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Transaction Costs Explanations for Proxy Monitoring in Municipal Services Contracting

Lachezar G. Anguelov
TRANSACTION COSTS EXPLANATIONS FOR PROXY MONITORING IN MUNICIPAL SERVICES CONTRACTING

By

LACHEZAR G. ANGUELOV

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Lachezar G. Anguelov defended this dissertation on August 10, 2016.
The members of the supervisory committee were:

Kaifeng Yang
Professor Directing Dissertation

Christopher Reenock
University Representative

Richard Feiock
Committee Member

Frances Berry
Committee Member

The Graduate School has verified and approved the above-named committee members, and certifies that the dissertation has been approved in accordance with university requirements.
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ABSTRACT

There is a vast, and expanding, literature concerning public services contracting. This growing body of scholarship often examines governments’ decisions to outsource service production, as well as the resulting relationships and service outcomes. In the context of local government outsourcing contract management is becoming increasingly important. Holding vendors accountable for service delivery and outcomes is essential in an era of third-party governance. Contract oversight, and monitoring, in particular is highlighted as an essential mechanism. Yet, it is often unclear what monitoring tasks are performed, and who in the contractual relationship is responsible for these tasks. I theorize that, outsourcing high transaction costs services is associated with greater reliance on proxy monitoring when compared to direct government oversight. The characteristics of the outsourced service can create a range of government-vendor relationships, and this is true for monitoring tasks as well. Using data from Florida municipalities I examine the impact of services’ transaction costs on the likelihood public managers rely on proxy monitoring rather than direct government oversight for nine monitoring tasks. I use two-stage Heckman selection estimation to analyze an original dataset of municipal services. The results suggest that, when local governments outsource services that are both asset specific and difficult to measure the reliance on proxy monitoring for some oversight tasks is greater when compared to direct government monitoring.
CHAPTER 1
INTRODUCTION

Today contracting remains a popular topic in public administration scholarship; it is the “Public Administration challenge of our time” (Dubnick & Frederickson, 2010). The production of public services through external agencies has grown substantially (Boyne, 1998), and contracting out by local governments is increasing (Rehfuss, 1989; Girth, 2014). Scholars interested in public service contracting have considered the impact of a range of explanatory variables when investigating public managers’ decisions regarding the outsourcing and management of public services production. Political ideology, transaction costs, market competition, management characteristics, organizational and jurisdictional factors are commonly used (Hefetz & Warner, 2012; Brundey, Fernandez, Ryu, & Wright, 2005). In an effort to capture this range of explanatory factors Brown, Potoski, and Van Slyke (2006) present a summary of public services contracting research that is founded on the interaction of strategic management and planning, public law and institutions, and economic literatures. In general questions concerning what explains the dynamic of contracting, what factors impact contractor performance, and what service characteristics guide production decisions have been central in public administration studies (Warner & Hefetz, 2012; Amirkhanyan, Kim, & Lambright, 2007; Coates, 2002; Lamothe & Lamothe, 2009).

Research findings indicate that organization-specific factors are of great importance (Brundey, Fernandez, Ryu, & Wright, 2005), and key among them is contract management capacity. This seems to be the case because government workers gradually find themselves managing contracts and not actually delivering services (Freundlich, Gerstenzang, & Freundlich, 2003; Romzek & Johnston, 2005; Johnston & Romzek, 2008; Prager, 2008). Contract management capacity can be studied through either macro or micro views. Macro lenses address the construct broadly, and micro lenses focus on distinct contract management components (Ernita Joaquin & Greitens, 2012). As public managers’ responsibilities shift from overseeing service delivery to managing of contractual relations in addition to overseeing service delivery, scholars increasingly recognize the importance of one contract management component in
Brown and Potoski (2003) define monitoring as evaluative capacity of contract management: procedures used to collect performance information and having the staff to do so. Measuring and monitoring performance is critical in the public sector and in public sector contracting, yet few scholars have studied contract monitoring (Amirkhanyan, 2011; Cigler, 1990; Amirkhanyan, Kim, Lambright, 2007; DeHoog, 1985; Girth, 2014; Lambright, 2009; Hefetz & Warner, 2004; Van Slyke, 2007; Marvel & Marvel, 2009; Kamensky & Morales, 2006). What factors explain the use of monitoring tasks in outsourced public service production, and who is responsible for these monitoring tasks are important questions for both theory and practice. These are the research questions guiding the present study.

This dissertation addresses these important governance questions in two ways. Firstly, by investigating the independent impact of outsourced services’ asset specificity and measurement difficulty (defined below) on vendors and third-party monitors’ use of monitoring tasks. Having vendors and third-party monitors perform monitoring tasks for outsourced public services is referred to as monitoring by proxy (Brown & Potoski, 2006). This type of monitoring may be common in practice (Amirkhanyan, 2009), but it is not well explained in transaction costs scholarship on public service contracting. The bulk of public service contracting research is focused on governments’ direct use of monitoring and control in their contracts with vendors for the delivery of services. When studies’ findings indicate that governments are not using monitoring tasks, it is assumed that no monitoring is conducted (Brown & Potoski, 2003). Yet, we know that monitoring tasks can be performed by vendors and third-party monitors (Brown & Potoski, 2006; Yang & VanLandingham, 2011; Amirkhanyan, 2009). Scholars have not explored what explains governments’ choices when it comes to the two types of monitoring: direct versus proxy monitoring. To help fill this gap in the literature three hypotheses are advanced in this study.

Secondly, this study includes high transaction costs (Brown & Potoski, 2005) as an explanatory variable in models that explain the use of proxy monitoring as compared to direct government oversight. Services that are both asset specific and difficult to measure are theorized to be high transaction costs services (Andrew & Hawkins, 2012; Brown & Potoski, 2005). I operationalize high transaction costs services in similar fashion. This means that certain services
are both asset specific and their outcomes are difficult to measure. Scholars have found that the
two transaction cost dimensions (asset specificity and measurement difficulty) can be strongly
correlated. Brown and Potoski (2005) for example find that their measures were positively and
somewhat strongly correlated ($r = .47$). And Levin and Tadelis (2010) reported that their
measures for three transaction costs dimensions were practically indistinguishable:

“When we try to separate out problems with performance measurement, the potential for
holdup, and desire for control and flexibility, we find our survey measures of these problems to
be so highly correlated across services as to be essentially impossible to disentangle”.

The transaction cost literature posits that each of the dimensions might have an
independent influence on various outcomes. Likewise, the empirical models formulated by
scholars include measures for individual transaction costs variables, but not including their
potential interactions may bias the studies (Poppo & Zenger, 2002; Andrew & Hawkins, 2012).
Andrew and Hawkins (2012) are the only scholars, to my knowledge, to articulate expectations
regarding high transaction costs (services where both dimensions are considered high). They
posit that high transaction costs would lead to greater reliance on multilateral adaptive
agreements when compared to restrictive agreements, such as contracts. Other scholars include
interaction terms for the transaction costs characteristics of interest, but do not advance
theoretical expectations. Poppo and Zenger (2002) for example, include transaction costs
interaction terms in their empirical models, but no theoretical expectations are put forth
regarding the joint impact of the transaction cost dimensions. Surprisingly, other scholars have
not investigated the combined effect of transaction costs characteristics rigorously\(^1\). One of the
hypotheses in this study aims to help fill this void in scholarship.

The three hypotheses advanced in this dissertation build on previous Brown and Potoski
(2003) research. The authors find that services transaction costs characteristics are associated
with greater government use of monitoring tasks. I explore whether these characteristics are
similarly associated with a reduction in the use of proxy monitoring with the first two

\(^1\) Ki, Namhoon. (2015). Defection Vulnerability and Transaction Costs Characteristics in
Interlocal Cooperation for Public Service Delivery. Presented at the SPSA Annual Meeting in
New Orleans.
hypotheses. It can be reasoned that an increase in the use of one type of monitoring is mirrored by a reduction in the use of the other. In order to assess the proposed associations, I hypothesize that both services asset specificity and measurability difficulty independently are associated with a reduction in the use of proxy monitoring.

With the third hypothesis in this dissertation I examine the impact of outsourcing high transaction costs services on municipal use of monitoring by proxy as compared to direct government monitoring. I theorize that contracting out a service that is considered to have high transaction costs may be associated with greater reliance on proxy monitoring as compared to direct government oversight. Most transaction costs research is driven by hypotheses that investigate the independent effect of these service characteristics. Public service contracting scholars, surprisingly, have not advanced hypotheses about the impact of services where both variables are assessed jointly. The third hypothesis in this dissertation aims to fill this lacuna.

Transaction costs economics (TCE) is an appropriate framework to explain the use of monitoring tasks for outsourced public services delivery. Brown and Potoski (2003) explicitly study how municipalities use monitoring tasks in response to transaction costs factors inherent in the contracted service delivery. The authors use a transaction cost framework to argue that different risks under contracting prompt public managers to implement varying monitoring procedures that may improve their ability to evaluate vendor performance. The results from their study clearly show that transaction costs risk factors are important for explaining government contract monitoring decisions and “the effects of different contract risks vary across the four monitoring activities” (Brown & Potoski, 2003). Increases in both asset specificity\(^2\) and measurement difficulty\(^3\) are shown to raise the likelihood of direct government monitoring by auditing vendor records and conducting field inspections (Brown & Potoski, 2003).

A limitation of this work is the narrow focus on direct government monitoring. In a later study Brown and Potoski (2006) show that monitoring of contracted services can be transferred to vendors. Their results illustrate that contracting governments often “buy” monitoring activity

\(^2\) Asset specificity here is defined as organization specific assets (human, physical, organization-specific routines) and knowledge not easy to redeploy to alternative uses (Williamson, 1985); specialized investments needed to produce a service (Brown & Potoski, 2003)

\(^3\) Measurement difficulty here is defined as ease of measuring worker performance (Poppo & Zenger, 2002); how difficult is to measure the outcome of the service or to monitor the activities required to deliver the service (Brown & Potoski, 2003)
as well as production activity from vendors when performance outcomes and outputs are easy to measure. In other words, governments can delegate monitoring tasks to vendors. Thus studies that focus on one or the other type of monitoring exclusively may be biased.

This dissertation examines an overlooked aspect of contract monitoring by investigating what explains the reliance on proxy monitoring where third-party oversight and trusting vendors with monitoring tasks is used instead of in-house government monitoring. A limitation of extant contract monitoring studies is the heavy emphasis on direct government oversight. Generally monitoring activities vary greatly in form and complexity and can involve: design, collection, and evaluation of data regarding various aspects of vendor activities (Amirkhanyan, 2009). These activities can be performed directly by governments, but they can also be self-reported by vendors, or they can be acquired through third-party monitors (Amirkhanyan, 2009; Lambright, 2009; Brown & Potoski, 2003; Brown & Potoski, 2006; Marvel & Marvel, 2007). For example, while studying the prevalence of collaborative monitoring Amirkhanyan (2009) shows that in some cases self-reporting by vendors accounts for most of the contract monitoring! Similarly, her study shows that in as many as half (54%) of the contracts under examination a third-party monitor was used! Nonetheless systematic quantitative analyses of what explains the use of proxy monitoring is scarce. Focusing extensively on direct government contracting monitoring could mean that extant studies on the topic are not explaining half, or more, of the monitoring conducted by local governments.

Background

Holding vendors accountable is important for outsourced public service delivery, yet scholars find that the governments’ ability to monitor contractors directly can be problematic. At least in certain cases the ability to monitor and oversee private sector contractors has been reduced (Berios, 2006). Oversight can be inadequate in a number of contracting situations, and lack of sufficient resources can leave vendors as the responsible parties through self-reporting (DeHoog, 1985). Amikhanyan (2009) contributes to the literature on contract monitoring by investigating such situations. In particular, she is interested in the design and prevalence of joint monitoring or monitoring by proxy. Brown and Potoski (2006) similarly point out that governments can monitor services either directly or by proxy. They define proxy monitoring as situations where governments delegate oversight activities to another entity. In their study the
“other entity” is the vendor, but delegating oversight to third-party monitors is also likely as Amirkhanyan’s (2009) study illustrates.

As contracting and the need to hold vendors accountable increases so does the range of strategies used by governments when it comes to oversight. In some cases, governments can act strategically by inserting expectation clauses into the contracts in order to assure vendor compliance (Malatesta & Smith, 2012). Discourse on accountability regarding contractor performance can be ambiguous as some of the research focuses explicitly on what should be measured, and how it should be measured (Blasi, 2002). This approach to studying accountability is also very similar to research on contract monitoring, making the distinction in the literature difficult at times. Scholars indicate that third-party governance in general can create accountability issues, since even well written contracts with specified performance sanctions can be worthless without adequate, vigilant execution (Girth, 2014). This further highlights the importance of monitoring for outsourced service delivery.

Additionally, research findings show that difficulties with monitoring can result in reverse contracting (Hefetz & Warner, 2004). This is the case because writing as well as enforcing contracts is costly (Levin & Tadelis, 2010; Yang, Hsieh, & Li, 2009). Monitoring costs can therefore impact the overall “make or buy” decision. Governments’ contracting out decisions may be based on the assessing costs of producing the service directly on the one hand, versus the combined costs of contracting and monitoring vendor performance on the other. Inadequate monitoring and control can also lead to outcomes contrary to privatization promises: lower savings (Sclar, 2001). Thus it is not surprising that higher levels of monitoring are associated with higher levels of contracting out, and lower levels of monitoring lead to contracting back-in (Hefetz & Warner, 2004; Warner & Hefetz, 2012). In other words, in cases of contracting out where monitoring is not adequate we can expect higher rates of governments bringing services back in-house. Presumably monitoring is important for successful public service outsourcing. Managers can use formal and informal monitoring tools, and can be constrained by their organizations’ capacity and environmental pressures (Van Slyke, 2007). Therefore, public managers use a variety of oversight tasks and methods in their efforts to monitor vendor performance throughout the service delivery process.

Scholars have used a wide range of definitions when studying contract monitoring. It is not unusual to see as many as fifteen items included in the operationalization of contract
performance measurement and monitoring (Amirkhanyan, 2011). Van Slyke (2007) depicts the following monitoring mechanisms: collocating staff to vendor’s office, using staff to perform audits, using financial audits conducted by comptroller office, contacting vendors on consistent basis, performing site visits, requiring reports, enforcing (corrective) plans, using client surveys as evaluation tools, relying on feedback, and contracting with third-party monitors. Warner & Hefetz (2012) use three measures to operationalize monitoring, their index consists of items pertaining to desire to reduce costs: monitor service quality, monitor service costs, and use of competitive bidding. Other scholars use a broader definition of service monitoring tools: any source of information used by government agency to monitor service inputs, outputs/outcomes that a contracted service provider is required to fulfill under contract (Lambright, 2008). And often monitoring is depicted as a process that starts with “service specification and continues with government oversight and assessment of service delivery” (Hefetz & Warner, 2004). Such broad definitions of monitoring are not uncommon in the literature, and any source of information that is used by government agency to verify inputs, outputs, or outcomes of vendors can be used (Lambright, 2009). As monitoring can consist of a vast array of tools, scholars typically focus broadly on the process, or narrow their research to specific tools. An example is the use of reporting forms government agencies require vendors to complete (Lambright, 2009).

Additionally, scholars have studied governmental use of program monitoring and auditing to verify fiscal and programmatic performance of contracted service producers (Blasi, 2002). Amirkhanyan, Kim, and Lambright (2007) define effective contract monitoring as: government collection of information that captures the quality and quantity of services, and the use of that information to evaluate performance and make decisions. This could include both fiscal and programmatic performance assessments.

Also, scholars often are addressing monitoring indirectly. For example, Romzek and Johnston’s (2002) dependent variable – effectiveness in contract implementation – is conceptualized as government being able to obtain timely and adequate reporting from contractors, and the ability to use the collected information to evaluate performance and undertake corrective actions. Framed in such ways the discussions of effective contracting practices hinge heavily on governments’ use of oversight mechanisms as studied by other scholars.
In addition, researchers sometimes use contract management and monitoring interchangeably. For example, Van Slyke and Hammonds (2003) define management capacity as the use of financial and informational resources to hold contractors accountable. The authors further assert that public managers need to be actively involved in contract formulation, implementation, and evaluation process to verify vendors’ performance. This definition of contract management capacity closely resembles Marvel and Marvel’s (2007) operationalization of contract monitoring tasks. Thus the study of contract monitoring is often blurred with discourse regarding improving public service accountability (when services are outsourced), and broader themes of contract management capacity.

**Objectives and Significance of the Research**

This study is intended to advance the literature on contract monitoring in three ways. First, I extend Brown and Potoski’s (2003) work by focusing on what explains the prevalence of proxy monitoring as compared to direct government oversight in outsourced service production. I operationalize governments’ use of vendor monitoring and third-party oversight as occurrence of proxy monitoring. In their earlier work the authors explicitly investigate the impact of transaction costs factors on municipal use of monitoring tasks. A limitation of the analysis is the data used in the study. The authors used a survey instrument where respondents were asked whether the particular monitoring task was used. Managers then scored 1 if the function was used, and marked zero otherwise. Nonetheless their later work clearly shows that the same factors also affect monitoring by proxy (Brown & Potoski, 2006). What then is the manager’s response if the function is performed by the vendor as stipulated by the contract, or by a third-party? If local government managers are asked whether field observations are conducted they may answer “yes” for cases where public officials visit the sites; they may also answer “yes” for cases where third-party monitors perform that function. The result is an imprecise understanding and measurement of total monitoring efforts. This study contributes to extant research by using data where municipal managers are also asked whether a vendor or third-party monitor is performing the monitoring task. Contract monitoring choices in this study include: direct (in-house) government monitoring; third-party monitoring; and vendor monitoring.

Similarly, to Brown and Potoski she suggests that performance measurement is delegated to contractors, thus vendors are engaged in the evaluation process. Alternatively, when
governments inspect performance directly, public officials are more likely to use unilateral procedures. In her empirical models she accounts for government-vendor relationships and operationalizes the three options above as independent variables. In the present study these options are used to create the outcome variables of interest. The two oversight options used in this dissertation include (1) direct government monitoring, and (2) proxy monitoring (consisting of vendor monitoring and use of third-party monitors). No other empirical study, to my knowledge, examines the likelihood of municipalities to adopt one of these approaches to monitoring relative to the alternatives. Yet we know that vendor performance information is acquired through both direct and proxy monitoring (Amirkhanyan, 2009).

The second contribution of this study is the use of a broader range of monitoring tasks. By doing so it also extends the Brown and Potoski research on oversight functions. For the purpose I use the Marvel and Marvel (2007) classification of monitoring extent to operationalize the scope of oversight efforts expanded by local governments. By focusing on nine monitoring tasks this study intends to capture the range of oversight activities occurring throughout the service delivery process (Marvel & Marvel 2007). In their research Marvel and Marvel interpret ten tasks from four distinct categories of monitoring to summarize a continuous, latent variable measuring the frequency and likely intensity of monitoring efforts.

The authors divide their monitoring measures into four categories to reflect where the activities fit in the service delivery process. The oversight tasks are intended to include activities undertaken to control the services provided by specifying their characteristics (upfront monitoring), process monitoring occurring as services are provided (process monitoring), attempts to measure service outcomes (ex post monitoring), and efforts to use the results of monitoring to adjust incentives (monitoring based incentives). Only the first three categories are used in this study as the last set of functions applies more to results of monitoring efforts, rather than monitoring efforts themselves. The monitoring tasks included in this study consist of upfront monitoring (setting work plans, and setting performance targets); process monitoring (assessment of compliance with rules, regulations, and work plans, monitoring citizen

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4 The models’ outcome variables are determinants of collaborative activities (contractor negotiates and discusses performance measurement; governments asking contractors for input; contractor input is incorporated; communication affects performance measurement). The independent variables capturing the government-vendor relationships include three sets of monitoring arrangements: vendor self-reporting; government inspections; third-party monitoring.
complaints, verifying service was delivered according to contract, and financial audits); as well as \textit{ex post} monitoring (measuring results of the service, measuring citizen satisfaction).

Brown and Potoski (2006) acknowledge that their use of four monitoring activities is limited, but defend the choice of these oversight tasks as representative of the basic types of monitoring done for the service of interest in their study: refuse collection. They only focus on the following functions: random spot check of record, formal tracking of missed streets, citizen surveys, monitor citizen complaints. Similarly, in their earlier work they also focus on four functions: monitor complaints, citizen surveys, vendor audits, and field observations (Brown & Potoski, 2003). But in this study the authors include the full range of services included in the ICMA database for their analyses. Using the Marvel and Marvel list of functions improves the Brown and Potoski studies as it captures a range of monitoring activities that span the entire service delivery process.

The third contribution of this dissertation is that it examines the impact of high transaction costs on monitoring choices. High transaction costs services are those where both asset specificity and measurement difficulty are considered high. As noted above the majority of transaction costs studies focus on what Brown and Potoski (2005) classify as “mixed transaction costs” services. These are services where one of the characteristics is high, and the other is low. In this dissertation I hypothesize that outsourcing high transaction costs services should be associated with greater reliance on proxy monitoring as compared to direct government oversight. The two reasons for the expected association are elaborated below in the Organization of This Study section.

In general, this study will enhance scholarly knowledge of public service contract monitoring from a transaction cost approach. TCE is a common theoretical framework used to explain boundary decisions (Holcomb & Hitt, 2007; Poppo & Zenger, 1998). These boundary decisions are also referred as organizations’ “make-or-buy” choices. Transaction costs are also frequently used to explain contracting in the public sector (Williamson, 1999; Malatesta & Smith, 2013; Levin & Tadelis, 2010; Brown & Potoski, 2003; Brown & Potoski, 2003a; Brown & Potoski, 2005; Warner & Hefetz, 2012). Scholars have used TCE to explain “make-or-buy” decisions and vendor choices, contract formulation and vendor relationships, and dynamic contracting choices (Brown & Potoski, 2003a; Carr, LeRoux, & Shrestha, 2008; Hefetz &
There is scant use of the framework to explain monitoring choices. This is surprising since monitoring choices can be conceptualized as governance structures and “applications of transaction costs approach require that transactions be dimensionalized and alternative governance structures be described” (Williamson, 1981). The three hypotheses in this dissertation aim to contribute to the growing body of empirical literature on TCE explanations of oversight choices in local government public service contracting.

**Organization of this study.** Following this introductory chapter, Chapter Two reviews the literature on Transaction Cost Economics as applicable to public service contracting and oversight. Empirical evidence shows strong support for the framework’s ability to explain a range of contracting outcomes. In the final sections of the chapter I make the case for the theory’s applicability to studying local government contract monitoring.

Chapter Three presents the theoretical framework of the dissertation. In this chapter three hypotheses are advanced. With the first two I hypothesize an independent impact of asset specificity and measurement difficulty on the likelihood that municipalities use monitoring by proxy. I make the case that if direct government monitoring is increased for services that are asset specific as well as for services that are difficult to measure, we should expect an associate decrease in the use of proxy monitoring for these services.

The third hypothesis extends Brown and Potoski’s work and proposes that what they perceived as a decline in direct government monitoring is in fact associated with an increase in proxy monitoring. Whereas they posit that for services that are very difficult to measure governments do not monitor vendor performance, I hypothesize that they instead engage in proxy monitoring when these services are also asset specific. I do not simply assume monitoring to be abandoned by local governments as it becomes too costly. But as Brown and Potoski (2006) later show to be the case with a low transaction cost service, it is likely municipalities simply outsource some of the monitoring functions (use monitoring by proxy).

In situations where governments outsource services that are asset specific and difficult to measure the need for effective monitoring is compounded. Contracting out asset specific services may result in longer contracts with a single vendor (this is further explained in the chapter). This
type of contractual arrangement may appear to reduce direct government oversight for services that are difficult to measure. Contracting governments may engage in two types of proxy monitoring depending on the nature of the government-vendor relationship. One would be to trust the vendor with monitoring tasks – length of relationship and repeated interactions are expected to lead to trust-based relationships – and the other would be to use a third-party monitor if trust is not established.

