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PROFESSIONAL VERSUS POLITICAL CONTEXTS: INSTITUTIONAL MITIGATION AND THE TRANSACTION COST HEURISTIC IN INFORMATION SYSTEMS OUTSOURCING[1, 2]

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Abstract

IS research has considered the outsourcing decision from the perspective of transaction cost economics (TCE) and institutional theory. In this research, we consider how the appropriation of the logic of transaction cost economics is contingent on decision makers' institutional context. The institutional contexts contrasted are professional versus political contexts. In a survey of 214 city governments in the United States, we substantiate the existence of these two institutional contexts, a distinction that has been noted to extend into the private sector as well.

Subsequent analyses of the moderating effects of institutional context on the application of the TCE heuristic to the outsourcing decision revealed the following: The institutional context moderated the impacts of "human frailty" conditions—of opportunism and bounded rationality—and of transaction frequency on outsourcing decisions. In professional contexts, opportunism reduced outsourcing and frequency increased outsourcing; in political contexts, bounded rationality fostered outsourcing and frequency dissuaded outsourcing. However, no institutional moderation was noted for the situational conditions of asset specificity and uncertainty. Instead, situational conditions were found to ***increase*** *the incidence of outsourcing across both contexts.*

Findings about the contingent effects of human frailty conditions augment our understanding of the outsourcing phenomenon by emphasizing that decision makers' attentiveness to the logic of transaction costs during outsourcing is shaped by their institutional context. Findings with regard to situational conditions suggest a need for future research to consider the role of another contextual factor—resource munificence—in mitigating the effects of situational conditions on responses to transaction costs.

Keywords: IS outsourcing, transaction costs, institutional environment

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Introduction

The rationality of organizational activities is often co-opted and constrained by institutional forces that render it ceremonial rather than instrumental (Meyer and Rowan 1977). This is no less the case with the rationality underlying information systems activities such as outsourcing. Two lines of institutional thought are visible in IS outsourcing research. The first is the belief that forces external to the organization constrain choices (DiMaggio and Powell 1983). This is represented in research considering the extent to which decision makers accede to or resist outsourcing-related environmental forces in their outsourcing decisions (Ang and Cummings 1997). The second is the view that organizational configurations emerge from institutionalized "templates for organizing" (DiMaggio and Powell 1991, p. 27; also Greenwood and Hinings 1996). Such configurations have been visible in the patterns of firms' contracting choices while sourcing the IS function (Lee et al. 2004).

Research has yet to consider how the pervasive normative, cognitive, and regulatory structures within organizations—structures that are not specific to outsourcing—configure disparate contexts for decision making about outsourcing (Greenwood and Hinings 1996; Zucker 1987). The objective of this paper is to empirically examine the premise that organizations' structures constitute disparate institutional contexts, which differentially constrain the application of decision-making rules in outsourcing the IS function. The specific decision-making rule being investigated here is transaction cost economics.

Transaction cost economics (TCE) has been a dominant perspective in the investigation of boundary decisions. As per this view, organizational decision makers seek to balance transaction and production costs in their decision to internalize or externalize a transaction. Transaction costs accrue from conditions engendering information impactedness, where one partner to the exchange is privy to information that remains hidden from the other. Under such conditions, the theory holds, decision makers will opt to internalize the transaction (Williamson 1975). The normative version of this theory, which has diffused widely among practitioners, suggests that decision makers *should* internalize transactions susceptible to transaction costs (Ghoshal and Moran 1996). However, researchers also note that the logic of transaction costs cannot be considered in isolation of the decision maker's social environment (e.g., Noorderhaven 1996; Roberts and Greenwood 1997). Therefore, the question this paper seeks to answer is: *How do different institutional contexts affect the way in which decision makers employ the logic of transaction cost economics in outsourcing decisions*?

