role, but in the context of the highly technical and professional domain of IT management, state information officers see such policies as a constraint on contracting out.

Two of the three variables associated with state elected officials—Republicans in the senate and Republican governor—are statistically significant and positive as hypothesized, but Republicans in the house is statistically significant but negative. The negative sign suggests that Democratic control of a state legislature’s lower house is associated with the contracting decision. This discrepancy somehow
reflects the controversy of contracting out both as a method for reducing government size and for increasing private employment opportunities. The mixed findings blur the ideological discrepancy regarding contracting and reveals the rhetorical value of contracting as a strategy used by both parties to win popular support. The substantively important finding is that the political composition of government does have an impact on the internal decision to contract out services.

The negative and significant coefficient estimate associated with the variable for political competition supports our hypothesis that political competition between parties is likely to hinder the decision to contract out. Divided political control makes taking credit for contract awards more difficult and reduces the incentive for chief information officers to be influenced by political factors.

Overall, the estimated logistical regression equation has relatively high explanatory value. The 16 e-government services in 42 states form a sample of 573 units. With 10 explanatory variables, the model has a maximized $R^2$ of 0.3385, which is similar to the generalized $R^2$ of ordinary linear regression. For policy makers, the professionalization of procurement—including doing away with in-state procurement preferences—creates economic incentives for contracting in order to achieve economic efficiency. Nevertheless, these decisions operate within a political environment and continue to be influenced by political concerns: Political ideology and political competition result in policies that are designed to promote local constituent benefits at the expense of overall taxpayer efficiencies. The result suggests that at the state level, contracting decisions are strongly shaped by political factors, as well as economic ones.

**Conclusion**

Using a framework that integrates both economic and political factors, this study has focused on the contracting out of e-government services at the state level. Our empirical results suggest that, unlike previous studies done at the local government level, political logic is strongly present in state-level contracting decisions. We have confirmed that the political environment of a state significantly shapes the contracting decision. Fiscal stress, though having stimulated many downsizing reforms, is unlikely to drive state-level decisions to contract out e-government services. Rather, the presence of resource slack may offer public officials the opportunity to expand programs or to pursue service quality through contracts. More professional procurement practices do seem to enhance the competition and reduce risks of performance discrepancy, thereby providing a motivation to contract out.

We freely acknowledge many methodological flaws in this study. The use of survey data and aggregate state indicators may hide important details that underlie these contracting decisions. Furthermore, our focus is primarily on the relevant environmental factors and practices, without looking at the specific characteristics of key decision makers within the process. Finally, this study provides only a preliminary review of how political forces might affect contracting decisions and does not analyze the potential impact of these forces on the quality of contracting outcomes.

Nevertheless, this study has important implications for public policy and management. For practitioners making contracting decisions, the following lessons may be useful:

- Politics is an inherent part of the contracting decision. Public administration does not operate in a vacuum. Public decision making is subject to the influence of a large array of conflicting, overlapping, and competing interests embedded in its unique organizational environment. The so-called politics-administration dichotomy rarely exists in public decision-making processes. Rather, policy or management practices that are adopted are typically based on a mixture of both political and economic rationales. Many claims by privatization advocates of "shrinking government" and "making government work better and cost less" are, at most, rhetoric. These prescriptions have been reshaped or distorted in organizational and political reality.
- The quality of contracting decisions should not be judged solely on efficiency gains but more appropriately by opportunity cost. Based on political logic, the benefits of contracting out, such as cost savings and quality improvements, may be transferred to local economic development or directed to specific constituency groups. How to balance this trade-off and gain a maximum benefit is a critical issue in the contracting decision.
- Using the economic logic for contracting out, public officials should understand the conditions and requirements necessary to reap any real economic efficiency. Competition is the logical foundation for contracting. Governments' capacity to facilitate competitive bidding processes and evaluate and monitor contractor performance should be strengthened to avoid potential threats to contract performance and prevent large-scale contracting failures.

---

Fiscal stress, though having stimulated many downsizing reforms, is unlikely to drive state-level decisions to contract out e-government services.
Government officials also need to understand the nature of services. Different services imply different considerations for contracting out. For e-government services contracting, public administrators should realize that not all services are equal. Different IT services demand different attention to contract management. The diversity of e-government services, the uncertainty of technology, the concerns for privacy, secrecy and security, and the emerging issue of intellectual property rights all demand government to develop higher contract management capacity.

For public administration scholars, this paper provides an alternative perspective on the decision to contract out. Arguments associated with market and economic rationality are clearly politically motivated, at least in part. The benefits from contracting out must, by their nature, have political benefits and cannot be completely understood as a managerial activity aimed solely at enhancing the efficient provision of public goods. One important objective for future work in this area is to better understand how public sector organizations can leverage this policy tool to the public’s advantage. In other words, how can a government improve its contract management capacity given the constraints imposed by its political environment? Additionally, as contracts with private sector organizations proliferate, emerging issues such as intellectual property rights of software development have become increasingly important in the public sector context.

Notes

1. NASCIO is a nonprofit association representing state chief information officers, information resource executives, and managers from the 50 states, six U.S. territories, and the District of Columbia. The NASCIO Web-based survey instrument consists of more than 40 questions yielded 349 separate data elements. In 2002, NASCIO released the Compendium of Digital Government in the States. The publication is a compilation of information that was solicited directly from chief information officers on executive IT authority, enterprise IT management, IT financial management and funding, access, usability and visibility, privacy, security and reliability, application development, e-commerce, and internal automation. This publication provides the most up-to-date information on state IT structures and the status of digital government.

2. NASPO is a nonprofit association dedicated to strengthening the procurement community through education, research, and communications. Its membership consists of the directors of the central purchasing offices in each of the 50 states, the District of Columbia, and the territories of the United States. NASPO has monitored changes and served as the focal point for the dissemination of policies and practices that have guided state programs through surveying all 50 states and the District of Columbia for many years. The NASPO survey collects information on state agency fees and charges, vendor fees, request for proposal evaluation criteria, bidding procedures and practices, preference policies, environmental issues, information technology, electronic ordering, requirements for sealed bids, and basis for specifications.

3. In the NASCIO survey, each state is asked to indicate either direct or outsourced offerings for each of the 16 IT services. Based on our definition of contracting out, we use the term “contracting out” instead of the term “outsourcing,” as used in the survey.

4. The missing values in the survey can be attributed either to no responses or to the fact that the services are not provided by the office of the state chief information officer.

5. Multistep competitive bidding is a competitive process that calls for the separate submission of a technical proposal, which may be negotiated, as the first step or steps of the process, followed by a call for a nonnegotiable, competitive-price bid as the final step. The state procurement office may have the authority to use such processes by statute, rule or regulation, or operating procedure.

6. A detailed description of this measurement can be found in Bretschneider and Gorr (1992).

References