Chapter Four presents the research design and analytic techniques used to test the hypotheses advanced in the third chapter. The first section outlines the sampling strategy, data, and measurement. The following sections outline the quantitative analyses conducted in the study. Two-stage Heckman selection models are used to test for possible selection bias. The null hypothesis that the selection process (decision to contract) and the outcome process (monitoring choice) are independent could not be rejected for any of the binary models tested in the chapter. As a result, the estimates for the monitoring choices models are presented.

Chapter Five describes the results of the quantitative analyses. Since no selection bias was observed when estimating the Heckman selection models, this chapter reports the results of nine logistic regressions. Five of the models are significant, and the results find support for two of the hypothesized associations. Asset specificity is not found to be an important factor in determining whether governments use proxy monitoring as compared to direct contract oversight. Measurement difficulty on the hand is significant in all five models. As expected if governments outsource a difficult to measure service the probability of using proxy monitoring is lower compared to direct government oversight for all five monitoring tasks. More importantly for services that are considered to have high transaction costs (these are services that are difficult to measure and are asset specific) the association with proxy monitoring is positive and significant. In other words, outsourcing high transaction costs services is associated with an increase in the use of proxy monitoring as compared to direct government oversight.

Chapter Six concludes the study with discussion of the theoretical and practical implication of the findings from the analyses. The strengths and limitations of the research are outlined, and agenda for future research is proposed.
CHAPTER 2
LITERATURE REVIEW

The research questions in this study relate to the use of monitoring tasks in outsourced municipal service production. Because monitoring tasks here are viewed as responses to risks associated with the characteristics of services during production I build on the transaction costs economics literature focused on public service contracting. The literature has been centered on the “make-or-buy” decision and vendor selection. Few scholars have examined the alternative governance structures (Williamson, 1981) resulting from these two important decisions. And when they do, the literature is scant and focuses on simplified binary choices where classical or relational contracting studies are the norm.

The governance structures, including management and monitoring choices, resulting from the outsourcing of government services are nuanced. Once governments outsource service production they have to write and enforce contracts. These are costly activities and oversight is necessary since it is possible for vendors to shirk. If they do, governments are in a particularly difficult situation. Citizens will blame the governments for poor services even though it is the vendor that has failed to abide by the contract. Local governments can use various monitoring tasks in response to the transaction costs factors inherent in service delivery. Generally, the assumption is that governments perform these tasks themselves, however they may use vendors and third-party monitors as well. The majority of the literature focuses on government actions, and/or government relationships with vendors grounded in trustworthiness. This is particular the case for relational contracting studies where trusting the vendor to deliver the services and working collaboratively with vendors are the themes.

This literature review begins by discussing the large body of theoretical and empirical scholarship that shows the significant contributions of transaction costs economics for understanding contracting decisions and resulting governance structures (Brown & Potoski, 2003a; Brown & Potoski, 2003; Brown & Potoski, 2005; Brown & Potoski, 2006; Carr, LeRoux, & Shrestha, 2008; Andrew & Hawkins, 2012; Hefetz & Warner, 2012; Poppo & Zenger, 2002; Lamothe & Lamothe, 2012; Lamothe, Lamothe, & Feiock, 2008; Warner & Hefetz, 2012; Shrestha & Feiock, 2010). It will then discuss the scholarship theorizing and empirically testing
the role of various factors on the use contract monitoring tasks, and who in the contractual relationship performs these tasks (Brown & Potoski, 2003; Brown & Potoski, 2006; Amirkhanyan, 2009; Marvel & Marvel, 2007). These scholars are primarily concerned with what tasks are being performed, but also with the possibility that governments are not the only actors monitoring outsourced service delivery.

**Transaction Costs Economics and Government Service Provision**

Research on government services contracting rose to prominence with the New Public Management movement and questions focused on “make-or-buy” decisions and vendor selection. Scholars started emphasizing the role service characteristics’ transaction costs in making these decisions. TCE has been used extensively as a theoretical framework to explain firms’ boundary decisions which are essentially “make-or-buy” decisions (Holcomb & Hitt, 2007; Poppo & Zenger, 1998; Schepker, Oh, Martynov, & Poppo, 2013; Geyskens, Steenkamp, & Kumar, 2006; Barthélemy & Quélin, 2006; Levin & Tadelis, 2010).

Organizations can decide what services to provide in-house through hierarchical integration and for which ones to rely on market exchanges. Similarly, in the public sector, governments have the choices to produce services in-house or rely on vendors from the market place to deliver the service on their behalf (Malatesta & Smith, 2012; Warner & Hefetz, 2012; Levin & Tadelis, 2010). Producing services directly would require governments to hire and train personnel for the specific requirements associated with services’ delivery. On the other hand, governments can purchase these skills on the market and have vendors deliver services. When organizations decide to rely on the market, they typically outsource some or all services, or portions of services, to vendors.

**Theoretical Predictions**

In both public and private settings, transaction costs logic can help explain the impact of service characteristics, such as asset specificity, measurability difficulty, and uncertainty, on decisions regarding contracting with vendors or producing services directly. In general, as difficulties associated with measurability and/or concerns regarding asset specificity increase, the transaction costs to write, manage, and monitor contracts are amplified (Williamson, 1985; Levin & Tadelis, 2010). If these transaction costs characteristics are considered low, governments
should be more likely to outsource service production to other public or private organizations. The general propositions of the theory suggest that managers align the governance features of interorganizational relationships to match the expected exchange hazards.

Issues associated with specialized investments, difficulties with measuring performance, and uncertainty are highlighted as sources of exchange hazards. These exchange hazards can consist of adverse selection\(^5\) and moral hazard\(^6\). In response managers craft complex contracts that define the solutions (some authors also call them remedies) to these hazards. Additionally, they can also specify the processes for resolving unforeseen outcomes. When such contracts are considered to be too costly to design, implement, and enforce, managers may opt to vertically integrate: produce the services in-house.

The earlier literature is limited by its focus on “make-or-buy” and vendor selection decisions. Governments can choose which services to deliver to their citizens, and also how to provide them. The production choices for these services typically range from fully internalized production on one extreme to governments fully outsourcing service delivery to markets on the other. Given this range of possible production choices, why do governments select the service production mechanisms they do has been an important question in the literature (Brown & Potoski, 2003). The transaction costs framework is often used to argue that governments select production mechanisms in order to minimize risks associated with the type of service being produced, the nature of the market place, and potential goal incongruence between government and vendor (Brown & Potoski, 2003; Carr, LeRoux, & Shrestha, 2008).

The make-or-buy decision can consist of as many as five production mechanisms (Brown & Potoski, 2003; Lamothe, Lamothe, & Feiock, 2008; Warner & Hefetz, 2012; Carr, LeRoux, & Shrestha, 2008; Hefetz & Warner, 2012; Ferris & Grady, 1994). Thus scholars interested in public service contracting study a plethora of delivery options with an array of vendors (Warner & Hebdon, 2001). Brown and Potoski (2003) were some of the early scholars to simultaneously examine how governments make choices across a wide range of alternatives using the transaction costs framework.

Their analyses focus on explaining internal production, joint contracting, complete contracts with other governments, complete contracts with private firms, and complete contracts

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\(^5\) Situations where vendors promise something they cannot provide.

\(^6\) Self-interested attribute described as opportunism (Williamson).
with nonprofit organizations. The authors define joint contracting in two ways. One, as a form of external production where a government contracts with an external vendor while retaining a portion of the service production in-house. The other, is a situation where government contracts simultaneously with several vendors for the same service. This way, the authors content, governments can verify pricing and quality of one vendor against their own performance, or against other vendors.

Similarly, Carr, LeRoux, and Shrestha (2009) examine three production options consisting of (1) internal production; (2) joint contracting or complete contracting with other government; and (3) production by private or nonprofit organization. The emphasis in this research is on measures capturing in-house production, intergovernmental arrangements, and nongovernmental production. Nongovernmental production in this case is contracting with either for-profit or nonprofit organizations. But since the authors’ focus is on intergovernmental arrangements the nongovernment external production is of limited interest contrary to the Brown and Potoski research.

Andrew and Hawkins (2012) are also interested in intergovernmental arrangements for service delivery and examine the formation of multilateral agreements. These scholars account for two types of agreements that are influenced by asset specificity and measurability of goods and services. First, they focus on adaptive multilateral agreements allowing for greater discretion and flexibility. These types of cooperative arrangements can be analogous to relational approaches to governance as studied by transaction costs scholars (Poppo & Zenger, 2002). The restrictive multilateral agreements studied by Andrew and Hawkins (2012) provide procedural safeguards, clearly delineate authority, and clearly specify stated outcomes. These types of exchanges also include contracts, which are essential for studying make-or-buy decisions in local government service provision.

**Empirical results for asset specificity.** All of the studies reviewed here find support for the impact of services’ asset specificity on choices governments make regarding service provision. The choices are rarely simply “make or buy”. The “buy” option spans a range of possible vendors as outlined in the paragraphs above. Therefore, the array of sourcing outcomes is nuanced and scholars use multinomial, as well as binary models when examining these choices.
Brown and Potoski’s (2003) analyses show that for services where monopoly provision is likely due to high asset specificity governments typically contract with other governments rather than private firms. This is the preferred contracting choice in order to minimize the likelihood of vendor opportunism. It is commonly believed that for-profit partners are more likely to act opportunistically, whereas governments are perceived as more trustworthy contract partners for public service delivery.

These results however do not support the basic transaction cost hypothesis which states that higher asset specificity would increase the likelihood of internal production. TCE reasoning suggests that if exchange partners are to engage in transactions where they each have to make investments specific to the transaction the risks of monopoly provision, holdup and counterholdup are greater. Under these conditions it is expected that governments will prefer internal production rather than purchase services from the market place. The empirical evidence in Brown and Potoski’s (2003) study shows that governments are likely to rely on market exchanges for asset specific services. But when they do, the contract partner is likely to be another government.

Carr and his co-authors (2009) find somewhat conflicting results for the impact of asset specificity on sourcing decisions. In their study the increase of asset specificity makes reliance on two external modes of production likely. First, consistent with Brown and Potoski, their analyses show that as services become more asset specific the probability of provision using full or joint contracting with other governments increases relative to internal production. But the same is true for the likelihood of nongovernmental provision by using either for-profit or nonprofit vendors. Their results show that increases in asset specificity increases the reliance on external production relative to in-house service delivery. Whereas Brown and Potoski find that contracting with other governments is more likely when asset specific services are outsourced, Carr and his co-authors show that increases in asset specificity lead to greater reliance on nongovernmental provision in addition to contracting with other governments. Both of these findings are inconsistent with TCE logic that posits such services should be internalized due to the increased costs.

Some scholars on the other hand find asset specificity not to have an impact on any sourcing outcomes. Thus this service characteristic may not be an important factor for governments’ make-or-buy decisions and subsequent vendor choices. Asset specificity is not
significant predictor in any sourcing alternatives in Hefetz and Warner’s (2012) study. They operationalize direct public provision, intergovernmental cooperation, contracting with for-profit firms, and outsourcing to a nonprofit organization as their contracting alternatives.

The empirical evidence shows that increases in asset specificity is more likely to result in a range of external production choices relative to direct government provision. This appears to be a consistent empirical finding when asset specificity is found to be significant. Nonetheless, scholars’ results may not always agree on the type of vendor that is preferred over in-house production. It is also important to note that these findings are contrary to TCE logic. Transaction costs reasoning would suggest that increases in asset specificity would lead to greater direct production, and lower reliance on market exchanges.

**Empirical results for measurement difficulty.** Empirical evidence also shows that measurement difficulty is an important characteristic for government services production choices. Service measurability’s impact seems to be more consistent across studies. The overall findings seem to support the argument that governments rely more on external production when service measurability costs are low. This finding is consistent with TCE logic. Similarly, to the make-or-buy decision for asset specific services, governments here also mitigate the risk of vendor opportunism by decreasing their reliance on private firms if they decide outsource difficult to measure services.

Brown and Potoski (2003) find that when services are more difficult to measure governments are likely to increase their reliance on joint contracting and internal service provision. Through these options, the authors content, governments can verify pricing and quality of one vendor against their own internal performance, or against vendors. In other words, through joint contracting governments can outsource some routes of a refuse collection service, and keep others. This way they can assess vendors’ performance against their own.

Carr, LeRoux, and Shrestha (2009) attest that their results for the impact of measurement difficulty are similar to Brown and Potoski’s (2003) findings. As measurement difficulty increases reliance on other governments as vendors for service production is more likely. A similar increase in measurement difficulty makes the use of nongovernment providers less likely relative to internal provision. Thus for services that are difficult to measure governments are less likely to rely on external (nongovernmental) provision relative to in-house delivery.
Contract management difficulty is a variable that is significant in the study by Hefetz and Warner (2012). The authors’ operationalization of this variable is similar to how scholars depict services measurement difficulty. Their variable is only significant in the intergovernmental cooperation sourcing outcome (where the vendor is another government). But the marginal effect of this variable is the highest in the model (10%). The authors contend that the results attain to intergovernmental cooperation as a way to keep difficult to manage services under public control.

Andrew and Hawkins (2012) also find that higher measurement difficulty increases the likelihood of interlocal adaptive arrangements. In other words, “contracting parties are likely to design an adaptive agreement that is flexible enough to take into account future changes if the uncertainty associated with the transaction is relatively high” (Andrew & Hawking, 2012). The authors find that transactions that are more difficult to measure generally increase the likelihood that an adaptive multilateral agreement will be established with another government, compared to a transaction that is easy to measure.

The literature reviewed here shows that governments’ contracting choices are rarely simply about “make-or-buy”. Most of the studies account for a range of vendors that also considered when public services are outsourced. The array of sourcing outcomes studied is nuanced and the “buy” decision often captures who governments “buy” services from: other governments, for-profit vendors, nonprofit organizations.

The empirical evidence regarding the impact of asset specificity appears inconsistent across the studies. The results of scholarly work reviewed here seem to show that increases in services’ asset specificity are more likely to result in a range of external production choices relative to direct government provision. This is a consistent empirical finding, even though the results are not always congruent on the type of vendor. More importantly this outcome (governments outsourcing asset specific services) is contradictory to TCE logic for internalizing the production of asset specific services.

There appears to be greater consensus across the studies regarding the impact of measurement difficulty on “make-or-buy” decisions. Services that are easy to measure seem more likely to be outsourced. The empirical evidence reviewed here shows that if difficult to measure services are outsourced other governments are the preferred contract partner.
Transaction Costs Economics, Contract Formulation, and Vendor Relationships

As contracting becomes a popular alternative for government service delivery, the literature increasingly shifts into theorizing what explains governance arrangements and various government-vendor relationships. In earlier studies scholars examined why governments outsource services (Hefetz & Warner, 2004). Subsequently, research focused on what determines the vendor choice (Brown & Potoski, 2003a; Lamothe, Lamothe, & Feiock, 2008; Levin & Tadelis, 2010). More recent literature expands this stream of research to account for what factors explain the use of formal contracts and relational governance in market exchanges (Levin & Tadelis, 2010; Lamothe & Lamothe 2011; Poppo & Zenger, 2002).

Formal contracts (often referred as formal governance) are defined as “detailed, binding legal arrangements that specify the obligations and roles of both parties in the relationship” (Vandaele, Rangarajan, Gemmel, & Lievens, 2007). Typically, there is a contract that is very detailed regarding the outputs to be delivered in a very specific time frame (Sclar, 2001). In addition, there is an explicit sanction mechanism in place if parties fail to fulfill their contractual obligations (Macneil, 1981). Formal contractual arrangements are viewed by scholars as means to protect exchange partners from opportunistic behavior.

Relational governance on the other hand is considered less rigid, and the focus is on flexibility, cooperation, and exchange of information (Poppo & Zenger, 2002). Scholars theorize that ongoing communication and coordination over a longer time periods result in continuing relationships between adaptable exchanges partners (Beinecke & DeFillippi, 1999). In addition, scholars theorize that repeated exchanges embedded in social connections are important mechanisms (Poppo & Zenger, 2002). It is the repetition of interactions aided by social relationships that are theorized to minimize transaction costs compared to formal contracts (Dyer, 1997).

Theoretical Predictions

TCE is a commonly used theoretical framework for studying the use of formal contracts and relational governance exchanges (Poppo & Zenger, 2002). This literature theorizes that managers align governance structures (features) of interorganizational relationships to match known exchange hazards (Poppo & Zenger, 2002). The prevalent exchange hazards, as outlined
above, are associated with specialized investments, measurement difficulty, or uncertainty (Williamson, 1981).

TCE theory posits that in response to the exchange hazards associated with transactions managers will craft complex and detailed contracts. They do so in order to protect themselves from opportunistic vendors. When the formulation and implementation of such contracts becomes too costly managers are theorized to produce the services in-house.

Other scholars believe that more collaborative and complex market exchanges exist, and are not fully explained by the transaction cost framework. The proponents of this view theorize that trust and social norms act as substitutes for complex contracts or in-house service provision (Adler, 2001; Granovetter, 1985; Dyer & Singh, 1998).

Recent literature has attempted to address shortcomings of a simple substitution hypothesis. Poppo and Zenger (2002) examine whether complex formal contracts on the one hand, and relational governance structures on the other act as complements and not substitutes. Whereas previous work theorized that managers would opt for one of the options to manage exchange hazards, these scholars empirically show that managers engage in more complex and complementary strategies involving the two.

Lamothe and Lamothe (2012a) contend that public managers are likely to use what the authors call dual regimes. They define dual regimes as instances where formal contract formulation and relational exchanges occur simultaneously and are not viewed as simple substitutes by managers. Thus, the authors theorize, contract writing is more formal in nature than is the management style adopted during implementation. This means that managers write costly detailed formal contracts, but at the same time they invest resources in informal relational exchanges.

Girth and her co-authors’ (2012) empirical results support this finding as well. In the interviews conducted for their study public managers explain that in addition to spending a lot of resources on crafting contracts, they spend a lot of time helping vendors – costs not written in the traditional contractual exchange. In this study the authors find that a number of factors contributed to increased oversight and transaction costs. In particular managers were often devoting “more time to helping contractors with performance issues because if they do not, they could lose the only vendor available to provide the service” (Girth, Hefetz, Johnston, & Warner, 2012).
In these studies, formal and relational governance are defined similarly, and results show empirical support for alternatives to the substitution hypothesis. Formal exchanges here consist of clearly written, detailed, formal contracts where expectations and sanctions are explicitly spelled out. Relational governance is theorized as consisting of cooperation in task completion between partners, and emphasis is placed on supporting the longevity of relationships.

**Empirical results for asset specificity and measurement difficulty.** Asset specificity and measurement difficulty are theorized as key explanatory variables in both research streams (studies on formal contracts and studies on relational exchanges). Scholars expect that the extent of formality in written contracts and the management style adopted during implementation are going to be shaped by service, vendor, and jurisdiction characteristics (Lamothe & Lamothe, 2012a).

Empirical findings show significant support for asset specificity and measurement difficulty’s impact on what the literature defines as contract customization and use of contract features. Poppo and Zenger (2002) find that managers craft more customized and complex contracts as asset specificity increases. Similarly, managers also craft more complex contracts when measurement difficulty is higher.

In another study Lamothe and Lamothe (2011) examine the extent of trust contracting governments display towards their vendors. In addition to their primary variables of interest the authors also include a range of control variables. They control for transaction costs service characteristics with two measures. Task definition in their study captures how easily expectations are explicated and if customization, as opposed to standardization is required when performing service duties. Evaluability of tasks, the second control variable, captures how simple or difficult it is to measure and evaluate vendor performance. The results show that managers perceive more opportunistic behavior when vendors are to perform more ambiguous tasks.

The empirical support for transaction costs factors’ impact on relational aspects of contracting is limited. Whereas Poppo and Zenger do not find TCE characteristics to impact relational implementation Lamothe and Lamothe’s results show only small impact due to asset specificity. In their study that is the only variable to impact both outcomes: contract features – depicting formal contracting, and coordination depicting relational governance.
Transaction Costs Economics and Dynamic Public Service Contracting

A criticism of public service contracting research is its reliance on cross-sectional tests. Recent literature attempts to address this shortcoming by theorizing explanations of dynamic service delivery arrangements. In this literature governments can revisit their decisions and make changes to production modes based on time-sensitive administrative, political, and economic conditions (Lamothe, Lamothe, & Feiock, 2008). The studies of Warner and Hefetz (2012) and Lamothe, Lamothe, and Feiock (2008) account for a dynamic contracting environment. The scholars use similar data, but approach the conceptualization of dynamic contracting environment differently and use different units of analysis.

Dynamics of Governments Service Delivery Over Time

Lamothe, Lamothe, and Feiock (2008) explore the determinants of current service delivery arrangements while accounting for past decisions. The authors stress that it is important to include past decisions when scholars are examining current production choices. They include inertia as explanatory factor in addition to the traditional service and jurisdictional characteristics. Even though the authors do not fully define what is meant by inertia in this study, they explain the logic for past choices’ expected impact on present make-or-buy decisions. Lamothe, Lamothe, and Feiock outline in great detail why risk-averse boundedly rational public managers would prefer the maintenance of existing production modes compared to potentially superior but uncertain alternatives. To measure the impact of inertia the authors include a set of binary variables defining the delivery mode in the previous period. The expectation is that delivery mode in the earlier time period will help predict delivery mode in the period of interest.

Warner and Hefetz (2012) on the other hand simply define a dynamic contracting environment as a two-way street where production could shift between private and public actors. The authors explain what they define as insourcing, but at a very superficial level. Insourcing occurs when governments bring back in-house service delivery that was previously outsourced. Warner and Hefetz show that insourcing has increased compared to levels of new contracting out, and set out to explore what contributes to new outsourcing and new insourcing across services. Lamothe, Lamothe, and Feiock (2008) also describe how inertia could constrain choices in both directions. But they explore why governments could be reluctant to outsource.
internally produced services, and be unwilling to bring back in-house services that were partially or fully outsourced previously.

The dynamic contracting outcomes of interest in both studies are operationalized very differently. To measure contracting dynamics Warner and Hefetz (2012) combine ICMA surveys from two time periods: 2002 and 2007. To track the changes over time the authors paired the surveys and found 430 usable pairs. The operationalization of new insourcing includes cases where services were brought in-house. An example of new insourcing would be a service that was contracted out in 2002, but delivered directly by governments in 2007. New outsourcing on the other hand includes cases where public service delivery was contracted out in 2007, but the service was delivered in-house in 2002. Therefore, the dependent variable becomes the count of services newly outsourced or newly insourced in 2007, given the total number of services the government provided in the given year (Warner & Hefetz 2012).

Lamothe, Lamothe, and Feiock (2008) also use the 2002 ICMA survey for their analyses and supplement it with information from the 1997 version. Their dependent variable consists of five binary outcomes that define the municipal government’s service production choice in 2002. They account for services that can be produced (1) completely by municipalities directly (in-house); (2) jointly by both public employees and private contractors (joint); completely contracted to (3) other governments; (4) completely contracted to for-profit firm; (5) completely contracted to nonprofit organizations.

The estimation techniques used in these two studies are also very different. Warner and Hefetz use two separate probit models. It is unclear why the authors decided to use probit estimation since their dependent variables are proportions and not binary outcomes. Lamothe, Lamothe, and Feiock use multinomial models where a number of estimates are associated with each independent variable: one for each category as it relates to the reference category.

**Empirical results for asset specificity and measurement difficulty.** Warner and Hefetz (2012) find that if governments have greater percentage of services that are higher in asset specificity they are more likely to insource than outsource service production in a given time period. This result, the authors suggest, reflects the higher transaction costs and greater difficulty of successfully outsourcing asset specific services. If governments initially outsource a service
that requires asset specific investment, they are more likely to bring these services back in-house in subsequent contracting rounds (Warner & Hefetz, 2012).