In answering this question, this research differs from prior institutional investigations of the IS outsourcing decision in the following ways. First, it considers a less widespread variant of institutional theory: the institutionalizing effects of norms and beliefs subscribed to *within organizations* (Zucker 1987), rather than the institutionalizing effects of forces emanating from organizations' external environment (e.g., Ang and Cummings 1997; Loh and Venkatraman 1992). Second, it highlights how the *pervasive institutional context*, constituted by different configurations of institutional structures, circumscribes the rationality pertaining to IS outsourcing. In contrast, prior research has only considered how institutional forces or field practices specific to IS outsourcing influence IS outsourcing choices. Third, this research considers the *manner in which outsourcing decisions are shaped by institutional forces*, rather than considering decision making simply in terms of acquiescence or resistance to institutional forces (Oliver 1991).

The city governments that are the focus of this study offer a unique opportunity to examine institutional contexts. Their proximity to the state reinforces the salience of the institutional context in organizational decision making (e.g., Dobbin and Dowd 1997). More importantly, institutional forces have culminated in the emergence of disparate institutional forms—those that favor professional management and those dedicated to political equilibrium via recognizing and balancing the power of multiple stakeholders. While the city government context carves out these distinctions in institutional contexts in stark relief, such contextual disparities are not limited to the public sector alone, but are increasingly visible within the private sector (e.g., Dixit 1997).

In the following sections, we overview the theoretical bases for this work (i.e., institutional theory and transaction cost economics) and existing research on IS outsourcing that has drawn upon these theoretical foundations. We then briefly consider the history of city governments in the United States, culminating in the dichotomization of professional and political institutional contexts. Based on these foundations, we develop a model proposing institutional mitigation of the application of the TCE heuristic. We report on results of testing this model via a survey of city governments and consider the implications of our findings for practice and future research.

Institutionalizing the Economic Logic of IS Outsourcing

Institutions are socially constructed "rules of the game." They are combinations of formal and informal structures

(North 1990) that are both constraining *and* enabling (Giddens 1979; Jepperson 1991). Functionally, they are believed to exist so as "to reduce the uncertainties involved in human interaction…as a consequence of both the complexity of the problems to be solved and the problem-solving software possessed by the individual" (North 1990, p. 25). In other words, institutions mitigate the situational and human constraints on economic activity. When exchanges are not repeated, entail a large number of players, and are subject to information asymmetry, institutions alter the cost-benefit structure so as to encourage cooperation (North 1994).

Institutional theorists have ascribed the institutionalization of organizations to sources *internal* or *external* to the organization (Zucker 1987). Following arguments advanced by Berger and Luckmann (1966), the *internal-to-organizations* perspective considers institutions as the persistent patterning of activities via social constructions by organizational members. In contrast, the *external-to-organizations* perspective considers the influence of forces emanating from the external environment on the persistent patterning of organizational activities (e.g., DiMaggio and Powell 1983; Meyer and Rowan 1977; Scott 1987). Both lines of research consider three specific mechanisms or forces that engender consistencies within or across organizations over time: regulatory/coercive forces, normative forces, and cognitive/mimetic forces. Regulatory or coercive mechanisms induce compliance through an appeal to expediency; normative structures appeal to agents' social obligations, and cognitive or mimetic structures operate through culturally taken-for-granted meanings and ideologies (DiMaggio and Powell 1983; Scott 1995). Institutional theorists typically view these "institutional pillars" as independent and alternate sources of organizational structuring.

Paralleling the three institutional pillars, sociological theory describes the foundational structures of institutions in terms of domination, legitimation, and signification. Structures of *domination* are concerned with the operation of relations of power; structures of *legitimation* are concerned with the norms of behavior within a collective; structures of *signification* are concerned with the communication of meaning (Giddens 1979, pp. 81-82). Rather than viewing domination, legitimation, and signification as three *independent* modes of institutionalization of organizational activity, sociologists consider them to be inextricably intertwined in social practice.

> The communication of meaning in interaction does not take place separately from the operation of relations of power, or outside the context of normative sanctions. All social practices involve these three elements…no social practice expresses, or can be explicated in terms of, a single rule or type of resource (Giddens 1979, pp. 81-82).