Lamothe, Lamothe, and Feiock (2008) find that increases in asset specificity lead to greater likelihood of external production, contrary to their hypothesized association. The inertia effect on the other hand is consistent with their stated expectations: if service delivery was outsourced in 1997, high asset specificity makes internalization (bringing the services back in-house) less likely in 2002 as predicted.

The findings in Girth, Hefetz, Johnston, and Warner’s (2012) commentary seem to support the results in Lamothe, Lamothe, and Feiock’s empirical study. As indicated in the paragraphs above, their interviews show that transaction and oversight costs are particularly high when governments fear that they might lose the only vendor able to provide the service. This situation is characteristic of exchanges where partners make investments that cannot be easily shifted to alternative production. As indicated in the interviews, governments are dependent on the vendor as they no longer have the ability to provide the service: they have invested in the contractual relationship to make sure the vendor provides adequate services. This may be similar to the Lamothe, Lamothe, and Feiock study where the empirical findings show that high asset specificity results in lower rates of insourcing if a service was outsourced in an earlier time period. In both cases it appears that if governments outsource an asset specific service the continuation of this production choice is more likely than insourcing service delivery. The managers interviewed in the Girth, Hefetz, Johnston, and Warner (2012) study also highlight the greater potential of contract failure, which might be the reason for the increased insourcing findings for asset specific services in the Warner and Hefetz study.

Warner and Hefetz (2012) and Lamothe, Lamothe, and Feiock (2008) also produce conflicting results regarding the impact of the other transaction cost service characteristic of interest: measurement difficulty. The variable measuring contract management difficulty in the Warner and Hefetz (2012) study leads to more new outsourcing, and less insourcing. Their results indicate that when services are more difficult to measure new outsourcing is more likely than insourcing difficult to measure services that were previously contracted out. The explanation for this outcome, the authors content, could be more political. Citing Stein’s (1990) work they suggest governments will seek to contract out services that are difficult to measure in order to reduce the political burden they face in dealing with problematic services.
The results of the study conducted by Lamothe, Lamothe, and Feiock (2008) provide more nuanced and contradictory conclusions regarding the impact of services’ measurement difficulty. In their analyses as measurement difficulty increases, the likelihood of continued production by another government or nonprofit organization increases. Thus if a difficult to measure service was outsourced to either another government or a nonprofit, in subsequent decision rounds this mode of service delivery is likely to continue. At the same time, for these services the probability of continued production by contracting with a for-profit firm decreases. This means that if a difficult to measure service was outsourced to a for-profit organization, it was less likely to continue this mode of production in subsequent rounds.

These results show that inertia plays a role when services are outsourced to other governments and nonprofits: this mode of production is more likely to continue. But regardless of the 1997 production mode, as measurement of service outcomes becomes more difficult outsourcing to for-profit firm decreases in 2002. The authors conclude that their empirical evidence shows how past “mismatches” in production are “corrected” in the next round. Mismatch is defined as contracting out a difficult to measure service to a for-profit firm. If this happened in 1997, its likelihood was significantly lower in the subsequent survey year.

The results from these two studies are not directly comparable, and leave the debate open about the impact of transaction cost factors on dynamic contracting outcomes. First, the two studies use different units of analysis. Lamothe, Lamothe, and Feiock use municipal service as a unit of analysis, Warner and Hefetz on the other hand analyze 430 governments. In addition, the authors conceptualize and operationalize dynamic contracting environment in different ways. Warner and Hefetz only capture a dynamic outcome with their dependent variable. The outcome variable in their study represents new insourcing or outsourcing as a count of services given the total number of services that the government provides in the year of interest. Lamothe, Lamothe, and Feiock (2008) on the other hand examine dynamic contracting across various production choices.

In both studies the authors find evidence that service characteristics at least partially explain local government production choices in a dynamic environment. They show that previously made sourcing decisions for high transaction costs services can have an impact on current production choices. In addition, Warner and Hefetz’ study also seems to be consistent with some of the cross-sectional research on “make-or-buy” decisions. Their results show
governments are more likely to outsource services characterized by high asset specificity; contrary to TCE logic. At the same time, their study also shows that if highly asset specific services are contracted out, they are more likely to be brought back in-house in later contracting rounds. Presumably this is due to contract failure, or insufficient monitoring capacity. Lamothe, Lamothe, and Feiock also find that increased service asset specificity leads to more external production, contrary to their expectation and transaction cost theory.

**Transaction Costs Economics and Contract Monitoring**

Even though outsourcing service production is still a common practice for a lot of governments, research on service transaction costs’ impact on contract oversight efforts is scant. Writing and enforcing contracts is a costly activity (Levin & Tadelis, 2010; Yang, Hsieh, & Li 2009), but it is a necessary activity especially for services characterized by high transaction costs. Scholars suggest that oversight costs capture the difficulties governments face with describing performance requirements ex ante, adjusting them over time, and monitoring quality of service delivery. The review of scholarly work in this chapter shows a significant amount of literature examining TCE’s impact on governments’ “make-or-buy” decisions. Similarly, studies have used transaction cost logic to explain why governments contract with one type of vendor over another or engage in different types of contracting (formal versus relational).

Surprisingly very few scholars have examined the impact of services’ asset specificity and measurability difficulty on contract monitoring. Brown and Potoski (2003) begin to address this shortcoming in the literature by explicitly analyzing how municipalities use monitoring tasks in response to transaction cost factors inherent in contracted service delivery. The authors use a transaction cost framework to argue that different risks under contracting prompt public managers to implement varying monitoring procedures that may improve their ability to evaluate vendor performance.

Scholars have theorized that governments can monitor vendor performance using a range of tasks (Savas, 1999; Marvel & Marvel, 2007). Brown and Potoski further theorize that some monitoring strategies are better suited to addressing different types of risks associated with contracting (Brown & Potoski, 2003). For example, governments that contract for more asset specific services are expected to adopt monitoring approaches commonly used to monitor monopolies. Namely some combination of analyzing vendor records and conducting field audits.
The models proposed by Brown and Potoski provide insight into whether governments are selective about the types of monitoring tasks they use in response to different transaction costs factors. Governments, the authors believe, respond selectively and invest in monitoring when useful information about vendor performance or behavior can be acquired efficiently. They include services’ asset specificity and measurement difficulty in their monitoring equations in order to determine the factors’ impact on four separate oversight activities. The oversight tasks used in their study are: (1) monitoring of complaints; (2) citizen surveys; (3) vendor audits; (4) field observations.

Their results empirically show that transaction costs risk factors are important in government contract monitoring decisions. In particular, “the effects of different contract risks vary across the four monitoring activities” (Brown & Potoski, 2003). Both, asset specificity and measurement difficulty, are important predictors in Brown and Potoski’s models. Specifically, increase in asset specificity raises the likelihood governments will directly monitor performance by auditing vendor records and conducting field inspections (Brown & Potoski, 2003). Similarly, the coefficient for their service measurability variable is also statistically significant for the vendor and field audit outcomes.

But Brown and Potoski additionally theorize that the effect of service measurability on governments’ monitoring efforts is more complex. They hypothesize that if a service is easy to measure governments’ costly monitoring may not be necessary because the information is easy to acquire and is not subject to disputes. For services that are moderately difficult to measure the authors posit that governments will use a combination of analyzing vendor records and field audits. However, for services that are very difficult to measure governments are less likely to adopt any of the monitoring procedures used in their study, because “none of the costly activities are likely to produce the desired information” (Brown & Potoski, 2003).

The empirical results from their analyses find support the hypotheses regarding the impact of measurement difficulty on municipalities’ use of monitoring tasks. Brown and Potoski operationalize service measurability as a variable that may have a nonlinear effect on monitoring choices: they have a non-squared and a squared term in their empirical models. The coefficients for service measurability and its squared term are jointly statistically significant in the models where vendor audit and field audit are the dependent variable of interest.
In their models the service measurability coefficients are positive while the squared term coefficients are negative. This, the authors attest, indicates a significantly curved relationship between contracted services that are difficult to measure and the probability that a government engages in vendor and field audits (Brown & Potoski, 2003). The authors also graphically depict the relationship between service measurability and the probability governments conduct field observations. In their figure the probability of engaging in field observations increases significantly for services as they move from easy-to-measure to moderately difficult-to-measure category. Once the service measurability increases beyond its mean value, the probability that a government conducts field observations decline. In other words, as services move from moderately difficult-to-measure to very difficult-to-measure governments are less likely to use monitoring tasks. Surprisingly, no other empirical work has examined these relationships.

Other scholars have studied local governments’ use of monitoring tasks (Marvel & Marvel, 2007), and the possibility of collaborative contract monitoring (Amirkhanyan, 2009). This line of inquiry overcomes a major limitation in Brown and Potoski’s early work. Brown and Potoski (2003) show that asset specificity and measurement difficulty affect what monitoring tasks are used by municipal governments who outsource service delivery. The explicit assumption is that governments are the only contracting partners that are responsible for performing oversight tasks.

The focus on governments being the only actors that perform monitoring tasks is a great shortcoming in the transaction cost and contracting literatures. Brown and Potoski are the only scholars who have used asset specificity and measurement difficulty as explanatory variables in models estimating the probability of using certain monitoring tasks. But they only attempt to explain the factors’ impact on governments directly performing these tasks.

In their later work, Brown and Potoski (2006) contribute to the literature by theorizing that it is also possible for governments to “buy” some monitoring from vendors. They tackle the criticism that when governments outsource service production they lose capacity to deliver the service. The other criticism tackled by the authors is that governments also lose management capacity and that contracted out services may not be well monitored. Brown and Potoski instead hypothesize that outsourced services and services directly provided by governments are monitored similarly. This the authors suggest is because governments can “purchase” monitoring from vendors and offset any costly monitoring shortcomings.
Brown and Potoski (2006) empirically show that governments indeed use vendors for contract monitoring. Their results show that vendors’ management activities offset the decline in management capacity that occurs when governments contract for the delivery of a particular service. In their study they separate service delivery into two components: (1) service production; and (2) service management. In particular, the authors are interested in whether governments also choose to contract for portions of service delivery management when they contract for service delivery production. They contest that “studies that only compare the management activities of contracting and direct service delivery governments, without examining the management activities contracted to vendors, are likely to be incomplete and biased” (Brown & Potoski 2006).

By this account it is also likely that studies that only examine governments’ use of monitoring tasks are also incomplete. They are incomplete because the assumption is that none of the tasks are performed by other parties (vendors and third-parties). But as Brown and Potoski (2006) empirically show governments can purchase monitoring from vendors. They further indicate that the use of third-parties is also possible, yet no scholarly work has examined the impact of asset specificity and measurement difficulty on these modes of monitoring.

Summarizing Shortcomings in the Literature

This section will discuss additional shortcomings in the literature and summarize those in the previous sections in order to set the stage for the theoretical framework advanced in the next chapter. As indicated above Amirkhanyan (2009) theorizes two distinct options for governments to measure the performance of their vendors. First, the author presents two options facing governments that outsource service production: (1) contractor’s performance is monitored and measured; (2) no performance monitoring is conducted. Subsequently, if governments decide to monitor their vendors’ performance there are two additional options: (1) collaborative monitoring; and (2) “collaborative abstinence”.

Amirkhanyan (2009) describes “collaborative abstinence” as “top-down” approach in performance monitoring where the governments are the ones responsible for oversight tasks. Collaborative monitoring on the other hand consists of agencies asking vendors for input on performance measurement, and situations where contractors can volunteer new performance measures or negotiate on existing ones.
Amirkhanyan’s (2009) determinants of collaborative performance measurement include service characteristics as well as government-vendor relationships. As the author notes the role of transaction costs in contract design is well established in the privatization literature (Brown & Potoski, 2003; Williamson, 1996). In her list of important transaction cost factors only measurement difficulty is included. She conceptualizes services’ measurement difficulty using a distinction between “hard” services with tangible and easily quantifiable results, and “soft” services that are harder to measure due to complex outcomes. It is unclear why Amirkhanyan does not include the other common transaction cost characteristic (asset specificity) in her theorizing. Asset specificity may be an important overlooked factor in her theory.

Relationships are also listed as important factors that can impact collaborative activities in the course of measuring and monitoring vendors’ performance (Amirkhanyan, 2009; Brown & Potoski, 2006; Marvel & Marvel, 2007). In particular, “some contract monitoring arrangements may necessitate collaboration whereas other may discourage it” (Amirkhanyan, 2009). Governments’ choices regarding monitoring arrangements are listed as (a) relying on self-reported data presented by vendors, (b) directly collect data through interviews or inspections, and (c) rely on third-party evaluators (Amirkhanyan, 2009). When performance measurement is delegated to the contractor, vendors are engaged in the evaluation process (Amirkhanyan, 2009; Brown & Potoski, 2006). On the other hand, Amirkhanyan (2009) theorizes that when performance is observed or inspected directly by governments, the monitoring officers are more likely to use unilaterally developed procedures. From these studies it is unclear whether certain monitoring tasks are more likely to be performed through either of the three listed monitoring arrangements. We only know that asset specificity and measurement difficulty are important factors in arrangements where governments directly collect data.

Brown and Potoski are the only scholars to evaluate the impact of transaction costs’ factors on governments’ use of unilaterally developed procedures. Even though by their own admission their earlier work may be incomplete or biased since it only focuses on governments’ use of monitoring tasks. In their later work they empirically show that vendors can similarly perform oversight tasks for outsourced services (Brown & Potoski, 2006). But this is empirically verified for a single low transaction cost service: refuse collection. In addition, the other choice governments can make regarding monitoring arrangements: use of third-party monitors is completely unexplored by transaction costs scholars.
Overall, the shortcomings identified in the transaction costs and contracting literature here include: (1) overlooking two important monitoring arrangements that can broadly be labeled proxy monitoring, and (2) failing to consider a range of monitoring tasks reflecting where the activities fit in the entire service delivery process. As it stands, the literature has focused primarily on explaining the impact of asset specificity and measurement difficulty on governments directly monitoring vendors (Brown & Potoski, 2003). The other two important monitoring arrangements depicted in Amirkhanyan’s (2009) theoretical framework that represent proxy monitoring are largely unexplored.

Brown and Potoski (2006) do examine the likelihood that governments contract for management when contracting out a low transaction cost service (refuse collection). Their study uses monitoring the quality of service outcomes to conceptualize management responsibilities. The authors use four dependent variables of interest: randomly spot check, formally track missed streets, citizen surveys, track and monitor citizen complaints. Their study contributes to the literature by showing that governments rely on self-reported data presented by vendors in addition to directly collecting data. But their research only uses one low transaction costs service. As shown in the literature review in this chapter, governments often outsource services that are difficult to measure and are asset specific. No scholarly work has attempted to examine the impact of such outsourcing on proxy monitoring where vendors or third-party monitors perform monitoring tasks.

As discussed in the paragraphs above public managers can monitor vendors directly (Brown & Potoski 2003), and they can also use monitoring by proxy (Brown & Potoski, 2006; Amirkhanyan, 2009; Yang & VanLandingham, 2011). Monitoring by proxy is distinct from direct government oversight in terms of how much control public managers have over the implementation of various tasks, and how much they rely on other entities to produce the required performance information. Brown and Potoski (2006) operationalize proxy monitoring as vendors being responsible for oversight, but other entities and third-parties could also be used as monitors (Amirkhanyan, 2009).

Outsourcing of oversight, or using third-party monitors in public service contracting, can be described as information aggregation efforts in a decentralized environment (Patty & Penn 2014). In these situations, the individual actors’ positions in the network of three agents matter. This type of structure allows for the possibility of using third-party monitors to “verify” vendors’
actions on the basis of contracting governments (Patty & Penn, 2014). The resulting interaction might be approximated to a principal-multiple agents model where a single principal can acquire additional information (Waterman & Meier, 1998).

The contracting principal thus has relationships with two types of agents (Waterman & Meier, 1998). The first type of interaction is depicted by traditional principal-agent logic often used to explain public service contracting decisions. Here the government (principal) employs an agent (vendor) to deliver a service. And the expectation is that the agent might shirk on responsibility due to goal misalignment and information asymmetry (the vendor is perceived to have more information regarding their own performance). In this second relationship the principal acquires information to offset their informational disadvantage in the original contractual relationship with vendors. For example, if a local government lacks monitoring capacity to effectively evaluate the performance of a vendor, but it desires to do so (does not trust vendors’ self-reported data) it can outsource some of the monitoring functions: data collection, onsite inspections, etc. This is a feasible strategy to reduce information asymmetry at potentially lower costs for contracts where high transaction costs are likely.

This study suggests that transaction costs factors such as asset specificity and measurement difficulty impact governments’ choices regarding monitoring arrangements. The theoretical framework advanced in Chapter 3 seeks to balance the current literature by examining the impact of transaction costs factors on governments’ use of proxy monitoring for outsourced service delivery by relying on vendors’ self-reported data, and use of third-party monitors for contract oversight across a range of services.
CHAPTER 3

TRANSACTION COSTS AND TRANSFERABILITY OF CONTRACT MONITORING IN GOVERNMENT-VENDOR RELATIONSHIPS

Contract monitoring can occur throughout the service delivery process and is considered important for contracting outcomes. Public managers can include expectation and performance clauses in contracts in order to specify how a service will be delivered (Malatesta & Smith, 2013). They can also monitor the service delivery process by visiting work sites to conduct field observations and vendor audits (Brown & Potoski, 2003). In addition, measuring results of services and verifying citizen satisfaction after services have been delivered are also used to monitor vendor performance (Marvel & Marvel, 2007).

Holding vendors accountable through oversight and monitoring efforts can prevent contract failure and increase the possibility of desired outcomes (Rehfuss, 1989). Alternatively, inadequate monitoring can result in a range of problems, including lower savings and higher service costs (Sclar, 2001). Jurisdictional factors, institutional environment, organizational capacity, and service characteristics are all important for understanding why municipalities use certain monitoring tasks (Romzek & Johnston, 2002; Milward & Provan, 2000; Brown & Potoski, 2003; Brown & Potoski, 2003a; Brown & Potoski, 2006; Amirkhanyan, 2009; Ferris & Graddy, 1994). Governments can directly perform a range of tasks to monitor their vendors, but monitoring by proxy is also likely to occur (Amirkhanyan, 2009; Brown & Potoski, 2006). Monitoring by proxy means that governments delegate oversight activities to another entity.

Monitoring Tasks

Governments can use a range of tasks and strategies to monitor vendors who deliver services on their behalf. Marvel and Marvel (2007) operationalize 9 different monitoring activities in three distinct categories: upfront monitoring, process monitoring, and ex post monitoring. Setting work plans and setting performance targets are oversight activities that occur in upfront monitoring. These are activities that can be used to structure the delivery process and
specify certain outcomes or outputs that would have to be met by vendors. Therefore, these tasks occur before service delivery commences.

Monitoring tasks can also be used while the services are being delivered or produced. Managers can assess compliance with rules and regulations, as well as compliance with work plans. In addition, governments can also monitor client complaints, conduct financial audits, and verify that services are provided as required by contracts. Typically, these tasks are performed simultaneously with service delivery.

Measuring service outcomes is also important for contract oversight. At this stage public managers can measure the results of the services, and can survey citizens’ satisfaction. The use of these tasks occurs post service delivery, or once the service has already been provided.

In their classification Marvel and Marvel (2007) present four categories, and also account for the use of results of monitoring activities. Arguably only the first three categories are important for actual vendor monitoring. Rewarding and sanctioning vendor performance can be viewed as methods for restructuring provider (vendor) incentives (Marvel & Marvel, 2007). These are also more akin to results of monitoring than monitoring practices.

Contract Monitoring Arrangements

While using such broad range of tasks to monitor vendor performance, public managers may also rely on various contract monitoring arrangements. The oversight arrangements can range in terms of how the government-vendor relationship is structured. One approach is direct government oversight where public managers and staff are responsible for monitoring. On the other hand, collaborative arrangements and delegation of tasks is also possible.

Public managers can directly collect data and evaluate all aspects of the service delivery process. The expectation is that when performance is observed or inspected directly by governments, monitoring officers “will be more likely to use unilaterally developed procedures” (Amirkhanyan, 2009). Thus, under such arrangements collaboration with vendors is not likely. Governments can respond to contracting risks by adopting contract oversight and monitoring procedures and can selectively engage in contract monitoring (Brown & Potoski, 2003). But they do so directly, and without delegating any oversight responsibilities to vendors or third-parties.

According to Amirkhanyan (2009) certain contract monitoring arrangements may foster collaboration whereas others may discourage it. A collaborative relationship between a public
agency and a vendor may be the result of “lengthy period of observing each other’s work ethic and developing interpersonal ties” (Amirkhanyan, 2009). The author perceives that such long-term relationships may result in higher prevalence of collaborative activities. This would mean that performance measurement, for example, is delegated to the contractor making vendors engaged in the evaluation process (Amirkhanyan, 2009). Once vendors become actively engaged in the evaluation process in these trust-based relationships it is likely that they are proactive in discovering problems and can be instrumental in clarifying and negotiating various aspects of the service delivery process (Amirkhanyan, 2009).

**Monitoring Choices and Proxy Monitors**

Brown and Potoski (2006) empirically show that public managers can delegate monitoring activities to vendors as well. Their results suggest that contracting governments often “buy” monitoring activities in addition to production activities from vendors. But they only test this hypothesis in cases where the performance outputs and outcomes are easy to measure (low transaction cost services). Furthermore, it is unclear whether the relationship is similar to the collaborative arrangement depicted in Amirkhanyan’s (2009) study. In both cases monitoring tasks are delegated to vendors, but whereas as in one this suggests the prevalence of collaboration in the other it is simply framed as “purchasing” additional activity from a vendor without any indication of collaborative intention.

Lastly public managers can also rely on third-party evaluators, such as professional associations and accreditation agencies to collect data and evaluate vendors’ processes and deliverable outcomes (Amirkhanyan, 2009; Yang & VanLandingham, 2011). This contract monitoring arrangement is least studied in the contracting literature. The outsourcing of oversight (relying on third-party monitors) expands the traditional contract monitoring dyad to a small network of three agents (Patty & Penn, 2014).

All of this is to say that the use of monitoring tasks, and choice of contract monitoring arrangements are important for successful public service contracting. And public managers’ choices regarding the use of monitoring tasks and structuring of contract monitoring arrangements are not well understood. The core emphasis is the desire for successful contracting outcomes. In order to materialize on the promises of privatization contract management capacity is essential. Monitoring is one of the components of this capacity that may directly impact the
contracting outcomes (Rehfuss, 1989). In order to achieve the desired outcomes public managers must carefully decide which monitoring tasks to use. They must also decide how to structure the contract monitoring arrangements with their vendors with regards to the tasks that are used. These public managers’ preferences drive the framework outlined below, which takes service characteristics, municipal capacity, and jurisdictional features into account.

Mixed Transaction Costs and Monitoring Tasks

Transaction costs scholars typically focus on two broad types of service-specific characteristics: asset specificity and service measurability (Williamson, 1981). The exchange hazards expected to arise from these characteristics would prompt managers to craft governance arrangements to match the exchange conditions that accompany various services (Poppo & Zenger, 2002; Andrew & Hawkins, 2012). In other words, as exchange hazards rise so must contractual safeguards (Williamson, 1985). These safeguards are monitoring costs that could amount to as much as 25% of the total cost of the contract (Rehfuss, 1989).

Poppo and Zenger’s empirical model outlines the theoretical expectations associated with common exchange hazards (Figure 3.1). In their model, asset specificity, measurement difficulty, and uncertainty are factors that directly impact performance. But these factors are also theorized to directly impact both relational governance, and customization of contracts. Both of these can be considered as approaches to monitoring as discussed in the public service contracting literature reviewed in the previous chapter.

Therefore, service characteristics are theorized to impact monitoring efforts directly. Asset specificity and service measurability difficulty in particular are often theorized as affecting transaction costs such as monitoring (Brown & Potoski, 2003; Brown & Potoski, 2005; Williamson, 1985; Carr, LeRoux, & Shrestha, 2008). These two service characteristics will be examined in the dissertation, and hypotheses regarding their impact will be advanced in this chapter.

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7 Exchange hazards here mean difficulties associated with assessing vendor performance that arise due to characteristics associated with the service production.
To illustrate a classification of services based on their characteristics Brown and Potoski (2005) construct a typology to categorize services as low transaction costs, mixed transaction costs, and high transaction costs. In the upper left quadrant of their table are services that have low asset specificity and are considered easy to measure. It is expected that governments would be able to easily craft contracts that specify how vendors should perform these services. As a result, “the transaction costs of managing contracted service delivery are likely to be low” (Brown & Potoski, 2005). The expectation is that governments would be more likely to outsource these types of services because of the low monitoring costs.

The classification of services also includes two sets of mixed transaction costs cases. For these services one transaction cost dimension is high and the other is low. Brown and Potoski theorize that public managers may outsource such services because they perceive the lower levels of one service dimension to negate potential contract risks arising from high levels in the other dimension. For an example the authors present how a public manager might act with regards to a service that is not asset specific, but difficult to measure. In such situation public
managers would not be concerned about potential disputes with vendors over performance measures (Brown & Potoski, 2005). In other words, it is expected that the exchange hazards associated with measurement difficulty will not be too burdensome. This is the case, the authors contend, because a vibrant market for such services is expected to exist due to the service’s low asset specificity. If disputes between government and vendor resulting from the service measurement difficulty arise and lead to contract failure it is expected that there would be a plethora of other vendors ready to step in and submit a bid on future contracts for the services. Thus the vendor is incentivized to comply with government expectations in order to maintain the contractual relationship. In other words, governments could rely on the plentiful market of providers as leverage in the relationship.

The first set of mixed transaction cost services (upper right quadrant in Table 1) are easy to measure, but high in asset specificity. For both sets of mixed transaction cost services Brown and Potoski (2005) suggest that “public managers still need to dedicate resources to address challenges associated with the problematic service criteria”. Thus monitoring costs are going to be affected by the asset specificity of the outsourced service. Asset specificity refers to “whether specialized investments are required to produce the service. Specialized investments are investments that apply to the production of one service but are very difficult to adapt for the production of other services” (Brown & Potoski, 2003). Another way to conceptualize asset specificity is through theorizing sourcing relationships that “require significant relationship-specific investments in physical and/or human assets” (Poppo & Zenger, 2002).

The theoretical expectation is that governments that contract for highly asset-specific services would be more likely to adopt a regulatory monitoring regime (Brown & Potoski, 2003). In their analyses of contract performance management – with a focus on monitoring tasks – Brown and Potoski empirically show that asset specificity is an important predictor in explaining the direct government use of monitoring tasks. In particular, increase in asset specificity increases the likelihood that governments engage in direct monitoring of vendor performance via auditing vendor records and conducting field inspections (Brown & Potoski, 2003).

The coefficient for asset specificity in their models is statistically significant and positive in the field audit equation. Specifically, increasing the degree of asset specificity in contracted services increases the probability of governments to directly conduct field observations by 0.05
But asset specificity does not appear to significantly impact the other outcomes: vendor audit, monitoring of citizen complaints, and citizen surveys.

In addition to using an array of monitoring tasks public managers also use a range of strategies to make sure vendors are producing services as specified in contracts. Theoretically it is expected that highly asset specific services would prompt managers to adopt regulatory monitoring and directly monitor vendors. At the same time Brown and Potoski (2006) also show that public managers can “buy” monitoring by assigning monitoring tasks to vendors. In particular, they theorize, this is the case for services that are not asset specific. In such situations it would be the vendor that is performing the task, or as Amirkhanyan (2009) suggests vendors self-report performance data.

The results from the Brown and Potoski studies can be considered as biased or incomplete in two important ways. First, Brown and Potoski (2003) assume that monitoring tasks are not performed by vendors. In their early work monitoring tasks are operationalized as only being performed by municipalities; thus vendor performance of monitoring tasks is set at zero. In their surveys the authors ask public managers if a tasked is performed assuming that government employees are the only ones who could perform the task. Secondly, when they model the likelihood that vendors perform monitoring tasks in their later work (Brown & Potoski, 2006), they assume that this is only the case for services with low asset specificity. In their model the measure of services’ asset specificity is set at low (measured), whereas high asset specificity is excluded. This limitation is explored in greater detail below.

Up to date there is no scholarly work that examines the impact of asset specificity on the likelihood that governments rely on proxy monitoring by using vendors or third-party monitors for oversight. Brown and Potoski (2006) use a single service to operationalize asset specificity. They include a binary measure in their model to depict whether the service is outsourced or not. Thus their measure captures the variation of municipal outsourcing of a service that is not asset specific. Their efforts are geared towards comparing the monitoring levels (tasks used) for services produced in-house versus ones that are outsourced. They find that if municipalities outsource a service that is considered low in asset specificity vendors can perform monitoring tasks.
This leads to the following questions: how does high asset specificity affect monitoring by proxy\(^8\)? Would outsourcing a highly asset specific service be associated with less vendor and third-party monitoring as compared to direct government oversight? Consistent with Brown and Potoski’s findings, and contributing to the discourse, it is expected that an increase in asset specificity will be associated with a decrease in the likelihood of governments using alternatives to direct monitoring. In other words, reliance on vendors and third-party monitors to perform oversight tasks would be lower for highly asset specific services since governments are more likely to perform these tasks based on TCE logic and empirical evidence. The expectation is that if public managers have indeed dedicated resources to address challenges associated with high asset specificity, as the theory suggests, the likelihood of using monitoring by proxy as compared to direct government monitoring would be lower.

**Hypothesis 1:** Increase in asset specificity is associated with a decrease in the probability of observing monitoring by proxy when compared to direct government monitoring.

In addition, the impact of measurement difficulty on the probability of observing monitoring by proxy is also largely unexplored. The lower left quadrant in Table 1 includes the second type of mixed services categorized by Brown and Potoski. These are the services that are low in asset specificity, but difficult to measure. Similarly, public managers are expected to dedicate resources for these services as well in order to address potential contracting challenges (exchange hazards). Service measurability is defined as how “difficult it is for the contracting organization to measure the outcomes of the service or to monitor the activities required to deliver the service” (Brown & Potoski, 2003). Contracting governments are exposed to risks of vendor opportunism or negligence when public managers cannot easily identify the outcomes to be achieved, or observe the activities to be performed during service delivery (Prager, 1994). Thus when performance is difficult to measure, the exchange partners might be incentivized to limit their efforts and shirk on their responsibilities (Poppo & Zenger, 2002).

Governments that contract out services that are considered difficult to measure are also more likely to use vendor audits and field observations (Brown & Potoski, 2003). Public

\(^8\) Monitoring by proxy here means that either a vendor or third-party monitor is performing the task instead of governments directly.
managers are expected to make investments in various types of monitoring for these types of mixed transaction cost services (Brown & Potoski, 2003; Brown & Potoski, 2005). According to Poppo and Zenger managers have two choices. They can settle for lower realized performance from their vendors because they are unable to measure their performance cost effectively. Or they can expand resources by crafting more complex contracts “that specify delivered service levels or facilitate the monitoring of a supplier’s behaviors” (Poppo & Zenger, 2002). Thus, as measuring services outcomes and processes become more difficult managers are expected to increase their direct monitoring by developing more complex contracts which would allow them to accurately assess their vendors’ productivity (Poppo & Zenger, 2002; Brown & Potoski, 2006).

Measurement difficulty’s impact on what Brown and Potoski call proxy monitoring is also not fully accounted for in the transaction cost scholarship on public service contracting. The results in Brown and Potoski’s studies may be similarly incomplete or biased when it comes to this service characteristic. The coefficient for service measurability is positive and statistically significant in their vendor audit and field audit analyses. This indicates that as services become more difficult to measure the probability of governments engaging in field observations increase significantly (Brown & Potoski, 2003).

Here the likelihood of alternatives to direct government monitoring are also not explored – proxy monitoring is assumed to be zero. Brown and Potoski (2006) define proxy monitoring as governments delegating monitoring activities to another entity, “for example, by empowering clients to report on the quality of services they are receiving”. This is an example of fire alarm monitoring (Barzelay & Moukheibir, 1996). An alternative example of proxy monitoring occurs when governments “buy” more monitoring than they could conduct on their own especially for easily measured services (Brown & Potoski, 2006). For these easy to measure services managers are theorized to focus more on monitoring service outcomes, but less on monitoring the process of vendors producing the service. Thus, “external proxy monitoring becomes an attractive option, because government managers can easily verify the reporting information they receive from vendors” (Brown & Potoski, 2006). Public managers can also use clauses that specify third-party monitoring (Poppo & Zenger, 2002).

This leads to the following questions: how does high measurement difficulty affect monitoring by proxy? Would outsourcing a difficult to measure service result in less monitoring
by proxy as compared to direct government monitoring? Empirical evidence shows that higher measurement difficulty prompts municipal managers to engage in more direct vendor monitoring (Brown & Potoski, 2003). At the same time for easy to measure services governments are likely to use proxy monitoring – vendor monitoring in particular (Brown & Potoski, 2006). Thus, the expectation is that higher measurement difficulty is associated with less reliance on vendor and third-party monitoring.

*Hypothesis 2: Increase in measurement difficulty is associated with a decrease in the probability of observing monitoring by proxy when compared to direct government monitoring.*

Most transaction costs scholars examine the independent effect of service characteristics on various contracting outcomes. The hypotheses advanced in this section similarly address the impacts of asset specificity and measurement difficulty on the probability that public managers use vendors and third-party monitors to conduct oversight tasks. These are examples of what Brown and Potoski (2005) call mixed case services: one transaction cost dimension is high and the other is low. Nonetheless some services are classified as having high transaction costs. In the lower right quadrant of Table 1 are services that are highly asset specific and are considered difficult to measure by Brown and Potoski. The theoretical expectation is that these services will be internalized due to their high transaction costs. Yet governments often outsource these services. The following section advances a hypothesis regarding the impact of high transaction costs service characteristics on the probability of having vendors and third-party monitors perform oversight tasks.

**High Transaction Costs and Monitoring Tasks**

High transaction costs complicate privatization efforts and affect local governments’ make-or-buy decisions (Levin & Tadelis, 2010), but the impact on monitoring efforts is unclear. It is expected that “the combination of high asset specificity and difficult measurement can severely complicate specifying, monitoring, and enforcing contracts” (Brown & Potoski, 2005). Andrew and Hawkins (2012) argue that local governments can reduce their own monitoring and enforcement costs through structuring various types of agreements. Though their interest is in
adoption of “flexible contracts” and adaptive agreements the logic can also be applied to
government-vendor relationships regarding the use of contract monitoring tasks.

Theoretically we should expect high transaction costs services to be internalized –
produced directly by governments. Services that are both highly asset specific and difficult to
measure are referred to as high transaction costs services (Brown & Potoski, 2005). The high
asset specificity and difficult measurement may increase the costs associated with contracting
and vendor oversight beyond the benefits accompanying outsourcing service production.
Nonetheless governments often end up contracting for some of these services (Brown & Potoski,
2005). The expectation is that when contracting for such services governments would be more
careful when it comes to monitoring vendors’ performance. This is because the “combination of
high asset specificity and difficult measurement can severely complicate specifying, monitoring,
and enforcing contracts” (Brown & Potoski, 2005).

Transaction costs scholars typically study the impact of asset specificity and
measurement difficulty independently. The theoretical literature posits that each might have an
independent influence on contracting decisions (Levin & Tadelis, 2010). Similarly, most
empirical models include measures for the two variables and essentially test the impact of mixed
transaction costs on various contracting outcomes. This can produce incomplete and biased
results as the assumption is that services have one characteristic that is high and the other is low.
A typical interpretation of coefficients’ impact in linear models posits an increase in the variable
of interest, while the remaining variables are at their mean value. Empirical studies always report
the impact of either asset specificity or measurement difficulty, but seldom are the analyses
examining their combined impact. In reality services may be both asset specific and difficult to
measure, but the effect of this combination is rarely examined in public service contracting
research.

Service characteristics, that are considered distinct sources of transaction costs, may be
highly correlated across services meaning that high asset specificity and measurement difficulty
are often observed simultaneously (Levin & Tadelis, 2010). This would make it very difficult to
“disentangle” potential independent effects (Levin & Tadelis, 2010). In an effort to examine the
“make-or-buy” choice facing local governments Levin and Tadelis (2010) conclude that
decomposing specific sources of transaction costs may not be possible without more detailed
data. In particular, their results do not allow for clear distinction and separation of problems
associated with measurement difficulty and potential for holdup as proposed by the theoretical literature. As Levin and Tadelis (2010) point out “the existing theoretical literature suggests that each might have an independent influence on contracting decisions”. But their results show that service characteristics thought to be impediments to successful contracting are highly correlated. To address the issue the authors use principal components approach to collapse the three measures into a single variable they call “contract difficulty”. This variable accounts for 84% of the variation in their three survey variables.

Transaction costs scholars have not theorized what is the potential impact of joint service characteristics on contracting outcomes. Typically, the theoretical developments are geared towards understanding the impact of either asset specificity or measurement difficulty as outlined in the literature review in the previous chapter. But rarely are theoretical expectations advanced about services that are both difficult to measure and are asset specific. Poppo and Zenger (2002) introduce interaction terms for their transaction costs measures (asset specificity, measurement difficulty, uncertainty) but no theoretical advancements are clearly articulated in their hypothesized expectations. They hypothesize that increases in exchange hazards should encourage more complex contracts, or “asset specificity, measurement difficulty, and technological uncertainty create exchange hazards that encourage more complex contracts” (Poppo & Zenger, 2002).

As stated, their hypotheses suggest that an independent increase in the three variables capturing the transaction costs characteristics are to lead to the expected outcome. But two of their models also estimate interaction terms for the exchange hazards, even though no theoretical expectations are proposed. In the results section of their study the authors point that the interaction of exchange hazards is considered an example of hazards that have become “particularly severe” (Poppo & Zenger, 2002). The authors conclude that in these cases of extreme exchange hazards manager may lose confidence in contracts – the interaction term has a

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9 Problems associated with holdup and counterholdup are the result of services asset specificity. Thus the authors find that separating independent effect of services’ asset specificity and measurement difficulty may be very difficult to do. In their study the service characteristics are highly correlated.

10 Services where two service characteristics are considered high. Included interaction terms in the study are: measurement difficulty*technological change; asset specificity*technological change.
significant negative effect on contract customization. Brown and Potoski (2003) similarly allude to the potential for services to be “extremely difficult” to measure. It is possible that scholars conceptualize services’ characteristics to lead to particularly severe exchange hazards, or become extremely difficult to measure when more than one transaction costs factors are observed in a single service.

Andrew and Hawkins (2012) on the other hand theorize a potential impact for services that are considered to be both asset specific and difficult to measure. They hypothesize that “an adaptive arrangement is likely to be preferred by local governments for a transaction involving high asset specificity and low service measurability”. Thus the authors expect local governments to craft more flexible arrangements and to leave certain parts of the agreements open to future adjustments when services are both highly asset specific and more difficult to measure. It is unclear whether what Poppo and Zenger observe as a decrease of use of formal contracts, may in fact be an increase in relational exchanges – or more adaptive approaches to contracting as outlined by Andrew and Hawkins.

Andrew and Hawkins (2012) use the measures developed by Brown and Potoski (2005) and classify public safety services based on their characteristics in a two-by-two matrix similar to the one depicted in Table 1. Consistent with Brown and Potoski’s (2005) application of the transaction costs framework, goods and services are classified into four categories: (1) low asset specificity and low service measurability difficulty, (2) high asset specificity and high service measurability difficulty, (3) low asset specificity but high service measurability difficulty, (4) high asset specificity but low service measurability difficulty (Andrew & Hawkins, 2012). The category of goods and services containing low asset specificity and low measurability difficulty is used as the reference group in the empirical analyses. Subsequently the independent impact of services that are (1) difficult to measure but not asset specific, (2) highly asset specific but easy to measure, and (3) both asset specific and difficult to measure can be assessed.

The empirical results show support for the hypothesis advanced in their study. Namely, when “service characteristics of the transaction are difficult to apply to other service areas and not easily measured, there is a higher likelihood of an adaptive MLA” (Andrew & Hawkins, 2012). In other words, services classified by high asset specificity and high measurement difficulty are more likely to impact the establishment of adaptive agreements when compared to the reference group (low asset specificity and low measurement difficulty).
Poppo and Zenger similarly suggest that extreme hazards lead to less complex contracts, and thus less management control. The question is, can it be reasoned that what Brown and Potoski conceptualize as extremely difficult to measure, and what Poppo and Zenger suggest are extreme contracting hazards are similar concepts? And if they are, is it feasible that what Brown and Potoski perceive as decline in direct government oversight is an increase in proxy monitoring? Figure 3.2 captures this suggested association. The y-axis in the figure denotes the expected probability of observing monitoring by proxy (by either vendors or third-party monitors as defined in the paragraphs above). The x-axis in the figure capture the range of transaction costs: ranging from low to moderate to high. Here low represents services where both asset specificity and measurement difficulty are low. Moderate captures Brown and Potoski’s (2005) classification of mixed services where one of the characteristics is high and the other one is low. High transaction costs contains those services where both asset specificity and measurement difficulty are considered high.

Figure 3.2: The expected use of proxy monitoring (vendor and third-party monitoring) as a function of services transaction costs (asset specificity and measurement difficulty).

In the previous section of this chapter it was hypothesized that increases in asset specificity and measurement difficulty will be associated with lower probability of observing monitoring by proxy. In Figure 3.2 as both asset specificity (AS) and measurement difficulty
(MD) move from low to moderate on the transaction costs labeled x-axis the expected probability of observing proxy monitoring when compared to direct government monitoring decreases. The hypotheses complement previous research by Brown and Potoski regarding governments’ use of monitoring tasks. The empirical results by Brown and Potoski (2003) show that increases in services asset specificity and measurement difficulty lead to greater direct government monitoring. As a result, I propose that this increase in direct government monitoring is accompanied by reduction in the reliance on proxy monitoring.

This leads to the following questions: how do services’ high transaction costs (services are both asset specific and difficult to measure) affect monitoring by proxy? Would outsourcing a service that is both asset specific and difficult to measure be associated with greater reliance on vendor and third-party oversight compared to direct government monitoring? It is likely that governments’ perceived lack of direct monitoring for high transaction costs services is explained by public managers relying on proxy monitoring.

A compelling argument can be made that the service measurability variable and its squared term used in the Brown and Potoski (2003) study captures more nuanced service characteristics. Service measurability is defined as “how difficult it is for the contracting organization to measure the outcomes of the service or to monitor the activities required to deliver the service” (Brown & Potoski, 2003). The first part of the measurement difficulty definition clearly articulates the focus to be on outcomes of the various services. But the second part (after “or”) actually asks about activates required to deliver the services, and whether they are easily observed. These are two different components of measurement difficulty. One simply evaluates whether the outcomes of services are readily available and easy to evaluate. The other involves evaluating the activities that vendors perform in order to perform the services.

Thus what Brown and Potoski conceive as a nonlinear relationship may be caused by the compounding of the two characteristics into a singular measure. It is likely that their measure on scale from low to moderate captures only one, while from moderate to high both are captured. This is similar to Poppo and Zenger’s interaction term, and the Levin and Tadelis’ finding that many services indeed combine multiple transaction costs characteristics that complicate contracting. Thus we might expect that the decline of direct government monitoring may be accompanied by offsetting proxy monitoring.
High transaction costs are likely to result in greater reliance on proxy monitoring when compared to direct government oversight. In Figure 3.2, when services’ characteristics move from moderate to high transaction costs (on the x-axis) the probability of both vendor and third-party monitoring are expected to increase compared to direct government monitoring. Here high transaction costs services are those that are considered to be both asset specific and difficult to measure (Brown & Potoski, 2005). For these services it can be theorized that proxy monitoring is more likely than direct government monitoring. The reasoning is outlined below.

First, if governments outsource a service that is considered asset specific TCE logic suggests the exchange to lock both parties in to a lengthy relationship. This is likely, the theory posits, because the specialized investment will give the first contract winner an advantage and discourage potential bidders in subsequent rounds. On the other hand, governments may become reliant on the service producer and with no alternatives from the market the relationship may endure. Both parties are expected not to want to lose the specialized investments that have been made towards the interaction.

Secondly, outsourcing a service that is both asset specific and difficult to measure creates an additional disadvantage for public managers. The asset specificity of the service might lock the exchange partners in lengthy contracts. And if the services are difficult to measure governments would be facing significant monitoring costs as Brown and Potoski (2003) show. These monitoring costs may be driven partially by information asymmetry. The principal in these exchanges (contracting government) may not be able to acquire timely and adequate information regarding the vendors’ performance. Thus they are at a disadvantage if their contractors decide to act opportunistically. But it is unlikely that they cease monitoring, rather it is more probable that they restructure the monitoring arrangement in an effort reduce their informational disadvantage.

Monitoring by proxy is a strategy local governments can use to address their informational disadvantage when relying on vendors for service delivery. This is true for short term as well as long term contracts. Two types of proxy monitoring alternatives are possible based on the nature of the government-vendor relationship. If the relationship is collaborative (Amirkhanyan, 2009) and trust between the exchange partners exists, it is more likely that governments will trust vendors’ self-reported performance data. This association is captured in Figure 2 for services that move from moderate to high transaction costs and the expected probability of vendor monitoring compared to direct government oversight increases. In the
figure the slope labeled vendor monitoring is increasing as transaction costs characteristics move from moderate to high on the x-axis.

Alternatively, if the government-vendor relationship is an example of a classical principal-agent exchange reliance on third-party monitoring may be more likely. In Figure 2 as services move from moderate to high transaction costs classification the probability of using third-party monitors compared to direct government oversight is more likely. The presumption here is that governments do not fully trust vendors’ self-reported performance and data. If this is the case governments are expected to employ a third-party monitor to provide additional information.

Hypothesis 3: The outsourcing of high transaction costs services (both asset specificity and measurement difficulty are high) is associated with an increase in proxy monitoring.

This chapter outlined the logic for the impact of transaction costs’ characteristics on the expected likelihood of governments using monitoring by proxy in their outsourced service production. Specifically, the association between mixed transaction costs, high transaction costs, and governments’ use of proxy monitoring for various oversight tasks is conceptualized. Monitoring by proxy in this study consists of using vendors’ self-reported performance and data or relying on third-party monitors. To complement, and contribute to, Brown and Potoski’s (2003; 2006) research the first two hypotheses theorize that an increase in either asset specificity or measurement difficulty will be associated with lower reliance on proxy monitoring when compared to direct government oversight. However, whereas Brown and Potoski perceive that governments reduce their use of monitoring tasks for extremely difficult to measure services, I argue that this decrease is mirrored by an increase in proxy monitoring. In the following chapter I outline the research methodology and analytic techniques to test the hypotheses advanced in this chapter.
CHAPTER 4
RESEARCH METHODOLOGY

This chapter will present the sampling, data, measurements, and estimation techniques used in the analyses for the dissertation. Survey research was used in order to acquire the data necessary for analysis to answer the research questions raised in Chapter 1. The use of survey research is common in public service contracting studies (Brown & Potoski, 2003; Brown & Potoski, 2005; Levin & Tadelis, 2010; Lamothe & Lamothe, 2012). The data was acquired from two sources to create a unique dataset discussed in detail in the sections below. The first source is the annual Florida League of Cities – CityStats survey sent out to municipalities’ managers in 2014. The second source is the 2012 Census of Governments Employment survey.