In this view of institutions as interdependent structures of domination, legitimation, and signification, the institutionalization of organizations is *assumed* and the focus of study is on the disparate *nature* of institutions culminating from the intersection of these three elements, rather than on the extent to which they individually influence organizational agency (Zucker 1987). This idea of institutions as collections of interdependent structures resonates with studies of strategic groups and organizational configurations, where emergence of distinct groups and configurations may be attributed to concurrent enactments of strategic choices (e.g., Greenwood and Hinings 1996; Lee et al. 2004).

The focus of this paper is on *how different institutional contexts, constituted through different configurations of regulatory, normative, and cognitive structures, impact the logic applied to the outsourcing decision*. Different institutional contexts have been noted to have implications for the unfolding of economic activity and management of transactions (e.g., Greif 1993, 1994; North 1990). Thus, it is meaningful to explore the application of economic logics within alternate institutional contexts. A dominant economic logic in boundary decisions is transaction cost economics (Ghoshal and Moran 1996).

Transaction Cost Economics

A transaction is a "unit of economic activity" that is located within a "larger unit of economic activity," such as the firm (Commons 1990, p. 55). A key tenet of TCE is that the logic underlying economic decisions is that of cost-efficiency—of minimization of production and transaction costs—and that firms come into existence in order to obtain cost-efficiencies precluded by markets. Transaction costs are

> ex ante costs of drafting, negotiating, and safeguarding an agreement and, more especially, the ex post costs of maladaptation and adjustment that arise when contract execution is misaligned as a result of gaps, errors, omissions, and unanticipated disturbances (Williamson 1994, p. 103).

These transaction costs are constituted by two situational conditions (i.e., asset specificity and uncertainty) and two conditions of human frailty or beliefs about human behavior (i.e., opportunism and bounded rationality) (Williamson 1975, 1985; also Pfeffer 1982).

Asset specificity refers to the idiosyncratic nature of transactions, "the degree to which an asset can be redeployed to alternative uses and by alternative users without sacrifice of productive value" (Williamson 1996, p. 59). *Uncertainty* refers to the "computational inability to ascertain the structure of the environment" (Williamson 1975, p. 23). It is defined in terms of knowledge about "the future state of the environment and what will be required to cope with that world" (Pfeffer 1982, p. 135). TCE assumes that decision makers are prone to act with opportunism and that they display bounded rationality in their decision making (Pfeffer 1982; Williamson 1975). *Opportunism* is defined as "self-interest seeking with guile, to include calculated efforts to mislead, deceive, obfuscate, and otherwise confuse" (Williamson 1994, p. 102). *Bounded rationality* refers to "behavior that is intendedly rational but only limitedly so" (Williamson 1975, p. 21). Under conditions of bounded rationality, individuals are less able "to receive, store, retrieve, and process information without error" (Williamson 1975, p. 21).

The transaction costs constituted by these four conditions can be mitigated by the frequency with which a transaction occurs. *Frequency* refers to "buyer activity in the market" (Williamson 1985, p. 72)—the repetitiveness of a certain type of transaction. Recurrent transactions enable economies of scale in regard to transaction costs: "The cost of specialized governance structures will be easier to recover for large transactions of a recurring kind" (Williamson 1985, p. 60). In recurrent transactions, more information is revealed and the ability of human decision makers to process that information improves, thereby reducing transaction costs over time. High frequency transactions also facilitate efficiencies in production costs as learning occurs via repetitive performance. It is important to note that with recurrent transactions, *either* internal or external costs can be defrayed with increasing transaction frequency. As transactions get more asset-specific, however, the likelihood of an external vendor being able to afford lower *production* costs decreases because the vendor is unable to harness economies of scale across multiple clients (Williamson 1979). Unlike situational and human frailty conditions, then, increased frequency influences the boundary decision as much through production as through transaction costs. Rather than dictating a particular boundary decision, high transaction frequency simply defrays the transaction costs associated with it.