My research design analyzes the contract monitoring decisions of municipalities in the state of Florida. Although focusing on municipalities from a single state may raise questions regarding the generalizability of the study, this concern may be overstated. It is common for public contracting scholars to examine the impact of factors on outsourcing decisions in a single state (Romzek & Johnston, 2002; Van Slyke, 2007; Brown & Potoski, 2006; Clary, Ebersten, & Harlor, 2000; Behn & Kant, 1999; Amirkhanyan, 2009; Malatesta & Smith, 2013). In addition, scholars have found that at least in some policy areas Florida’s models of outsourcing are similar to those used by other states in the nation, such as New York, Arizona, Michigan, and Kansas (Lamothe & Lamothe, 2009).

Even though contract language and structure may vary across jurisdictions as a result of legal traditions, certain concepts and practices may be universal. Malatesta and Smith (2013) use data from a single state to generalize findings to a broader population. The authors examine 130 professional service contracts by state government agencies in the state of Indiana and analyze whether governments design their contracts for flexibility. According to them these contracts are typical of many contracts entered into by government organizations (Malatesta & Smith, 2013). It is further their assertion that the concepts used in their theoretical propositions – complexity and flexibility – are universally applicable. Monitoring tasks to assure vendor accountability may similarly be generally applicable to various outsourcing situations.
To answer the research questions raised in this study I conduct quantitative analyses. The statistical techniques used are logistic regressions with Heckman selection models to account for the fact that not all municipalities in the sample contracted out public service delivery. In other words, the dependent variable is only observed for municipal services that were outsourced. Similarly, to Brown and Potoski (2003) this dissertation uses a two-stage Heckman selection model to test whether or not each government engages in contracting in the first stage. In the second stage of the analyses it can be estimated whether or not the contracting governments engage in proxy monitoring.

This chapter proceeds by explaining the unit of analysis – municipal service – and describes the sample frame and data collection. The subsequent section outlines the variables measurement and operationalization. The final section of the chapter outlines the analytic techniques used in the analyses and the models specifications. The analyses include nine two-stage Heckman selection models to test for selection bias. The null hypothesis that the selection and the outcome equations are independent cannot be rejected, thus in Chapter 5 the results of nine binary outcome models are presented.

**Municipal Service Contracting in Florida**

The unit of analysis for the research is municipal service, and the focus is on outsourced municipal services in particular. The variables show the monitoring choices by each government for each of the services provided through contracting. The outsourcing of services is extensive and widespread in the state of Florida (Lamothe & Lamothe, 2009). In addition, at least at the state level, there is evidence that decentralized contract management structures are used (Lamothe & Lamothe, 2009). This type of environment lends itself nicely to examining whether such practices are also prevalent at the municipal level. The use of proxy monitoring is an example of decentralized contract management. Thus studying the potential for decentralized contract management (and monitoring in particular) in the state of Florida seems reasonable.

When it comes to the monitoring and oversight for contracted out services Florida local governments have full autonomy. Florida Statutes (489.131) indicate that municipalities and counties have the authority to “regulate quality and character of work performed by contractors…to adopt any system requiring submission and approval of plans and specifications for work to be performed by contractors”. Within this autonomy over contracting decisions
Florida municipalities can choose which monitoring tasks to perform, and also which to
outsource to other parties such as vendors and third-party monitors.

**Methodology**

In the sections below I summarize the data and operationalization of variables used in the
study. The following sections outline the analytic techniques used, models specification, and
model estimation.

**Data and Measurement**

This section will articulate the data sources, and measurement for the variables used in
the study. The primary data source for the analyses is from the Florida League of Cities’ annual
survey of Florida Municipalities – CityStats. Additional data on municipal employment was also
acquired from the 2012 Census of Governments. Using the CityStats survey, in combination with
Census of Governments data, I create a novel dataset with strengths that outweigh its
disadvantages.

The unique dataset used in this dissertation can be seen as advantageous in a couple of
ways. Firstly, similar to Brown and Potoski’s (2006) survey of Ohio municipalities the response
rate for the CityStats survey is significantly higher than the often used International City/County
Management Association (ICMA) survey instrument. 293 municipalities out of four hundred
and ten returned usable responses to the Florida League of Cities’ annual survey (71.4%
in the state of Ohio with population over 15,000. Of the 111 cities surveyed 105 participated
(95% response rate). The sample frame for the ICMA survey instrument includes both cities and
counties and consists of about 4,000 U.S cities with response rate of about 20-25% (Levin &
Tadelis, 2010). Thus using single state survey instruments tends to generate higher response
rates, and arguably better jurisdictional representation. Also it must be pointed out that the
Florida League of Cities survey is only sent to municipalities and not counties, whereas the
ICMA sample contains both types of governments. This however may not be a great
disadvantage for this study since Brown and Potoski (2003) find that county governments are no
more or less likely to engage in contract monitoring relative to cities in the ICMA survey.
Secondly, the CityStats survey used in the dissertation includes all Florida municipalities and thus does not intentionally under-represent smaller jurisdictions in the manner that Brown and Potoski and the ICMA samples do (Levin & Tadelis, 2010). In their survey of Ohio municipalities Brown and Potoski surveyed only cities with population over 15,000. Similarly, the ICMA sends surveys to chief administrator officers in all municipalities with population over 10,000 and to a random sample of one in eight municipalities with population between 2,500 and 9,999 (Levin & Tadelis, 2010). As a result, Levin and Tadelis (2010) indicate that smaller cities are significantly under-represented in the ICMA samples. Thus we know a lot about the contracting practices of bigger U.S. cities but very little – if anything – about the practices of smaller jurisdictions. The data used in this dissertation improves on this shortcoming in the literature. The average municipal population in the Florida League of Cities’ survey responses is estimated to be about 22,314 citizens. The average population of all municipalities in the state is 17,106 inhabitants. Thus the sample seems representative of the general size of Florida municipalities. The median of population size (50th percentile) is 6,884! And the 75th percentile is 23,784 – a significant number of Florida’s municipalities are smaller in size.

Lastly on the basis of population composition and median income Ohio does not do much better than Florida when compared to national averages. Brown and Potoski (2006) acknowledge that Ohio cities may not be strictly a representative sample of U.S. cities. But the authors point to population composition, and median income as good indicators to validate the use of Ohio cities. At the time of their study the median income nationally and the one in Ohio were comparable ($40,956 in Ohio and $41,994 nationally). Today the national median income is slightly higher ($51,939) than the one in Florida ($47,463). Also Ohio’s minority population of 15 percent (11.5% African American) is arguably comparable to the national averages of 25% minority population (12.3% African American). Florida’s minority population on the other hand is higher than the national average (35%, and 15.6% African American). Arguably Florida is also a fertile ground for national comparison. After all, “Florida is also fascinating to those who study it because the state’s four regions reflect in microcosm national trends and changes in national identity” (Colburn & deHaven-Smith, 2010).

Most scholars interested in the impact of services’ transaction costs characteristics conduct supplemental surveys in order to acquire measures of asset specificity and measurability (Brown & Potoski, 2003; Levin & Tadelis, 2010). Since the ICMA survey does not provide
detailed information on key variables (such as monitoring techniques and service characteristics) researchers have to send additional survey instruments to a sub-sample of respondents. For example, Brown and Potoski (2003) surveyed a random sample of seventy-five local governments from the ICMA sample in an effort to acquire a rating of services’ asset specificity and measurability difficulty of each of the 64 services listed in the ICMA national survey. Thirty-six usable surveys were returned (response rate of 48%) and used to operationalize the transaction costs variables of interest. Levin and Tadelis (2010) surveyed 23 city managers, and used a representative sub-sample of only 29 ICMA services to acquire detailed information on how “difficult it is to specify and administer performance requirements for a given service”.

The survey data used in this dissertation similarly acquires information on municipal service provision, but the survey instrument also includes questions about the use of contract monitoring tasks. The Florida League of Cities’ annual survey of Florida municipalities – CityStats – consists of approximately 40 questions that are disseminated to Florida’s 410 municipalities. The questions in the CityStats survey are focused on municipal operations, budgets, policies, and services. The survey instrument is sent out to the municipalities’ managers. Staff members who are identified as responsible for individual sections of the survey addressing various municipal functions are solicited independently. Therefore, in some cities the managers might be responding to the contracting monitoring questions. In others there might be designated staff that is responsible for contracting functions and they may be the respondents. Only one survey per city is completed. The traditional average response rate of 80% for the Florida League of Cities survey equates to more than 80% of the whole state-wide municipal population.

Respondents to the survey instrument are asked what type of services does the city provide, who provides the services, and how has the provision changed from the previous fiscal year. Included in the 2014 edition of the survey there were questions focused on how Florida cities monitor their contracted out services. The survey instrument was sent out electronically early in the summer of 2014. Subsequent nonresponses were contacted through non-electronic mail as well.

**Dependent variables: use of proxy monitoring for oversight tasks.** Monitoring can occur throughout the service delivery process (Marvel & Marvel, 2007). This study
operationalizes oversight tasks using Marvel and Marvel’s (2007) classification of monitoring tasks. The authors divide their monitoring measures into four categories to reflect where the activities fit in the delivery process. The first category (**upfront monitoring**) includes activities undertaken to control the services that are going to be provided by specifying their characteristics. The second category (**process monitoring**) includes those activities that are performed during the delivery of the services. The third category (**ex post monitoring**) includes tasks that are used to measure services outcomes. The fourth, and last, category in the Marvel and Marvel (2007) classification captures the efforts to use the results of monitoring to adjust vendor incentives. The constructs from the last category of monitoring tasks are excluded from analyses in this dissertation. Arguably these actions (rewarding and sanctioning performance) are the results of the preceding monitoring activities, and not monitoring activities as the preceding tasks.

A total of 9 functions are included in the survey questionnaire. Respondents can indicate whether these are used to monitor vendor performance as specified in contractual relationships. The monitoring functions included in the survey instrument are: (1) setting work plans; (2) setting performance targets; (3) assessing compliance with work plans; (4) assessing compliance with rules and regulations; (5) completion of financial audits; (6) monitoring client complaints; (7) verifying and assuring services are provided as required by the contract; (8) measuring results of services provided; (9) measuring citizen satisfaction with the services provided.

In addition, respondents can indicate who in the contractual relationship performs the tasks: (1) the city – direct government monitoring or (2) other – use of proxy monitoring. Other here captures monitoring by proxy (Brown & Potoski, 2006) and consists of either vendor self-reporting or use of third-party monitors. Brown and Potoski (2006) operationalize proxy monitoring to occur when “governments delegate monitoring activities to another entity” which could include vendors’ self-reported performance as well as clients’ reporting on the quality of services they receive. In addition, the use of third-party monitors is also possible (Amirkhanyan, 2009; Yang & VanLandingham, 2011), and this could expand the conceptualization of external proxy monitoring used by Brown and Potoski (2006).

Fifteen of the sampled municipalities relied on third-party monitors. This is only a fraction of the 62 to 73 used in the statistical analyses. To acquire additional information on what type of organizations are used as third-party monitors the municipalities’ awarded bids were
reviewed. The information was acquired by visiting these Florida cities’ websites and reviewing the information from cities’ purchasing divisions.

The overwhelming number of third-party monitors used by governments are consulting firms with technical expertise in the particular area of contracting. For example, the city of Sarasota solicited proposals for consulting engineering services related to public transportation. The bid specifies that the selected consultant(s) are going to be required to investigate work in addition to performing assessments, and investigating problems. Similarly, the city of Stuart also sought out the services of a consulting firm to review plans, specification and estimates developed by another vendor. The city of Stuart also outsourced debris removal services from its waterfront areas. Subsequently, the city also outsourced debris monitoring services to a consultant that specializes in ongoing performance assessments, and quality assurance and control programs. The city of Palm Coast similarly sought out the services of capable consultants to provide to provide services as the city transitions a park and recreation facility to a city managed facility using vendors to provide the necessary services.

The choice of who performs the tasks is operationalized as a binary variable scored 1 if proxy monitoring is used, and 0 if the tasks are performed by municipalities directly (managers or staff). Table 4.1 outlines the operationalization and data source for the dependent variables. This coding strategy’s implication is discussed in the Analytic Technique section of the chapter as well as in the concluding chapter of the dissertation. The first column in Table 4.1 lists the nine monitoring tasks used to operationalize the dependent variable of interest. The second column shows the coding strategy, and the last column lists the survey question used. Survey respondents can choose from the following options: (1) mostly performed by city staff; (2) mostly performed by appointed contract manager – city official; (3) mostly performed by contractor; (4) contracted out to another entity. A measure of zero (0) means that the task is performed directly by government either by an appointed contract manager or city staff – options (1) and (2) in the survey instrument; A measure of one (1) means the task is performed by proxy monitoring through either contractor (vendor self-reported monitoring) or use of third-party monitors – options (3) and (4) in the survey instrument. The CityStats survey is Florida League of Cities’s annual survey conducted in 2014.
Table 4.1. Measurement and sources of the dependent variables: use of proxy monitoring for oversight tasks.

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Measure</th>
<th>Source</th>
<th>Survey Question</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Upfront monitoring</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Setting work plans</td>
<td>0 – task is performed directly by government</td>
<td></td>
<td>For the above contracted services, who in the contractual relationship is mostly responsible for the listed functions?</td>
</tr>
<tr>
<td>Setting performance targets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Process monitoring</strong></td>
<td></td>
<td>CityStats</td>
<td></td>
</tr>
<tr>
<td>Assessing compliance with work plans</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assessing compliance with rules and regulations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial audits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitoring complaints</td>
<td>1 – proxy monitoring through vendor self-monitoring/use of third-party monitors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verifying service delivery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ex post monitoring</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measuring results</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measuring Citizen satisfaction</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Independent variables: mixed transaction costs, and high transaction costs.** Services’ asset specificity and measurement difficulty are key independent variables in the study. Following Brown and Potoski’s (2005) application of the transaction costs framework, this dissertation classifies municipal services into four categories: (1) low asset specificity and low service measurability difficulty; (2) low asset specificity, but high service measurability difficulty; (3) high asset specificity, but low service measurability difficulty; and (4) high asset specificity and high service measurability difficulty (Andrew & Hawkins, 2012). Brown and Potoski (2003) define asset specificity as the use of specialized investments required to produce the service. Measurement difficulty refers to how difficult it is for the contracting organization to assess the outcomes of services or to monitor the activities required to deliver services. To measure these transaction cost dimensions the authors ask city managers to rate the two characteristics of all 64 services listed in the ICMA survey. The respondents are provided with a scale of 1 to 5 for each of the two factors in addition to a full definition of the concepts.

In subsequent research Brown and Potoski (2005), as well as Levin and Tadelis (2010), highlight an important issue with the above strategy. Often times, according to the authors it is difficult to separate the dimensions intended to measure transaction costs characteristics. For example, Brown and Potoski find high positive correlation between the two measures. Similarly, Levin and Tadelis show that most of the services they operationalize score low on none or all three transaction costs dimensions used in their analyses. Their study used (1) measurement
difficulty; (2) need for flexibility; and (3) holdup potential. Twenty-three out of the 29 services (nearly 80%) they use score uniformly across the three measures – all scored low or all scored high.

There are two ways to address this issue in the current study. Strong correlation has been reported in standardized measures, as well as in the continuous version of the transaction costs dimensions (Levin & Tadelis, 2010; Brown & Potoski, 2005). Consequently, scholars use one of two strategies. Levin and Tadelis (2010) use a single principal component measure of contracting difficulty in their statistical analyses. Since the three transaction costs dimensions score uniformly for nearly 80% of the services this appears to be the appropriate approach. Brown and Potoski (2005) on the other hand classify the services based on whether the service displays high or low asset specificity and easy or difficult measurement. The authors use the mean rating for each dimension as a rudimentary threshold to sort all of the services into high and low categories (Brown & Potoski, 2005). The Brown and Potoski service characteristics are positively correlated at r = .47 indicating that services that are easy to measure also tend to lack the need for asset specific investments (Brown & Potoski, 2005).

In this dissertation, I take the Brown and Potoski approach and create categories based on their classification of services. In the CitiStats survey municipal managers are asked to answer questions about the provision of 10 city services. These services are then categorized into the above transaction costs categories following the established literature. Seven of the ten services are also listed in the ICMA survey instrument and categorized accordingly by Brown and Potoski. The remaining three – beach access, marina, and CRA (community redevelopment agency) – were assigned categories based on analogous ICMA services. In addition, brief phone interviews were conducted with Florida public officials to gage their agreement with the classification of the services. The ten services, and their classification are displayed in Table 4.2 below. After coding the variables, the services’ asset specificity and measurement difficulty are similarly correlated when compared to the Brown and Potoski demonstrated correlation. The 10 Florida services’ characteristics are positively correlated at r = .41 (Brown and Potoski’s correlation of the two characteristics is .47).

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11 Factor analysis was also used to verify whether the monitoring tasks belong to distinct factors, however it was proven not to be an adequate technique for the data used in the dissertation.
Table 4.2. Transaction costs categorization of services.

<table>
<thead>
<tr>
<th>Low asset specificity</th>
<th>High asset specificity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Easy to measure</strong></td>
<td></td>
</tr>
<tr>
<td>Parks, Cemetery, Rec.</td>
<td>Transportation, Libraries</td>
</tr>
<tr>
<td>Center, Beach Access</td>
<td></td>
</tr>
<tr>
<td><strong>Difficult to measure</strong></td>
<td></td>
</tr>
<tr>
<td>Community Redevelopment</td>
<td>Marina, Charter School,</td>
</tr>
<tr>
<td>Agency</td>
<td>Health Clinic</td>
</tr>
</tbody>
</table>

The variables measuring services asset specificity and ease of measurement in this dissertation are dichotomous. Services are coded 1 if they are highly asset specific (0 otherwise) and similarly services are coded 1 if they are difficult to measure (0 otherwise). Using this coding strategy a two-by-two classification is created.

Table 4.3 lists the operationalization of the independent variables and their source. Services that are easy to measure and are low in asset specificity are considered Low Transaction costs services – the reference group in the analyses. Services where one of the characteristics is high, but the other is low are mixed transaction costs services. Asset Specificity is coded 1 when the service is considered asset specific but its outcomes and delivery are easy to measure; zero if both characteristics are low. And similarly Measurement Difficulty is coded 1 when the service and its delivery are difficult to measure; zero if both characteristics are low.

And lastly services where both service characteristics are considered high are labeled as High Transaction costs services, these are coded 1 when both asset specificity and measurement difficulty are high, and zero when both are considered low. There are four binary independent variables used in this dissertation. The reference group includes variables that are not asset specific and have easy to measure outcomes. An increase in asset specificity is observed when a service is considered asset specific, but with easy to measure outcomes. Measurement difficulty is observed when services have observables that may be disputable, but the services are not considered asset specific. Services that are both asset specific and difficult to measure are labeled high transaction costs services.
Table 4.3. Measurement for independent variables.

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Measure</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset Specificity</td>
<td>1 – service has high asset specificity, but is easy to measure; 0 – service has low transaction costs</td>
<td></td>
</tr>
<tr>
<td>Measurement Difficulty</td>
<td>1 – service is difficult to measure, but is not asset specific; 0 – service has low transaction costs</td>
<td>CityStats</td>
</tr>
<tr>
<td>High Transaction Costs</td>
<td>1 – service is both difficult to measure and asset specific; 0 – service has low transaction costs</td>
<td></td>
</tr>
</tbody>
</table>

CityStats survey is the annual Florida League of Cities Survey conducted in 2014. The reference group in the study is low transaction costs: both of the service characteristics are low and coded zero. In the table are the three types of transaction costs used in the study: (1) Mixed transaction costs where only asset specificity is high and measurement is easy – asset specificity is coded 1; (2) Mixed transaction costs where services are difficult to measure but are not asset specific – measurement difficulty is coded 1; and (3) High transaction costs where both service characteristics are high – high transaction costs coded 1.

Four municipal services are coded as having low transaction costs (parks, cemetery, recreation center, beach access) – upper left quadrant in Table 4.2. This is the reference group of services in the analyses. These services are often dominated by need for facilities maintenance and operation. The outcome of the provision of these services is easily measurable, and little to none specialized investments are required. In the case of parks and recreation for example upkeep of facilities, landscape maintenance, and facility repairs dominate the essential functions listed for service provision. For example, the city of Sanford’s Parks and Grounds Operations Division lists the following core functions in their service delivery: landscape maintenance of city properties, maintenance and renovation of play equipment, and facilities in city parks, cemetery management, monitor and maintain Urban Forrest. The Casselberry Public Works
Department is similarly responsible for The Casselberry Recreation Center that offers a billiards room, and activity room to the users of the facilities.

Three municipal services have high transaction costs (marina, charter school, health clinic) – lower right quadrant in Table 4.2. These services on the other hand have outcomes that are not easily measurable. And their provision requires acquisition of specialized knowledge, as well as use of service specific tools. For example, asset specific investments can be seen in the Panama City Marina (one of two operated by the city). The city operates this 240-slip marina facility designed for all classes of vessels from 30 feet to 120 feet with drafts to 10 feet. The marinas have full-service fuel docks with a variety of fuels, and can accommodate vessels with a range of power requirements. Another example is the healthcare center provided by the city of Cocoa. The center serves employees, retirees, and dependents under its city health plan. A vendor, CareATC a company based in Tulsa Oklahoma, operates a cost-effective center under a city council-approved three-year contract. The company is responsible for upgrades to a city-owned building on Lemon Street, as well as hiring staff such as physicians and medical assistants. Charter schools are similarly considered to require asset specific investments and boast difficult to measure outcomes.

Finally, three services are coded as having mixed transaction costs. The lower left quadrant contains CRA which is considered to be low in asset specificity, but its outcomes are considered difficult to measure. Community redevelopment agencies typically focus on community improvements and pick projects to implement. As such the outcomes are difficult to measure: did the agency select the appropriate project and the appropriate strategy are typically debated. Nonetheless specialized investment is not needed to participate – a requirement to be included on some boards is simply residence and homeownership in the city. The other off diagonal (upper right quadrant) includes transportation and library services. These are considered to be highly asset specific, but their outcomes are easily measurable.

**Control variables.** Municipal capacity, jurisdictional characteristics, contracting out experience, and type of vendor are all control variables in this study. The variables were operationalized using both the Florida League of Cities – CityStats survey, and the 2012 Census of Governments. Table 4.4 provides the measurement and sources for the variables. These
variables are often utilized, thoroughly theorized, and acknowledged as theoretically important. Most, if not all contracting studies include a measure of capacity in their empirical analyses.

Table 4.4. Control variables: measurement, and source

<table>
<thead>
<tr>
<th>Variable</th>
<th>Measurement</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government vendor</td>
<td>0 – vendor is a private sector organization; 1 – vendor is a public organization</td>
<td>CityStats</td>
</tr>
<tr>
<td>Taxes per capita</td>
<td>Total taxes levied/Population</td>
<td>CityStats</td>
</tr>
<tr>
<td>Number of cities in county</td>
<td>Number of municipalities in the county</td>
<td>CityStats</td>
</tr>
<tr>
<td>Population</td>
<td>Population in the municipality</td>
<td>CityStats</td>
</tr>
<tr>
<td>Total municipal employees</td>
<td>Number of municipal employees</td>
<td>Census of Governments</td>
</tr>
<tr>
<td>Administrative employees</td>
<td>Number of administrative employees</td>
<td>Census of Governments</td>
</tr>
<tr>
<td>Contracting out experience</td>
<td>Number of contracted services/Number of services provided</td>
<td>CityStats</td>
</tr>
</tbody>
</table>

CityStats is the Florida League of Cities annual survey. Respondents are asked the following question: “Which of the following services does your city provide, who provides those services?” The question is in matrix form and the rows are 10 services; the columns are the following options: (1) not provided; (2) city operated by city employees; (3) contracted out to another city; (4) contracted out to the county; (5) contracted out to a private entity. Excluded from analyses are services that are coded as not provided. Government vendor 0 coding includes responses that indicate the services are contracted to a private entity (option 5). Government vendor 1 coding includes responses that indicate the services are contracted to another city and/or county (option 3 and option 4).

In this study I use two types of government capacity measures. One is taxes per capita that reflects the fiscal resources municipalities are able to acquire. Taxes per capita are measured by dividing the municipal tax revenue levied by the municipality’s population. The total taxes levied by each municipality, and municipal population were acquired from the Florida League of Cities. The second government capacity measure includes the number of total employees, and

12 The property tax data is provided by the Florida Department of Revenues’ County and Municipal Property Tax Data Tables.
number of employees that are categorized as general administrative staff. The data for these measures is acquired from the 2012 Census of Governments: Employment. The population of interest in this survey includes 90,690 local governments, including municipalities. The state of Florida is not listed as noncompliant with the Total Quality Response Rate (TQRR). This means that Florida met The Census Bureau’s quality standard on releasing data products (70% TQRR). Local governments were surveyed using a mail questionnaire. All respondents who received the questionnaire had options of completing the survey using a web-based instrument as well. 78.7% of the local government respondents used the online survey. The respondents report the number of municipal employees, as well as the number of municipal employees considered general administration. The more employees a city has the greater their capacity to monitor a network of vendors if the city engages in contracting. In addition, general administrative staff is often tasked with contract oversight at the local government level. Therefore, both of these measures of capacity may impact the monitoring capacity of municipalities.

The size of the municipal population and how many cities are located within the county are also important factors. These measures were also acquired from the Florida League of Cities. Arguably how many citizens live in a municipality will determine the number and extend of services that are provided. In addition, other scholars have used population as a poor proxy for the presence of a competitive market when interacted with metropolitan status (Brown & Potoski, 2003). How many cities are located in a county may also impact the contracting decisions of municipalities. In counties where there are numerous municipalities it might be easier to engage in interlocal agreements for the provision of services (Andrew & Hawkins, 2012).

Whether or not the vendor is another government has been recognized as an important factor in public service contracting. In this study this variable captures whether the partner is a local government.

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13 The Total Quality Response Rate (TQRR) is calculated for the key variables in each state and locality. The key variables for the survey are total employment and total payroll. This response rate is computed separately for each key variable by summing data provided by the respondents for the key variable and dividing this sum by the sum of the respondent data and the imputed data for the key variable. The result is multiplied by 100. State and local estimates of Louisiana, Maryland, Massachusetts, Minnesota, New Hampshire, and Washington failed to meet the 70% TQRR standard for at least one of the key variables. Local governments in a total of nine states, including Connecticut, Mississippi, and New Mexico, were noncompliant for at least one TQRR key variable.
public entity (city or county coded 1), or if the vendor is a private sector organization (coded 0). Unfortunately, in this study the data does not allow for a distinction between for-profit and nonprofit vendors from the private sector.

And lastly contracting out experience may impact contract monitoring choices of local governments. In this study contracting out experience is operationalized by the proportion of the services that are provided through contracting as compared to the total number of services that a municipality provides. The logic is that having more services provided through contracts would increase municipal managers’ exposure to more contracting. Thus they would arguably have more exposure and perhaps have gained greater experience and/or familiarity with contracting. If this is the case, they may also have different strategies for monitoring their vendors.

Political factors may influence the municipalities’ contracting decisions. Political ideology, as well political uncertainty, could be important in public services outsourcing (Deslatte, Swann, & Feiock 2016). These factors however are difficult to measure and include in quantitative analyses. In this dissertation data was examined to account for municipal mayor and city manager change (turnover) that could capture political uncertainty. Unfortunately, the availability of these types of data is scarce and when included in the empirical models the number of observations was reduced to only 55-65. With such low number of observations, it was not possible to conduct a sound quantitative analysis. Admittedly, political factors may influence contracting decisions, however for the present analyses their inclusion was not feasible. Arguably political environment, as well as organizational culture, would be best studied qualitatively with comparative case studies methods. This limitation is further discussed in the concluding chapter of the dissertation.

Analytic Technique

The analyses in this dissertation follow Brown and Potoski’s (2003) strategy adopted when demonstrating “that when governments contract for services in contexts that risk contract failure, they engage in a variety of monitoring techniques to improve their ability to monitor and correct vendor performance”. In their study the scholars estimate four two-stage Heckman selection models for their four monitoring tasks of interest. A two-stage Heckman selection model is necessary when the dependent variable of interest is observed contingent on another variable. In this dissertation I seek to estimate the impact of transaction costs factors on the
probability of observing proxy monitoring in the delivery of contracted out municipal services. In other words, contract monitoring can only be observed for services that were contracted out. This creates a sample selection problem because the dichotomous variable \((y^c)\) indicating whether a service is contracted out in the models, described below, determines whether or not proxy monitoring \((y^{pm})\) is observed: proxy monitoring is only observed if a municipality outsources service delivery \((y^c=1)\).

Two-stage Heckman selection models account for possible selection bias and allow for the modeling of a selection stage, and an outcome stage. Heckman analysis allows for null hypothesis testing that the “selection process and the outcome process are independent of each other”. In this dissertation the first stage will model whether or not each government engages in any contracting. In the second stage I model whether or not governments that contract out service production engage in proxy monitoring – rely on vendor self-reporting, and/or use third party monitors (Brown & Potoski, 2006; Amirkhanyan, 2009; Yang & VanLandingham, 2011). Below is the full two-stage model as used by Brown and Potoski (2003) and applied in this dissertation.

\[
y^c = x_i \beta + u_i \quad (1)
\]

and

\[
y^{pm} = z_i \phi + u_i \quad (2)
\]

In Equation 1 \(y^c\) is the selection dependent variable scored 1 if the municipality outsources a public service, 0 otherwise. Because municipal service is the unit of analysis every row in the dataset represents an individual service that can be outsourced by a municipality. In the second equation (Equation 2) \(y^{pm}\) is the second-stage dependent variable scored 1 if municipalities use proxy monitoring, and 0 if they monitor the vendor themselves. In the first equation above \(x_i\) is a vector of selection equation independent variables. Likewise \(z_i\) in the second equation is a vector of independent variables that identifies the probability that governments engage in proxy monitoring and entrust vendors to perform monitoring tasks, or rely on third-party monitors to perform these tasks. If the error terms in the two equations are correlated Equation 2’s estimates will be biased. The Heckman selection technique “weighs the \(y^{pm}\) by results from Equation 1 to reduce or eliminate the biases in \(\phi\) resulting from the correlation between \(u_1\) and \(u_2\)” (Brown & Potoski, 2003). Lastly, because the two outcome variables are binary linear statistical techniques are inappropriate and probit models with Heckman selection are estimated.
The structure of data also allows for estimating potential ordering of the dependent variable in the outcome equation. The outcome variable in the second stage (Equation 2) is binary denoting 1 if proxy monitoring was used, and 0 if monitoring functions were performed directly by municipal officials. The coding of the dependent variable in the outcome equation aggregates proxy monitoring to include both vendors as well as the use of third-party monitors. As outlined earlier Brown and Potoski (2006) operationalize proxy monitoring to be an external mode of oversight where monitoring by proxy can include a number of actors: citizens, vendors, as well as third-parties. The assumption is that this type of monitoring is distinct from direct government oversight. It could be reasoned that since the external monitors are not public employees who are directly accountable to citizens they represent a theoretically different alternative to direct government oversight. Nonetheless it is possible that proxy monitoring itself is more nuanced and the use of different actors may be impacted by a separate set of explanatory factors. Amrikhanyan (2009) for example clearly denotes three types of monitoring relationships: (1) direct government oversight; (2) use of third-party monitors; and (3) evaluation of vendors’ self-reported performance. However, in her study she does not theorize about the potential distinction between these monitoring arrangements as they are simply suggested as explanatory factors for what the author conceptualizes as collaborative performance monitoring. At the time of this study no other theoretical literature has been advanced to tease out these potential differences. Namely, the use of third-party monitors may be distinct from using vendors to monitor outsourced service delivery, and as such it could be affected by a separate set of explanatory factors.

To examine the likelihood of these potential differences ordered probit Heckman selection models can be estimated using this dissertation’s sample and STATA 14’s heckoprobit function. For these estimations the outcome variable was coded to reflect potential ordering of monitors with direct government oversight depicting greatest public manager control over outsourced service delivery. Subsequently, the use of third-party monitors indicates that public managers enlist the services of agents to acquire additional information regarding their vendors’ performance. Lastly, contractors’ self-reported performance information is used to monitor service delivery. This coding reflects public managers having greatest control when municipalities monitor vendors directly (coded 1). The use of third-party monitors represents less direct government control over the performance for outsourced services, but this monitoring
mode allows for greater control over vendor performance relative to using contractors’ self-reported data due to the additional information provided by the third-party monitors (coded 2). Vendors’ self-reported performance indicates least amount of control exhibited by public managers (coded 3). Since the focus of this study is the prevalence of proxy monitoring relative to direct government oversight the “higher” categories here reflect higher level of monitoring by proxy as a distance from direct government control over outsourced services performance.

In the sample relatively few municipal services were monitored using third-parties. In total only fifteen jurisdictions used this monitoring arrangement for their outsourced public services. Since not all jurisdictions in the sample provide all of the services, and may not outsource these services the number of observations is further reduced. As a result, the use of third-party monitors for outsourced public service delivery ranges from 6.82 to 8.33% of the contracted out municipal services in the sample. For example, in only nine outsourced municipal services a third-party monitor was used to set performance targets compared to 53 and 38 services where governments or vendors set performance targets respectively. These 9 municipal services (observations) come from only four municipalities!

Estimating the ordered probit Heckman selection models did not yield significantly different results from the models specified below. Notably fewer of the estimated models showed significant results, however when the results showed significant associations they were consistent across the two types of models estimated. This outcome is further discussed in the Model Estimation section at the end of this chapter.

Models Specification

The analytic technique used in the dissertation necessitates specifying the variables in the first equation (Equation 1) that influence municipality’s decisions to outsource public service delivery. The variables in Equation 2 explain a government’s decision to use proxy monitoring instead of conducting oversight on its own. The independent variables in this dissertation can appear in both equations (Brown & Potoski, 2003). For example, Brown and Potoski point that governments with lower revenues may be more enticed to contract out, but these governments might engage in less costly monitoring. This example is applicable to the present study because what Brown and Potoski do not account for is that the municipalities may engage in “cheaper” proxy monitoring instead of not engaging in monitoring at all. Notably absent from Equation 1 in
this dissertation, and from Brown and Potoski’s selection equation are measures for the services transaction costs. In other words, Brown and Potoski do not include asset specificity and measurement difficulty as explanatory variables in their selection equation, they include them only in the outcome equation (Equation 2). The authors do not justify this choice in their paper. In the Model Estimation section in the subsequent paragraph the choice for not including these variables in the selection equation in this study is elaborated. Below are the variables used in the two equations respectively:

\[ \text{Equation 1 (} x_i \text{)} \]
- Taxes per capita
- Number of cities in the county
- Population
- Total municipal employees
- Administrative employees

\[ \text{Equation 2 (} z_i \text{)} \]
**Transaction Costs Variables:**
- Asset specificity
- Measurement difficulty
- High transaction costs

**Controls:**
- Government vendor
- Contracting out experience
- Taxes per capita
- Total number of employees
- Administrative employees

The dissertation’s final sample consists of 293 Florida municipalities that responded to the CityStats survey (71.4% response rate). Survey non-respondents did not differ significantly from respondents in term of municipal size and capacity in the state of Florida. The average municipal population for the survey respondents is slightly higher: 22,314 residents compared to the average population for a municipality in the state: 17,106 residents. In terms of number of municipal employees, the survey respondents’ average number of staff is 221, whereas the average number of government employees across all Florida municipalities is 255. Similar to the
ICMA dataset the council-manager form of government is also prevalent in this sample. In the ICMA samples 70 percent of the respondents are from council-manager jurisdictions; in the present study this percentage is 73.4%.

The total number of observations in this dissertation is 926. The municipal managers were asked about the provision of 10 public services; it must be pointed out that not all municipalities provide all of the listed services. A total of 926 municipal services are provided out of a possible 2930 (if all 293 municipalities provided all 10 services). Consistent with Brown and Potoski’s (2003) findings, the bulk of the services are provided internally (792 provided directly by government; 134 were contracted out).

The focus of the dissertation is the monitoring choices for these 134 contracted out municipal services. In particular, how do these services’ characteristics impact local governments’ monitoring decisions. Respondents to the Florida League of Cities survey are asked: “Which of the following services does your city provide, who provides those services and how were those services affected in the previous fiscal year?” The question is in matrix form and further asks the respondent to indicate how the services are delivered: (1) not provided; (2) city operated by city employees; (3) contracted out to another city; (4) contracted out to the county; (5) contracted out to a private entity. In the questionnaire the rows are the ten services outlined in this chapter and the columns are the delivery modes available to respondents. Included in the sample are only services that were provided by the municipalities.

When it comes to monitoring of these contracted services, survey respondents were asked about the use of nine monitoring tasks. A question included in the 2014 CityStats survey asks: “For the above contracted out services, who in the contractual relationship is mostly responsible for the listed functions?” This question is also in matrix form where the rows are the 9 monitoring tasks conceptualized by Marvel and Marvel (2007), and the columns list the following options: (1) mostly performed by city staff; (2) mostly performed by appointed contract manager (city official); (3) mostly performed by the contractor; (4) contracted out to another entity; (5) mostly not performed. The first two options represent direct government monitoring, the third option depicts vendor self-reporting and self-monitoring, and the fourth option is the use of third-party monitors. The last option – mostly not performed – is excluded from analysis. About 21% of the observations were excluded because the functions were mostly
not performed according to the survey respondents\textsuperscript{14}. A brief account of the distribution of these tasks is presented in the following paragraphs.

Tasks associated with upfront monitoring (setting work plans and setting performance targets) were performed frequently across the sampled municipalities. For only 17.42\% of municipal services in the sample work plans appear not to be set by governments directly or by proxy monitors. For these 23 municipal services survey respondents indicate that the task was not performed. Similarly, survey respondents indicate that performance targets were not set for 24.24\% of municipal services.

Process monitoring tasks on the other hand appear to be performed directly by governments or through proxy monitoring more frequently. Survey respondents indicated that process monitoring tasks were mostly not performed for only 12.88 to 19.7\% of the sampled municipal services. In less than thirteen percent of municipal services neither government staff nor proxy monitors were used to verify that services were provided as specified by the contracts. Complaints with services provision were not monitored by governments or proxy monitors in 14.39\% of the sampled municipal services and in less than sixteen percent of municipal services assessment with rules and regulations were not conducted. Assessing compliance with work plans was mostly not performed in 19.70\% of municipal services, and monitoring of financial audits was not used in 18.18\% of the sampled municipal services.

Survey respondents indicate that ex post monitoring tasks were mostly not performed in thirty to thirty-six of the sampled municipal services. Results of services were not measured in 22.73\% of the municipal services, whereas citizen satisfaction with services provision was not measured in almost twenty-eight percent of the sampled services (27.27\%). It is evident that a sizeable number of municipal services are not subjected to either direct or proxy monitoring when considering the tasks included in this study. Governments’ decision to not monitor services directly or use proxy monitoring is further elaborated in the concluding chapter where the limitations of this study are discussed and opportunities for future research outlined.

\textsuperscript{14} The survey respondents can choose from the following options for all of the monitoring tasks: (1) Mostly performed by city staff; (2) Mostly performed by appointed contract manager (city official); (3) Mostly performed by the contractor; (4) Contracted out to another entity; (5) Mostly not performed. The last option (Mostly not performed) is excluded from analyses.
Models Estimation

A total of nine two-stage Heckman selection models are estimated, and the null hypothesis of equation independence cannot be rejected for any of them (p > .43-.91). As stated above the null hypothesis tested is: the monitoring choice and the contracting choice are independent of each other (rho=0). For all of the estimated models the null (rho=0) cannot be rejected as indicated by a Wald test of the independence of equations (rho=0). Because clustered standard errors are used in the analyses a Wald test is presented instead of a likelihood-ratio test. A. The standard errors for the analyses are clustered for 259 and 260 municipalities in the nine models. Clustering of stand errors is a common procedure to account for the fact that municipal services may not be independent of each other when provided by the same municipality.

In addition, nine ordered probit Heckman selection models were also estimated to examine the potential ordering of the outcome variable in the second equation. Similarly, to the binary two-stage Heckman selection models the null hypothesis of equation independence cannot be rejected for any of the models (p> .57-.96). Notably, fewer of these models attained statistical significance, however the results between the two estimations were similar and elaborated in the results reported in the following chapter.

The total number of observations for the nine dependent variables in the outcome equation (Equation 2) ranges from 94 (for measuring citizen satisfaction) to 113 (verifying service delivery). The number of observations in these models ranges from 867 to 886. The number of censored observations (\(y^c=0\)) is 773. These are municipal services that were not contracted out, and thus there are no observations on the dependent variable monitoring by proxy (\(y^{pm}\)). Since no selection bias is detected by the Heckman estimation techniques, and we cannot reject the null hypothesis that the outcome and selection equation are independent – nine logistic regression models for the monitoring functions are estimated independently and their results are reported in the following chapter.

As noted earlier in the chapter the present models’ selection equation does not include the transaction costs variables that are included in the outcome equation. Brown and Potoski (2003) do not provide a justification for not including these variables in their selection equation. But they are also clearly important for the “make or buy” decision – the first step in the estimation. After estimating the two-stage Heckman selection models two observations can be drawn from this study. First, the null hypothesis that the two equations are independent cannot be rejected.
when the transaction costs variables are also included in the selection equation (Equation 1).

However, when asset specificity, measurement difficulty, and high transaction costs are included in both equations they are no longer significant in the outcome equation, and are significant only in the selection equation. This means that they clearly impact the decision to outsource public service delivery. Since estimating the Heckman selection models shows that the two equations can be estimated independently the results from logistic regressions are reported in the next chapter.

Brown and Potoski (2003) only focus on direct government oversight when it comes to performing monitoring tasks. Yet, they acknowledge in their later work that monitoring by proxy is likely, at least for low transaction costs’ services (Brown & Potoski, 2006). However other scholars show that monitoring by proxy may be more prevalent (Amirkhanyan, 2009; Yang & VanLandingham, 2011). Arguably what Brown and Potoski perceive to be a decline in direct government oversight may be offset by the use of proxy monitoring for high transaction costs services. The analyses outlined in this chapter test these propositions and the results are discussed in the following chapter.
CHAPTER 5
RESULTS AND FINDINGS

This chapter examines the results of the quantitative analyses conducted in the dissertation. In the first section, I present the descriptive statistics for the data used in the nine dichotomous models. In the second section, I outline and interpret the results of the models tested in the study. The models test the effects of service characteristics’ transaction costs on the likelihood that monitoring tasks are performed by vendors or third-party monitors rather than directly by the contracting municipality. Reported are the results from the Heckman selection models and logistic regressions. In this section I also briefly discuss the use of ordered probit Heckman selection models estimation for illustrative purposes only. In the last section, I summarize and discuss the findings for each of the three hypotheses.

Descriptive Statistics

The descriptive statistics for all analyses are in Table 5.1, Table 5.2, Table 5.3, and Table 5.4 at the end of the chapter. The 293 municipalities that responded to the survey instrument were asked about the production of 10 services. Table 5.1 provides a breakdown of the services and how each service is produced. A number of the municipalities do not provide certain services; therefore, the total number of observations is significantly reduced. Overall 926 municipal services were provided. Seven hundred and ninety-two of these were provided in-house directly by local governments, and only 134 were outsourced.

Certain services were clearly less likely to be outsourced. For example, 90 municipalities provided cemetery services whereas only one opted to outsource this service. Similarly, 243 provide park services while only fifteen contract out park services. Likewise, recreation centers are also more likely to be provided in-house: 150 directly provided by local governments, and only twelve were outsourced. These services are coded as low transaction costs services in the data set: they have low asset specificity and their outcomes are easy to measure.
Other services appear to be provided directly, as well as through contracting out. Thirty-five municipalities directly provide marina services, while 13 contract this service out. Similarly, libraries were provided directly by 66 municipalities, whereas thirty-three outsourced library services. For public transportation the difference is even smaller. Seventeen municipalities provide public transportation directly, and ten outsource it. The provision of public transportation and library services are coded as having high asset specificity, but are easier to measure. Marina services on the other hand are both asset specific and have difficult to measure outcomes, and is coded as having high transaction costs in the dataset.

On the other hand, some services are more likely to be provided through contracting out. Thirty of the responding municipalities provide a health clinic for public employees, and only two of those do so directly. The other twenty-eight outsource this service. Also ten of the responding municipalities provide charter schools, and only three do so internally while seven use vendors. These services are both asset specific and have difficult to measure outcomes: high transaction costs services in this sample.

Transaction costs associated with service production here are measured using services’ asset specificity and measurability difficulty characteristics. Brown and Potoski (2005) develop a typology, also used by Andrew and Hawking (2012), where the mean scores of service characteristics is used to develop high and low categories. Thus if a service’s asset specificity and measurement difficulty are below the mean across all services, the service is considered to have low transaction costs (low asset specificity and easy to measure).

In cases where only one of the service characteristics is above the mean the authors classify the service as one with mixed transaction costs. Thus where a service’s asset specificity score is above the mean, and the service is easy to measure (measurement difficulty is low or below the mean) we have mixed transaction costs. Similarly, where the asset specificity is low, but the service presents high measurement difficulty we also have mixed transaction costs. And for services where both service characteristics are high the authors have a quadrant denoting “high transaction costs” (Brown & Potoski, 2005; Andrew & Hawkins, 2012).

In this study the focus will be on the outsourced 134 services and their production characteristics. Table 5.2 provides the summary statistics for all variables used in the models. In Table 5.2, under the independent variables section are the summary statistics for services characteristics as operationalized in this study. The characteristics are dichotomized following
Brown and Potoski’s (2005) typology. The reference group consists of services where both service characteristics are low. Asset specific services (coded 1 if asset specificity is high, but measurement difficulty is low) have a mean of .679. Services considered difficult to measure (coded 1 if measurement difficulty is high, but asset specificity is low) have a mean of .417. And finally services with high transaction costs (coded 1 if both asset specificity and measurement difficulty are high for the service) have a mean of .358.

The monitoring tasks that municipalities use to oversee service delivery, as well as who performs these tasks are summarized in Table 5.3. This study focuses on the tasks that are performed, but in reality tasks may not be performed at all. When monitoring tasks are performed both governments, as well as other parties in the contracting relationship may be responsible. Table 3 breaks down the tasks, as well as who performs the tasks. The choices consist of (1) government performing the task, and (2) third-party monitors or vendors perform the task.

Table 5.4 provides the summary statistics for the dependent variables: monitoring tasks. All 9 of the variables are dichotomous denoting (0) government performs the task, and (1) vendor or third-party monitor performs the task. The number of observations ranges from 96 to 115, and the means for the variables range from .286 to .558.

The number of municipalities performing the tasks in some way ranges from 96 (measuring citizen satisfaction) to 115 (verifying that services were delivered as specified by the contract). Arguably in certain local governments there may be well established systems for “fire alarm” monitoring which would reduce the need for municipalities to measure citizen satisfaction. In these cases, the assumption is that the citizens have a channel where they can voice displeasure with service delivery and notify governments of vendor shirking.

In terms of population size the municipalities provide a wide variation (Table 5.2 – control variables). The smallest responding municipality indicated a population of 5, whereas the largest has almost a quarter of a million residents (249,704). The mean was just over twenty-two thousand inhabitants. The total number of municipalities in the county similarly varies. In some cases, there is only one municipality in the county, whereas the maximum number is 38 with an average of almost sixteen.