Given the extensiveness of the diffusion of TCE-based logic, it has come to hold the status of a normative theory, that is, a theory of how boundary decisions *should* be made rather than as a positive theory of how boundary decisions *are* made (Ghoshal and Moran 1996). Our treatment of TCE in this analysis is as a normative theory. Thus, our position is that under conditions of asset specificity, uncertainty, anticipated opportunism and bounded rationality, and low transaction frequency, decision makers *should* internalize transactions. In other words, we expect the economics of transaction costs to be the operant rule or heuristic in boundary decisions. This approach allows us to then consider the extent to which different institutions moderate the application of this highly diffused economic rule.

Transaction Costs and Institutions in Outsourcing Research

Several IS outsourcing researchers have modeled outsourcing based on TCE. They have either examined transaction costs as a determinant of outsourcing expenditure or have focused on the situational conditions giving rise to transaction costs. These studies are summarized in Table 1. Of particular interest have been the issues of asset specificity and uncertainty in discussions of IS outsourcing. In addition to the typical contracting problems that accrue from asset specificity, this condition is a further constraint in IS outsourcing as it impinges on providers' ability to leverage economies of scale across multiple clients, and therefore limits the cost efficiencies that can be transferred to the client (Aubert et al. 1996). Asset-specific functions that are subject to higher levels of uncertainty are outsourced less frequently (Aubert et al. 1996). Uncertainty (in terms of measurability[2]) was also found to explain success in sourcing decisions in a manner consistent with TCE, that is, organizations experienced fewer problems when outsourcing functions low in uncertainty (Aubert et al. 1996; Nam et al. 1996).

Nonetheless, contradictions and contingencies in the prevalence of the TCE logic are noted within and across studies, indicating that TCE logic is incomplete in explaining outsourcing decisions. For example, Ang and Cummings (1997) found asset specificity to affect outsourcing in large but not small banks. They found uncertainty to have a *positive*, not negative, effect on the decision to outsource. No significant effect of asset specificity on outsourcing was found in a diverse sample of firms in North America (Nam et al. 1996). Grover et al. (1996) found that while outsourcing functions low in asset specificity had a positive effect on outsourcing

[2]Williamson (1985, 1996) also discusses measurement problems within the measurement branch, which is less of a focus of TCE than is the governance branch. Within this branch, measurability constrains the distribution of rewards that are commensurate with performance (Williamson 1985, pp. 80-81).

Table 1. Summary of Evidence from TCE-based Outsourcing Research

Study	TCE Constructs and Operationalization	Context/Moderation Effects	Evidence Supporting TCE	Evidence Not Supporting TCE	Comments
Poppo and Zenger (2002)	**Asset specificity**: 3-item self-report measure **Measurement difficulty**: 1-item self-report **Technological change**: 2-item self-report	Cross-section of executives from the *Directory of Top Computer Executives* – includes Fortune 500 companies and companies with an annual data processing budget of $250,000 or more.	All 3 "exchange hazards" resulted in increased contractual complexity and relational governance.		
Ang and Straub (1998)	**Transaction cost**: 3-item self-report measure	Cross-section of banks.	Negatively related to outsourcing.	Transaction costs explained only a small portion of the variance in outsourcing decisions.	
Poppo and Zenger (1998)	**Asset specificity**: 3-item self-report measure **Measurement accuracy**: 1-item self-report **Technological uncertainty**: 2-item self-report	Cross-section of executives from the *Directory of Top Computer Executives* – includes Fortune 500 companies and companies with an annual data processing budget of $250,000 or more.	Asset specificity and measurement accuracy had the anticipated effects on outsourcing and success.	Uncertainty did not have the expected negative impact on either outsourcing or outsourcing success.	
Ang and Cummings (1997)	**Asset specificity**: 3-item self-report **Functional complexity**: 3-item self-report **Uncertainty**: 3-item self-report **Supplier presence (small numbers exchange)**: 3-item self-report	Varying institutional environments and bank sizes.	Asset specificity had a negative effect on outsourcing for large banks in the presence of peer influences; supplier presence had a positive effect on outsourcing in the presence of regulatory influence.	Asset specificity had no effect on outsourcing for small banks facing peer influence and all banks faced with regulatory influence; functional complexity and uncertainty had a positive effect on outsourcing in the presence of regulatory influence; supplier presence had no effect on outsourcing in the presence of peer influence.	
Grover, Cheon, and Teng (1996)	**Asset specificity**: Applications development, end-user support, and systems planning coded as asset-specific functions; others non-asset-specific	Service quality moderateed the successful outsourcing of asset-specific end-user support and systems planning and management functions.	Outsourcing of the commodified (asset-nonspecific) systems operation and telecommunications functions had the anticipated positive effect on outsourcing success.	The anticipated negative effect for the asset-specific applications development, end-user support, and systems planning functions was not observed.	End-user support and systems planning are not universally asset-specific