To gauge the capacity of these municipalities this study uses total number of municipal employees, number of employees designated as general administration, and tax revenue per
capita in the municipality (Table 5.2 – control variables). Similarly, to service production, the size of government (municipal total employment) varies significantly. Some municipalities responded that they had no public employees, whereas the largest had almost thirty-four hundred (3,397). The average number of total employees per municipality in the sample is less than two-hundred and twenty. Also the number of employees designated as general administrative staff ranges from none to 116 with mean of less than fifteen employees designated as administrative staff. The average tax revenue per capita for the municipalities is $832.84 and it ranges from just under six dollars to over five thousand.

To operationalize municipalities’ contracting out experience I use a proxy quantifying what percentage of the services in the municipality are contracted out (Table 5.2 – control variables). On average municipalities contract out 37.43% of the services they produce. The range is from 12.5% of the services being contracted out to all of them (100%). In addition, in Table 5.2 (control variables) I include how many cities are in the municipalities’ county. The average is about 12 cities. In some cases, the municipality is the only one in the county, and in other extreme there are 37 other cities.

The last control variable used in models, measures whether the vendor for an outsourced service is another government (another city, or county). The mean for that binary variable is .462. In this study private sector providers are not categorized into nonprofit and for-profit providers.

**Overall Model Diagnostics**

The diagnostics for all of the models evaluating the likelihood a function is performed by proxy monitoring are similar. All models use the same data, and the significant models are fairly robust. Five of the nine estimated logistic regression models yield significant results. That is, for these five models the likelihood-ratio, chi-square, and p-values show that the models as a whole fit significantly better than a model with no predictors.

**Results for Transaction Costs on Upfront Monitoring Tasks**

One of the two logistic regression models estimated in this section finds support for two of the three hypotheses. Table 5.5 provides the result of the analysis for the model that yields significant results. The number of observations is 98, and the pseudo R-sq. is 14.6%. The odds
radio and robust standard errors in parentheses (clustered at the municipal level) are reported in Table 5.5.

Upfront monitoring tasks consists of (1) setting work plans and (2) setting performance targets. When the dependent variable measures who is responsible for setting of performance targets (0 – government; 1 – proxy monitoring is used) the transaction costs variables are associated with the likelihood that somebody else other than government is performing this function. Asset specificity is not significant in either of the models, but measurement difficulty, and high transaction costs are both significant in the hypothesized direction.

When we assess the impact of the variables on the likelihood that setting of performance targets is performed by proxy monitoring rather than governments the model is significant. The success rate of correctly classifying cases in this model is 67.35%. Here I find support for two of the three hypotheses in the study. Asset specificity does not appear to be a factor in deciding whether vendors or third-party monitors will set performance targets instead of governments.

Measurement difficulty on the other hand is a very significant predictor in the model, and its impact is in the hypothesized direction. If a municipality outsources a service that has high degree of measurement difficulty it is less likely that the setting of performance targets will be done by vendors or third-party monitors when compared to governments directly setting performance targets.

The high transaction cost variable (services where both services characteristics are considered high) is also significant (statistically significant at less than .001) in the hypothesized direction. And the predicted probability for this variable suggests a meaningful impact. The predicted probability of vendors and third-party monitors setting performance targets in their contracts with governments is 41.3% for services that have high transaction costs.

When assessing the impact of the independent variables on the likelihood of setting work plans is to be performed by proxy (through vendors or third-party monitors) when compared to governments the model was not significant. We cannot firmly say that the coefficients in the model are significantly different than zero, and the overall success rate of correctly classifying cases is only 60.75%.

If the models are analyzed with ordered probit Heckman selection estimation the results are similar. Here again only one of the models yields significant results. The ordered estimates of comparing mixed and high transaction costs services to low transaction costs services on the
expected proxy monitoring level show support for two of the three hypothesized associations when the outcome of interest is setting performance targets. The ordered probit for measurement difficulty to be associated with higher level of proxy monitoring is lower than for services with low measurement difficulty and low asset specificity when the other variables in the model are held constant. In other words, services’ high measurement difficulty is associated with lower level of proxy monitoring. For services that are both asset specific and difficult to measure the association with higher levels of proxy monitoring is higher than services with low transaction costs.

**Results for Transaction Costs on Process Monitoring Tasks**

Three of the empirical models estimated in this section provide significant and consistent results. The results from the maximum likelihood estimation are in Table 5.6. In the table the odds ratios are reported, along with the robust standard errors (in parentheses). The pseudo R-sq. for the models ranges from 15.1 to 16.9%.

When it comes to assessing compliance with work plans, assessing compliance with rules and regulations, and verifying that services were delivered as specified by the contract the models are significant. In all three, outsourced services considered to be difficult to measure are associated with governments relying less on vendors and third-party monitors for these functions. But vendors and third-party monitors are more likely to perform these tasks when the outsourced services have high transaction costs. In addition, having more employees classified as general administration staff also is associated with greater reliance on vendors and third-party monitors for verifying services were delivered as specified by the contract.

When it comes to assessing the compliance with work plans the model is significant. The success rate of correctly classifying cases in this model is 69.23%. The two hypotheses are similarly supported, and asset specificity is again not a significant predictor in the model. The model’s pseudo R-sq. is 16.2%. Vendors and third-party monitors are less likely to be used compared to governments when assessing compliance with work plans in services where measurement difficulty is considered high. At the same time vendors and third-party monitors are more likely to assess compliance with work plans for services considered to have high transaction costs. When the high transaction costs variable is positive (measure 1; zero
otherwise) the predicted probability of vendors and third-party monitors assessing compliance with work plans is 49%.

When the monitoring task of interest is assessing compliance with rules and regulations the model is also significant, and the success rate of correctly classifying cases is 67.89%. The pseudo R-sq. is 16.9%. The variables operationalizing measurement difficulty and high transaction costs are again statistically significant (at the .001 and .05 levels respectively) and in the hypothesized direction. The odds of having an alternative to direct government assessment of compliance with rules and regulations are about 2.6 times higher for high transaction costs services. Similarly, the predicted probability of vendors and third-party monitors assessing compliance with rules and regulations is 48.3%. Asset specificity is not significant in this model.

Verifying that services are provided as specified by the contract is an important monitoring task. It is also a task that governments may delegate to other parties in the contracting relationship. When this is the outcome variable of interest the model is significant and the pseudo R-sq. is 15.1%. The success rate of correctly classifying cases is 74.34%.

Similarly, to the other models asset specificity has no impact on the likelihood governments use vendors and third-party monitors to perform this task. At the same time the results are consistent for the other two hypothesized associations. Measurement difficulty is statistically significant (at the .001 level) and negatively associated with the probability vendors and third-party monitors are used to verify services are delivered as specified in the contract.

Services with high transaction costs on the other hand are again positively and statistically significant at the .001 level as well. The predicted probability that vendors or third-party monitors verify that services are provided as specified with the contract is 24.7% for high transaction costs services.

In addition, the number of municipal employees designated as general administration is also a significant predictor in this variable (at the .05 level). The predicted probability of vendors or third-party monitors verifying that services are delivered as specified in the contract is relatively low for fewer administrators employed by a municipality (less than 20%), and it increases at the peak of administrators employed (over 60%).

The empirical models for the other two monitoring tasks (monitoring complaints, and performing financial audits) were not significant. When the data were analyzed with ordered probit estimation only one of the models yields significant results. When the outcome variable is
the assessment of compliance with rules and regulations measurement difficulty is again associated with lower level of proxy monitoring, while high transaction costs are associated with higher level of proxy monitoring consistent with previous results and the two stated hypotheses.

**Results for Transaction Costs on Ex Post Monitoring Tasks**

One of the two empirical models in this section provides significant, and also consistent results. The results are outlined in Table 5.7. Similar, to all other dichotomous models estimated, contracted services’ measurement difficulty is associated with lower probability of using vendors and third-party monitors to measure the results of services. However, for services with high transaction costs the likelihood of using vendors and third-party monitors is significantly higher compared to having governments perform these functions. In addition, contracting out experience is also a significant factor associated with vendors and third-party monitors measuring results of outsourced service delivery. In particular, the odds of vendors and third-party monitors measuring results are 4 times greater when municipalities’ contracting out experience increases by one unit.

Marvel and Marvel (2007) identify the measurement of results as an ex post monitoring function that can be performed during the service delivery process. When this function is the outcome variable of interest the results are similar to the preceding estimations for upfront and process monitoring tasks. The model is significant and the pseudo R-sq. is 19.6%. The success rate of correctly classified cases is sixty-seven percent.

When high transaction costs services are outsourced the probability of having vendors and third-party monitors measuring results is 46%. The odds of having vendors or third-party monitors measure results of services are 16 times higher than governments when services with high transaction costs are outsourced.

Asset specificity is again not significant, while the other two independent variables are significant and in the hypothesized direction (both at the .001 level). In addition, contracting out experience is also significant in this model at the .01 level.

Contracting out experience appear to lead to greater likelihood of vendors and third-party monitors measuring results of services that are contracted out. In particular, when contracting out experience is at 75% or above the predicted probability increases accordingly. This means that when governments contract out more of their services (build greater contracting out
experience) they are more likely to rely on vendors and third-party monitors to measure results for outsourced services. The predicted probability of vendors and third-party monitors measuring results of outsourced services is 75% when three-quarters of municipalities’ services are outsourced. When 83% of a municipality’s services are outsourced the predicted probability that vendors and third-party monitors will measure results of service delivery is 87%. When governments outsource all of their services, this predicted probability goes up to 90%.

When the outcome variable of interest is measuring citizen satisfaction with the services the model does not yield significant results. When the data were analyzed with an ordered probit estimation none of the two models yield significant results.

Findings for Asset Specificity

Across the five empirical models discussed here, asset specificity does not appear to be a significant predictor. Other scholars have found that asset specificity’s impact is not as strong as measurement difficulty’s. Brown and Potoski (2003) in particular note that asset specificity is not as important in predicting the likelihood local governments use certain monitoring tasks. This variable was marginally significant in only one of their four empirical models. Thus the findings here appear to be consistent with theirs.

Findings for Measurement Difficulty

Brown and Potoski (2003) find measurement difficulty to be important for governments’ decisions regarding the use of monitoring tasks. In their study the measurement difficulty variable is highly significant, and so is its squared term. The authors hypothesize that measurement difficulty’s association with the probability that governments use monitoring tasks may be nonlinear. That is, they expect that from low to moderate levels of measurement difficulty governments are more likely to rely on monitoring tasks, whereas from moderate to high levels of measurement difficulty they are less likely to use such tasks. Their justification is that at certain point it becomes too costly to try to acquire information through the monitoring tasks, and the information may not be easily assessed. Thus they expect this would deter governments from using monitoring tasks for very difficult to measure services.
In all of the models estimated in this study the variable operationalizing measurement difficulty is negatively associated with the likelihood governments would rely on vendors and third-parties to perform monitoring tasks. This result appears to provide support for the findings in the Brown and Potoski (2003) study. In their analyses low to moderate levels of measurement difficulty are associated with greater probability of governments using monitoring tasks. In my study the variable capturing measurement difficulty is associated with lower probability of governments relying on vendors and third-parties as compared to performing the monitoring tasks directly (in-house).

In their later work Brown and Potoski (2005) provide a reasoning for creating categories for transaction costs characteristics. They use the mean of services’ asset specificity and measurement difficulty to place them into high and low categories. The resulting two-by-two matrix depicts services with low transaction costs, mixed transaction costs, and high transaction costs. High transaction costs in this typology are services where both asset specificity and measurement difficulty are high. Mixed transaction costs are cases where only one the characteristics is high, the other one is low.

Poppo and Zenger (2002) similarly create a variable they refer to as “extreme exchange hazard”, which is the interaction term of transaction costs’ characteristics\(^\text{15}\). The high transaction costs variable used in this study intends to borrow the idea of extreme exchange hazards depicted by Poppo and Zenger by suggesting that transaction costs dimensions may interact. Similarly, the measure of high transaction costs used in this study intends to capture what Brown and Potoski depict as “high transaction costs” – cases where services exhibit both high asset specificity and measurement difficulty characteristics. The findings from this variable are discussed in the following section.

**Findings for High Transaction Costs**

In all of the estimated models the high transaction costs variable is highly significant. The variable is positively associated with a greater probability that vendors and third-party monitors perform five out of the nine oversight tasks examined in the study. The third hypothesis

\(^{15}\) They interact (1) asset specificity, (2) measurement difficulty, and (3) uncertainty. The terms resulting from the interactions are what the authors refer to as situations of “extreme exchange hazards”.

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of the dissertation expects a positive association as it believes the Brown and Potoski studies have not adequately captured governments’ reliance on vendors and third-party monitors for oversight.

For services that are very difficult to measure (measurement difficulty’s squared term in their study) Brown and Potoski find that governments are less likely to use monitoring tasks directly. But does this mean that they are not likely to trust a vendor with these tasks, or rely on third-party monitors? The results of this dissertation support the notion that when services are asset specific and difficult to measure governments may also engage in proxy monitoring by outsourcing some of monitoring tasks to their vendors and third-parties.

Brown and Potoski (2006) also show this to be the case, however in that particular study they only rely on one service. Their key independent variable captures whether the service is contracted out. They compared the level of monitoring between a contracted out service (where governments and vendors are both performing monitoring tasks) and the same service that was produced in-house. Their results present two important findings: (1) governments can contract out monitoring tasks – to vendors and other parties; (2) joint monitoring (performed by governments and vendors) for outsourced services is as high (or higher) than monitoring for services produced directly by governments. This study further shows that for services associated with high transaction costs proxy monitoring by vendors and third-parties appears to be more likely.

**Findings for Control Variables**

Two of the control variables used in this study were also significant in a couple of the models. The number of staff classified as general administration is positively associated with the likelihood vendors and third-party monitors are relied on to verify services were delivered as specified by the contract. In addition, contracting out experience is positively associated with the likelihood that governments rely on vendors and third-party monitors to measure the results of services.
Table 5.1: Services summary, list of services and production choices.

<table>
<thead>
<tr>
<th>Service</th>
<th>Service production choice</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In-house 1981</td>
<td>Outsourced 1981</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beach access</td>
<td>56</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cemetery</td>
<td>90</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community redevelopment agency</td>
<td>130</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recreation center</td>
<td>150</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charter school</td>
<td>3</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public transportation</td>
<td>17</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health clinic</td>
<td>2</td>
<td>28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library</td>
<td>66</td>
<td>33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Park</td>
<td>243</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marina</td>
<td>35</td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>792</td>
<td>134</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5.2: Descriptive statistics of independent and control variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs.</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min.</th>
<th>Max.</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Independent variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asset specificity</td>
<td>134</td>
<td>.679</td>
<td>.468</td>
<td>0</td>
<td>1</td>
<td>Florida League of Cities</td>
</tr>
<tr>
<td>Measurement difficulty</td>
<td>134</td>
<td>.417</td>
<td>.495</td>
<td>0</td>
<td>1</td>
<td>Florida League of Cities</td>
</tr>
<tr>
<td>High transaction costs</td>
<td>134</td>
<td>.358</td>
<td>.481</td>
<td>0</td>
<td>1</td>
<td>Florida League of Cities</td>
</tr>
<tr>
<td><strong>Control variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government vendor</td>
<td>134</td>
<td>.462</td>
<td>.500</td>
<td>0</td>
<td>1</td>
<td>Florida League of Cities</td>
</tr>
<tr>
<td>Taxes per capita</td>
<td>2830</td>
<td>832.84</td>
<td>3792.67</td>
<td>5.63</td>
<td>51442.07</td>
<td>Florida League of Cities</td>
</tr>
<tr>
<td>Number of cities in the county</td>
<td>2930</td>
<td>15.92</td>
<td>12.61</td>
<td>1</td>
<td>38</td>
<td>Florida League of Cities</td>
</tr>
<tr>
<td>Population</td>
<td>2930</td>
<td>22313.5</td>
<td>37073.94</td>
<td>5</td>
<td>249704</td>
<td>Florida League of Cities</td>
</tr>
<tr>
<td>Total municipal employees</td>
<td>2930</td>
<td>221.52</td>
<td>408.73</td>
<td>0</td>
<td>3397</td>
<td>Census of governments</td>
</tr>
<tr>
<td>Administrative employees</td>
<td>2930</td>
<td>14.15</td>
<td>19.17</td>
<td>0</td>
<td>116</td>
<td>Census of governments</td>
</tr>
<tr>
<td>Contracting out experience</td>
<td>885</td>
<td>.374</td>
<td>.195</td>
<td>.125</td>
<td>1</td>
<td>Florida League of Cities</td>
</tr>
</tbody>
</table>
Table 5.3: Summary of monitoring tasks, and who performs them.

<table>
<thead>
<tr>
<th>Monitoring tasks</th>
<th>Monitoring task performed by</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Government monitor</td>
</tr>
<tr>
<td><strong>Upfront monitoring</strong></td>
<td></td>
</tr>
<tr>
<td>Setting work plans</td>
<td>47</td>
</tr>
<tr>
<td>Setting performance targets</td>
<td>53</td>
</tr>
<tr>
<td><strong>Process monitoring</strong></td>
<td></td>
</tr>
<tr>
<td>Assessing compliance with work plans</td>
<td>52</td>
</tr>
<tr>
<td>Assessing compliance with rules and regulations</td>
<td>50</td>
</tr>
<tr>
<td>Financial audits</td>
<td>50</td>
</tr>
<tr>
<td>Monitoring complaints</td>
<td>63</td>
</tr>
<tr>
<td>Verifying service delivery</td>
<td>82</td>
</tr>
<tr>
<td><strong>Ex post monitoring</strong></td>
<td></td>
</tr>
<tr>
<td>Measuring results</td>
<td>53</td>
</tr>
<tr>
<td>Measuring citizen satisfaction</td>
<td>58</td>
</tr>
</tbody>
</table>

Table 5.4: Descriptive statistics for dependent variables.

<table>
<thead>
<tr>
<th>Dependent variable: monitoring tasks</th>
<th>Obs.</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Upfront monitoring</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Setting work plans</td>
<td>109</td>
<td>.568</td>
<td>.497</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Setting performance targets</td>
<td>100</td>
<td>.47</td>
<td>.501</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Process monitoring</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assessing compliance with work plans</td>
<td>106</td>
<td>.509</td>
<td>.502</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Assessing compliance with rules and regulations</td>
<td>111</td>
<td>.519</td>
<td>.499</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Financial audits</td>
<td>108</td>
<td>.537</td>
<td>.50</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Monitoring complaints</td>
<td>113</td>
<td>.442</td>
<td>.498</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Verifying service delivery</td>
<td>115</td>
<td>.286</td>
<td>.454</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Ex post monitoring</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measuring results</td>
<td>102</td>
<td>.480</td>
<td>.502</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Measuring citizen satisfaction</td>
<td>96</td>
<td>.395</td>
<td>.491</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>
Table 5.5: Upfront monitoring tasks, dependent variable is setting performance targets, (0) government performs the task; (1) vendor or third-party monitor performs the task.

<table>
<thead>
<tr>
<th>Upfront monitoring tasks</th>
<th>Setting performance targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset</td>
<td>-0.923</td>
</tr>
<tr>
<td>Specificity</td>
<td>(0.671)</td>
</tr>
<tr>
<td>Measurability</td>
<td>-16.76***</td>
</tr>
<tr>
<td>Difficulty</td>
<td>(0.839)</td>
</tr>
<tr>
<td>High transaction</td>
<td>17.26***</td>
</tr>
<tr>
<td>Costs</td>
<td>(1.042)</td>
</tr>
<tr>
<td>Government</td>
<td>1.347</td>
</tr>
<tr>
<td>Vendor</td>
<td>(0.851)</td>
</tr>
<tr>
<td>Taxes</td>
<td>0.000562</td>
</tr>
<tr>
<td>Per capita</td>
<td>(0.00116)</td>
</tr>
<tr>
<td>Number of cities</td>
<td>0.00324</td>
</tr>
<tr>
<td>In the county</td>
<td>(0.0283)</td>
</tr>
<tr>
<td>Population</td>
<td>0.00000806</td>
</tr>
<tr>
<td></td>
<td>(0.0000141)</td>
</tr>
<tr>
<td>Total municipal employees</td>
<td>-0.000491</td>
</tr>
<tr>
<td></td>
<td>(0.00102)</td>
</tr>
<tr>
<td>Administrative employees</td>
<td>0.00272</td>
</tr>
<tr>
<td></td>
<td>(0.0156)</td>
</tr>
<tr>
<td>Contracting out experience</td>
<td>-0.231</td>
</tr>
<tr>
<td></td>
<td>(1.661)</td>
</tr>
<tr>
<td>_cons</td>
<td>-0.461</td>
</tr>
<tr>
<td></td>
<td>(1.299)</td>
</tr>
<tr>
<td>N</td>
<td>98</td>
</tr>
<tr>
<td>pseudo $R^2$</td>
<td>0.146</td>
</tr>
</tbody>
</table>
Table 5.6: Process monitoring tasks, dependent variables are: (1) assessing compliance with work plans; (2) assessing compliance with rules and regulations; (3) verifying services are delivered as specified in the contract. All dependent variables are dichotomous, (0) government performs the task; (1) vendor or third-party monitor performs the task.

<table>
<thead>
<tr>
<th>Process Monitoring Tasks</th>
<th>(1) Assessing compliance with work plans</th>
<th>(2) Assessing compliance with rules</th>
<th>(3) Verify services delivered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset specificity</td>
<td>-0.779</td>
<td>-1.074</td>
<td>0.210</td>
</tr>
<tr>
<td></td>
<td>(0.566)</td>
<td>(0.584)</td>
<td>(0.487)</td>
</tr>
<tr>
<td>Measurability difficulty</td>
<td>-16.88***</td>
<td>-3.599**</td>
<td>-14.39***</td>
</tr>
<tr>
<td></td>
<td>(0.728)</td>
<td>(1.206)</td>
<td>(0.713)</td>
</tr>
<tr>
<td>High transaction costs</td>
<td>16.56***</td>
<td>2.610*</td>
<td>14.77***</td>
</tr>
<tr>
<td></td>
<td>(0.831)</td>
<td>(1.280)</td>
<td>(0.802)</td>
</tr>
<tr>
<td>Government vendor</td>
<td>-0.435</td>
<td>-0.598</td>
<td>0.776</td>
</tr>
<tr>
<td></td>
<td>(0.749)</td>
<td>(0.753)</td>
<td>(0.696)</td>
</tr>
<tr>
<td>Taxes per capita</td>
<td>0.000984</td>
<td>0.000276</td>
<td>0.000382</td>
</tr>
<tr>
<td></td>
<td>(0.001119)</td>
<td>(0.000255)</td>
<td>(0.000354)</td>
</tr>
<tr>
<td>Number of cities in the county</td>
<td>-0.0143</td>
<td>-0.0122</td>
<td>0.0156</td>
</tr>
<tr>
<td></td>
<td>(0.0306)</td>
<td>(0.0266)</td>
<td>(0.0276)</td>
</tr>
<tr>
<td>Population</td>
<td>-0.00000678</td>
<td>0.00000774</td>
<td>-0.00000207</td>
</tr>
<tr>
<td></td>
<td>(0.0000138)</td>
<td>(0.0000119)</td>
<td>(0.0000115)</td>
</tr>
<tr>
<td>Total municipal employees</td>
<td>-0.000876</td>
<td>-0.000533</td>
<td>-0.00107</td>
</tr>
<tr>
<td></td>
<td>(0.00146)</td>
<td>(0.00109)</td>
<td>(0.00102)</td>
</tr>
<tr>
<td>Administrative employees</td>
<td>0.0405</td>
<td>0.0249</td>
<td>0.0404*</td>
</tr>
<tr>
<td></td>
<td>(0.0271)</td>
<td>(0.0172)</td>
<td>(0.0188)</td>
</tr>
<tr>
<td>Contracting out experience</td>
<td>-0.280</td>
<td>0.488</td>
<td>2.069</td>
</tr>
<tr>
<td></td>
<td>(1.396)</td>
<td>(1.490)</td>
<td>(1.473)</td>
</tr>
<tr>
<td>_cons</td>
<td>0.574</td>
<td>0.882</td>
<td>-3.542**</td>
</tr>
<tr>
<td></td>
<td>(1.085)</td>
<td>(1.119)</td>
<td>(1.238)</td>
</tr>
<tr>
<td>N</td>
<td>104</td>
<td>109</td>
<td>113</td>
</tr>
<tr>
<td>pseudo $R^2$</td>
<td>0.162</td>
<td>0.169</td>
<td>0.151</td>
</tr>
</tbody>
</table>

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Table 5.7: Ex post monitoring tasks, the task here is measuring results. Coded (0) if government performs task; (1) if vendor or third-party monitor performs the task.

<table>
<thead>
<tr>
<th>Ex post monitoring tasks</th>
<th>Measuring results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset</td>
<td>-0.410</td>
</tr>
<tr>
<td>Specificity</td>
<td>(0.662)</td>
</tr>
<tr>
<td>Measurability</td>
<td>-15.85***</td>
</tr>
<tr>
<td>Difficulty</td>
<td>(0.841)</td>
</tr>
<tr>
<td>High Transaction Costs</td>
<td>16.11***</td>
</tr>
<tr>
<td></td>
<td>(0.829)</td>
</tr>
<tr>
<td>Government</td>
<td>-0.222</td>
</tr>
<tr>
<td>Vendor</td>
<td>(0.711)</td>
</tr>
<tr>
<td>Taxes Per Capita</td>
<td>0.000582</td>
</tr>
<tr>
<td></td>
<td>(0.00107)</td>
</tr>
<tr>
<td>Number Of Cities In The County</td>
<td>-0.00260</td>
</tr>
<tr>
<td></td>
<td>(0.0306)</td>
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<tr>
<td>Population</td>
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<td></td>
<td>(0.0000124)</td>
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<tr>
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<td></td>
<td>(0.000937)</td>
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<tr>
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<td></td>
<td>(0.0159)</td>
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<tr>
<td>Contracting Out Experience</td>
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CHAPTER 6
IMPLICATIONS AND FUTURE RESEARCH

In this concluding chapter I outline the practical and theoretical implications of the findings, list the study’s limitations, and present opportunities for future inquiry. The research questions raised in the introductory chapter highlight the important role of contract monitoring for the delivery of outsourced public services. What are the monitoring tasks used by local governments, and who performs these tasks in the delivery of outsourced public services are questions with both theoretical and practical implications.

Practical Implications

Local governments increasingly rely on contracting for the delivery of public services. As a result, the management of vendors and networks of service producers becomes paramount. The responsibilities of public managers now expand to include managing of contractual relations in addition to overseeing service delivery (Romzek & Johnston, 2002). Contract monitoring, in particular, has become an important public management function. Public managers have to engage in various monitoring activities and strategies to assure vendors deliver services as specified by the contracts.

In an era of third-party governance citizens are often not fully aware who is responsible for the services they receive. Once we perceive a service to be the responsibility of a government agency, we associate its performance with that particular public entity. This is the case even when the service is contracted out. Now vendors from the private sector deliver some of the services that were previously the domain of local governments. Additionally, these vendors may also be responsible for the oversight of the service they deliver.

Public managers may be increasingly more likely to engage in proxy monitoring for outsourced service delivery. Since contracting monitoring is a costly activity trusting vendors’ self-reported data and using third-party monitors might prove a more cost-effective alternative to direct government oversight. This study has investigated why municipal managers
may be enticed to use proxy monitoring as compared to direct government oversight. This has implications for democratic accountability, but also for the training of future public managers.

The findings from the quantitative analyses in the study suggest that local governments are relying on vendors and third-party monitors for oversight tasks spanning the entire service delivery process. Five of the nine estimated models show significant results. The setting of performance targets is considered upfront monitoring (Marvel & Marvel, 2007) and previously assumed to be largely governments’ responsibility. Yet, collaborating with vendors and trusting their input is also likely (Amirkhanyan, 2009). During the service delivery it is necessary to assess the compliance with rules, regulations, and work plans. It is also necessary to verify that services are delivered as specified by the contract. Findings in this study show that these functions can also be performed through proxy monitoring where vendors and third-party monitors are the responsible parties. And lastly measuring results is also important, and here monitoring by proxy is also likely.

The results of the analyses support the hypothesis that proxy monitoring is used for services that are both asset specific and whose outcomes are difficult to measure. Public managers often indicate that asset specific services may require high start-up costs which would necessitate contracting out their provision to an entity that has resources (Rehfuss, 1989). If these services also have difficult to measure outcomes the use of direct government monitoring is likely to be impacted. Today a lot of local governments are subjected to budget cuts, and unfunded mandates so it is not surprising to see the outsourcing of a larger number of services. This would require managers to be accountable for greater number of contracts and their deliverables. Yet we know local governments may lack the staff to do so. There are two practical solutions to such problems when high transaction costs services are outsourced.

The first solution would be collaborative monitoring as depicted by Amirkhanyan (2009). This type of proxy monitoring is often illustrated as governments trusting vendors’ self-reported performance data. When asset specific services are contracted out, presumably governments and their vendors may be locked in a lengthy exchange. The first contract winner

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16 The dependent variables in these models operationalize the following monitoring tasks: setting of performance targets (upfront monitoring task); assessing compliance with work plans, assessing compliance with rules and regulations, verifying that services are delivered as specified by the contract (process monitoring tasks); and measuring results of services (ex post monitoring task).
has a substantial advantage in subsequent re-bidding rounds which could discourage competition. At the same time the contracting government may have become familiar with the vendor and their processes. Therefore, both parties to the exchange would not want to lose the investments they have made that are specific to this transaction. If the contracted out service is also difficult to measure and monitor governments can presumably rely on familiarity and the repeated exchanges to trust the vendor with monitoring tasks. It is often found that repeated interactions and familiarity with the exchange partners result in more trusting relationships.

Alternatively, the outsourcing of oversight (Yang & VanLandingham, 2011) may be an alternative proxy monitoring approach. If public managers do not trust the vendors’ self-reported performance, they may outsource some of the oversight to a third-party monitor. Practically this is considered to be a more cost-effective monitoring method as compared to direct government oversight. Hiring and training public employees is a costly activity. However, using vendors (outsourcing oversight) can be cheaper and quicker alternative.

Both of these approaches to contract monitoring have implications for democratic accountability and how future public managers are trained. Citizens may be further removed from their governments when it comes to service delivery. In addition, holding public officials accountable in these cases of proxy monitoring may be difficult. If monitoring is conducted through vendors’ self-reported performance data or through third-party monitors public officials may not be aware of potential issues. Nonetheless a displeased citizen is not likely to investigate where the fault lies and is more likely to assume government failure.

Managers may need additional training to deal with potential pitfalls and risks associated with a plethora of contract monitoring options. It appears that it is no longer sufficient to simply have regular competitive bidding processes, and select qualified vendors. In addition, training in contract management and oversight are now much needed. Especially since government contracts may include for-profit vendors, nonprofit vendors, as well as other governments. Also as more different types of services get outsourced, oversight capacity for these contracts would be essential. As governments increasingly outsource high transaction costs services and rely on proxy monitoring, public managers should have greater knowledge and understanding of relational strategies and intersectoral collaboration in addition to direct command-and-control monitoring strategies.
Theoretical Implications

This study has significant theoretical implications for transaction costs economics scholarship on public service contracting. The findings indicate that a more nuanced approach to studying contract monitoring is needed. In the dissertation I examine contract monitoring as consisting of both direct government oversight and proxy monitoring. Proxy monitoring occurs when vendors and third-party monitors are responsible for various oversight tasks that are performed throughout the service delivery process.

Previous transaction costs studies on governments’ use of monitoring tasks have been incomplete or biased in two ways. First, Brown and Potoski (2003) investigate the impact of services’ asset specificity and measurement difficulty on governments’ direct use of monitoring tasks. They failed to account for the fact that these monitoring tasks may also be performed through proxy monitoring rather than directly by governments. In their subsequent research the authors empirically show that monitoring by proxy is likely for low transaction costs services (Brown & Potoski, 2006). This particular inquiry failed to account for the fact that mixed and high transaction costs services are also commonly outsourced by local governments. Therefore, there is no theoretical work that examines what explains governments’ reliance on proxy monitoring for these types of services.

The findings in this study show that if local governments outsource services that are both asset specific and have difficult to measure outcomes it is more likely that they will rely on proxy monitoring. It is also important to note that this proxy monitoring can occur throughout the service delivery process – from setting up expectations and writing contracts all the way to measuring results for the outsourced services.

Services production transaction costs characteristics are established as important factors for public sector contracting. However, additional theorizing is needed regarding how these dimensions are measured and conceptualized. Surprisingly few scholars have examined the joint impact of transaction costs dimensions. Including both variables in linear empirical models assesses their independent impact. But these service characteristics are often observed jointly in a number of services. Only one of the studies reviewed for this dissertation formulates theoretical expectations for services that are both highly asset specific and have difficult to measure outcomes. Contracting out services that are asset specific may result in longer contracts with the same vendor. This type of relationship may result in lower direct government monitoring for
services that are difficult to measure in one of two ways depending on the nature of the
government-vendor relationship.

Two additional factors proved significant in explaining why local governments may use
proxy monitoring. One was the number of municipal staff that were classified as general
administration. This factor was significant and positive when verifying that services were
delivered as specified by the contract is the outcome variable of interest. In the model having
more municipal employees categorized as general administration is positively associated with
greater reliance on proxy monitoring when compared to direct government oversight.

This raises an important question, why would having more administrative employees
result in greater reliance on proxy monitoring when verifying that services were delivered as
specified by the contract? This particular monitoring task is conceptualized more broadly when
compared to the remaining process monitoring tasks: they appear more to be more narrow in
scope. But intuitively it might make more sense that having more municipal staff categorized
as general administration may lead to greater reliance on direct government monitoring.

Potential explanations may be found by integrating TCE theorizing with Real Options
Theory (Schepker, Oh, Martynov, & Poppo, 2013). Options theory scholars emphasize the need
for flexibility in various exchanges. Thus having municipal employees assigned to contract
monitoring may not be desirable from this theoretical perspective. This perhaps could explain
why having more employees may be associated with greater reliance on proxy monitoring as
compared to direct government monitoring in this study. Not having these administrative
employees conduct contract monitoring for outsourced services allows for organizational
flexibility to perform other tasks.

In this study contracting out experience was also a significant explanatory factor for the
model where measuring services results was the outcome variable of interest. Contracting out
experience was measured by the percentage of services municipality outsources relative to the
total number of services it provides. This conceptualization of contracting experience appears

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17 Arguably setting work plans and performance targets for services would require some
specialized knowledge, subsequently the assessment of the compliance with these tasks would be
more specialized. The other process monitoring tasks are also more specialized or limited in
scope when compared to verifying that services are delivered as specified by the contracts:
financial audits, and monitoring complaints are the other process monitoring tasks that appear
narrow in scope.
positively associated with greater reliance on proxy monitoring when compared to direct government oversight. Further theorizing would be needed to explain why this type of experience would lead to more proxy monitoring when compared to direct government oversight.

The results from the analyses further show that if the outsourced services are only difficult to measure, but not asset specific, the reliance on proxy monitoring appears to be lower compared to direct government oversight for all tasks in the significant models. When theorizing an appropriate service classification based on transaction costs dimensions Brown & Potoski (2005) discuss why public managers may take a more direct approach when monitoring difficult to measure services that are not asset specific. Brown and Potoski perceive a vibrant market place for these types of services which would allow governments to firmly impose measurements on vendors. According to the authors, public managers would not need to engage in lengthy disputes regarding service measurability as they can easily replace the vendors. Thus monitoring for these services may be easier to perform directly. This may be the case if service measurability difficulty is associated with greater bargaining costs. These costs may not be relevant in the presence of market competition which is assumed for services that are not asset specific.

Future research may address the impact of various monitoring strategies on a range of service performance outcomes. This dissertation presents monitoring as consisting of a range of tasks that can be performed throughout the service delivery process (Marvel & Marvel, 2007). In addition, these tasks can also be performed directly by governments (Brown & Potoski, 2003), but they can also be performed by vendors and third-party monitors (Brown & Potoski, 2006; Amirkhanyan, 2009; Yang & VanLandingham, 2011). This variety of monitoring approaches may have different impacts on services outputs, as well as outcomes.

**Limitations**

There are a number of limitations in the present study can be addressed by future research. First, this study uses data from a single state and generalizability to a bigger population of local governments may be limited. Using a representative sample of national governments would be a good way to improve on the external validity of the findings from this dissertation.
This would require a formulation of a survey instrument that captures the theorized variations in contract monitoring depicted here.

A mixed methods approach to this line of inquiry would also be beneficial. By integrating qualitative research methods, we would be able to acquire useful information on additional factors that may impact contract oversight and are not captured in this study. This limitation can be addressed by conducting a series of comparative case studies in different contexts. Comparing municipalities that use different approaches to service delivery would be useful. For example, future research can focus on a contracted out service\textsuperscript{18} and find matching municipalities that have chosen different production modes. These can include (1) in-house production; (2) contracting with for-profit organization; (3) contracting with nonprofit organization; (4) contracting with another government. Then the different monitoring strategies (which tasks are used, and who performs the tasks) can be outlined and explained as they relate to the production modes that involve outsourcing. Subsequently the impact of these monitoring efforts can be used to explain various performance outputs and outcomes.

Second, proxy monitoring is operationalized as including both vendor monitoring as well as the use of third-party monitors. Arguably these two approaches to contract oversight have different set of explanatory factors, and may also produce different performance outcomes in different settings. A potential avenue to explore for future research would be to integrate the public service contracting out scholarship with the interorganizational control literatures (Ditillo, Liguri, Sicilia, & Steccoini, 2014). The literature on interorganizational control mechanisms identifies three types of controls: market-, hierarchy-, and trust-based controls (Langfield-Smith & Smith, 2003). It can be reasoned that these control mechanisms are captured by conceptualizing direct government oversight as hierarchical control; the use of third-party monitors as market-based controls; and relying on vendors’ self-reported assessments as trust-based controls. Based on a survey of Italian municipalities Ditillo and his co-authors (2014) show that when municipalities outsource services “market-, hierarchy-, and trust-based controls display different intensities, can coexist, and are explained by different variables”.

The data used in this dissertation also shows that a number of municipalities opt not to perform monitoring tasks directly or through proxy monitoring. Since the focus of this

\textsuperscript{18} Here we can also pick services that are classified by different transaction costs characteristics: low transaction costs; mixed transaction costs, and high transaction costs.
study is on the use of oversight tasks in monitoring by proxy, governments’ decision not to engage in monitoring is acknowledged but not elaborated. Nonetheless future research can delve into this phenomenon and seek to explain why governments choose not to monitor service delivery through any of the monitoring arrangements analyzed in this dissertation. It is possible that public managers use other tasks not included in this study. The nine monitoring tasks are not exhaustive but appear to cover the entire service delivery process and thus deemed as appropriate to include in the dissertation.

It is also possible that some aspects of contract monitoring practices are informal. The focus in this dissertation has been on formal use of oversight procedures by contracting partners. Therefore, an analysis of potential informal monitoring strategies is beyond the scope of the present study, but arguably important for future research on public services contract management practices. To examine what explains potential informal contract monitoring arrangements novel research questions would have to be proposed and additional data would be needed.

It is also likely that citizens are actively engaged in monitoring the performance of outsourced public services. Brown and Potoski (2006) do account for citizens being a potential proxy monitor, however the data collected for this dissertation does not allow for examining such possibility. External proxy monitoring through citizen engagement could be distinct from the proxy monitoring choices outlined in this study, and as such warrants a detailed future inquiry.

Certain factors likely to impact contracting practices are beyond the scope of the present study, but pose fruitful venues for future research. Contracting choices are often politically motivated. However, acquiring adequate political factors to explain public services contracting at the local government level is not easy. Political stability, instability, and uncertainty (Deslatte, Swann, & Feiock, 2016) could have a significant impact public managers’ “make or buy” decisions and subsequent oversight choices. In this study there was an effort to examine this proposition, however the availability of data prevented any meaningful analysis.

Similarly, organizational culture and leadership styles are also likely to impact contract management practices. To adequately assess the impact of these factors additional data would have to be collected for both quantitative and qualitative analyses. One approach would be to draft a survey instrument that explicitly asks respondents about leadership approaches and organizational cultures of local governments. Then this data can be analyzed for its impact on public services contract management practices. Alternatively, semi-structured interviews can be
conducted with public managers and staff to acquire more rich and detailed information on these two important factors.

Another limitation of this study is the use of cross-sectional data. Future research can expand on this line of inquiry by examining the role of time and inertia on both monitoring and performance outcomes for outsourced public services. The use of panel data would help us comprehend how monitoring strategies change over time. This way we might acquire better understanding of why governments decide to use proxy monitoring instead of direct government oversight for their outsourced services.

Lastly, future research could also use alternative methodological approaches and analytic techniques to tackle public services contract management and monitoring. In this study I used two-stage Heckman selection modeling to assess the likelihood of potential selection bias in the study’s sample. However, it must be pointed out that there are three decision points of interest in public service contract monitoring. In the first stage a government decides whether or not to contract the production of a public service. In the second public managers can decided whether or not to monitor the outsourced services’ performance. And in the last, third, stage they can choose from a range of monitoring tasks and arrangements. At the time of this study there were no readily available statistical packages that could perform such complex computations with the limited number of observations in this dissertation’s sample.

Similarly, there were no readily available statistical packages in STATA that can be used to estimate a Heckman selection model with multinomial outcome variable. In this study binary two-stage Heckman selection estimation was used, but ordered probit analyses was also attempted. With the binary outcome variable in the second stage public managers can indicate whether tasks are monitored directly by governments or through proxy monitoring. Using an ordered probit estimation explicitly assumes the ordering of the outcome variable where (1) government monitoring; (2) third-party monitoring; and (3) vendor monitoring depict a range proxy monitoring options. A multinomial analysis would relax the ordered outcome assumption and the three choices may be analyzed as independent outcomes.

In conclusion, this research contributes theoretically, as well as practically to transaction costs scholarship on public services contracting monitoring. In particular, the findings show that public managers can use a range of oversight tasks to monitor vendor performance. In addition, public managers may also engage in a range of monitoring
arrangements with various vendors. The use of proxy monitoring appears to be more likely for services that are characterized by high transaction costs when compared to direct government monitoring. Since local governments often outsource these types of services potential monitoring strategies and arrangements could become focal for both scholars and practitioners. The use of proxy monitoring for outsourced public services may be quite widespread as this study shows, thus it is likely research in this area will become increasingly more important.
REFERENCES


BIOGRAPHICAL SKETCH

CURRICULUM VITAE
Lachezar G. Anguelov, Ph.D. Candidate
October 10, 2016
http://languelov.wordpress.com

Askew School of Public Administration and Policy
Florida State University
Tallahassee, FL 32306-2250

Education
Ph.D., in Public Administration and Policy, Florida State University Expected 2016
Dissertation: Transaction Costs Explanations for Proxy Monitoring in Municipal Services Contracting
Committee: Kaifeng Yang, Richard Feiock, Frances Berry, and Christopher Reenock

M.P.A., Florida State University 2015

M.S. International Affairs, Florida State University 2011
Major Field: Public Administration
Thesis: Investment and local economic development: An analysis of factors influencing international realized investment in Serbian municipalities
Committee: Jonathan Grant (Chair), Lance deHaven-Smith, Robert J. Egger III

Honors B.A. Political Science, York University – Glendon College 2008
Major Field: International Studies

Awards and Honors
Golden Key International Honors Society 2011
ASPA Founders’ Fellowship 2014

Peer-reviewed Publications
doi: 10.1111/ropr.12163

**Book Chapters**

**Working Manuscripts**
Anguelov, Lachezar G. Oversight choices in municipal outsourcing: the impact of service production costs on contract monitoring levels. In preparation for submission to *State and Local Government Review*

Anguelov, Lachezar G. Collaborative monitoring by contracting out oversight: how state agencies’ outsourcing of monitoring functions impacts grant recipient performance. In preparation for submission to *Public Administration*

**Works in Progress**
Anguelov, Lachezar G. Explaining control and specification of outsourced municipal service delivery processes: a transaction cost approach

Anguelov, Lachezar G. Transferability of monitoring tasks to contracting partners in local government service provision: parsing out service management and service production transaction costs

**Areas of Research**
Public management, collaborative governance, contract management capacity of public organizations, local government accountability and oversight.

**Teaching Experience**
Public Administration in American Society (PAD 3003) 2011-2015
An introductory course on the foundations of Public Administration focused on historical and contemporary questions concerning ethical public sector practices encompassed within the scholarly study, theory, and practice of the field.

Budgets and Finances in Managing Public Affairs (PAD 4223) 2013-2015
A course on the theory and practices of public budgeting and finance that emphasizes the importance of local governments’ historical role as an incubator for fiscal innovations and accessibility to citizens.

**Online Teaching Experience**
Public Administration in American Society (PAD 3003) 2015-
Asynchronous online instruction using Blackboard, Kaltura, Tegrity, and Camtesia software.
Conference Proceedings

“Oversight choices in municipal service outsourcing: the complementary role of real options theory to transaction costs explanations in government contracting” (To be presented at the Midwest Political Science Association Annual Conference, April 2016)

“Outsourcing oversight and the effect of ‘transitive hierarchy’ on local governments’ contract monitoring: the strive to improve performance and accountability of contracted out services in ‘Hollowing out’ public sectors” – coauthor (Presented at the Midwest Political Science Association Annual Conference, April 2015)


“Who is managing whom?: A preliminary study of third-party contract management” – coauthor (Presented at the Southern Political Science Association meeting, January 2015)

“Collaborative monitoring by contracting out oversight: A multilevel assessment of how state agencies’ outsourcing of monitoring functions impacts grant recipient performance” (Presented at the Midwest Political Science Association Annual Conference, April 2014)

“Outsourcing oversight: Expanding collaborative monitoring” – coauthor (Presented at the American Society for Public Administration Conference, March 2014)

“Outsourcing oversight: An investigation of why state agencies undertake a new approach to collaborative monitoring” (Presented at Southern Political Science Association meeting, January 2014)

“Outsourcing oversight: An inquiry of why states outsource contract monitoring” (Presented at the Midwest Political Science Association Annual Conference, April 2013)

“Why outsource oversight? A case study of Florida’s efforts with developing functional oversight systems in policy areas conducive to the outsourcing of contract monitoring” (Presented at the American Society for Public Administration Annual Conference, March 2013)

“Investment and local economic development: Realized imported investment in Serbian municipalities” (Presented at the Midwest Political Science Annual Conference, April 2012)

“How do school expenditure patterns vary across the school quality spectrum?” –coauthor (Presented at the American Society for Public Administration Annual Conference, March 2012)

“A study of the Yugoslav conflict, and its impact on the aspirations of Southeastern Europeans for integration in the EU” (Presented at the Florida Political Science Association meeting, April 2009)
Invited Talks, Lectures, or Panel Participation
“Collaborative monitoring: What does it mean and how do cities make it work?” (Presented at the Florida League of Cities Center for Municipal Research and Innovation annual conference – Building a Bridge from the Classroom to City Hall, August 13th, 2014).

Professional and School Service
Student representative to the North Florida Chapter of the American Society for Public Administration (ASPA) Council, 2013-present.


Professional Memberships
American Society for Public Administration
American Political Science Association
International Studies Association
Midwest Political Science Association
Public Management Research Association