Table 1. Summary of Evidence from TCE-based Outsourcing Research (Continued)

Study	TCE Constructs and Operationalization	Context/Moderation Effects	Evidence Supporting TCE	Evidence Not Supporting TCE	Comments
Aubert, Rivard, and Patry (1996)	Qualitative coding and analysis **Asset specificity**: vendors do not invest heavily in order to maintain their client operations **Measurability (uncertainty)**: the possibility for the principal to observe the performance of the agent and verify observations **Frequency**: if a skill is used sporadically or for a short period of time	Ten large organizations representing multiple industries and sectors, each with over 10,000 employees and between 200 million to over 40 billion in assets.	Asset specificity explained sourcing decisions. Measurability and frequency explain successful sourcing decisions.		
Lacity and Willcocks (1995)	Qualitative coding and analysis based on respondent reports **Asset specificity**: a function is considered asset-specific if the respondent believes it to be **Frequency**: system development is considered a one-time transaction; maintenance, support, data center operations, and training are considered recurrent transactions	Anomalies were attributed to contextual factors such as consolidation of internal units yielding economies of scale, unionized labor making for internal inefficiencies, and the availability of only a single vendor resulting in opportunism.	A few firms manifested sourcing behaviors and outcomes consistent with TCE.	30 anomalies (87.5% of cases studied) were noted: some firms successfully sourced IS functions in a manner inconsistent with TCE; others were unsuccessful even though their decisions were consistent with TCE.	
Saarinen and Vepsalainen (1994)	**Asset specificity**: 2-item self-report measure **Uncertainty**: 2-item, self-report measure	200 largest firms, the 25 largest banks and insurance companies in Finland (no additional demographics available on sample).		Asset specificity and uncertainty did not satisfactorily explain sourcing decisions or their success.	

success, outsourcing functions high in asset specificity did not have the anticipated negative impact on success. Lacity and Willcocks (1995) note several deviations from the logic of asset specificity in firms' outsourcing decisions; for example, firms successfully insourced nonspecific assets or outsourced such assets using tailored rather than generic contracts. Ang and Beath (1993, p. 330) observe that firms continue to outsource asset-specific functions under conditions of uncertainty so as to avail of providers' "specialization or certain distinctive competencies."

Following the theory itself, TCE-based research on IS outsourcing has tended to assume rather than study human frailty conditions of opportunism and bounded rationality. In doing so, IS researchers have foregone the ability to completely leverage the explanatory potential of TCE. In order for TCE to be a theory, and not a self-fulfilling prophecy, opportunism needs to be operationalized, not assumed (Ghoshal and Moran 1996). Similarly, Noorderhaven (1996) criticized the assumption of bounded rationality as being epistemologically simplistic, and suggests that TCE studies investigate it empirically. Studying, rather than assuming, opportunism and bounded rationality may explain more of the variance in outsourcing choices, thereby alleviating concerns that TCE-based studies explain very little variance in the outsourcing decision (Ang and Straub 1998; Clark et al. 1995). Furthermore, understanding the contingencies posed by the institutional context may shed additional light on the outsourcing decision.

Research on IS outsourcing has considered the institutional context, as summarized in Table 2. Three trends are noted in the institutional perspectives explicitly referenced in IS outsourcing research. First, studies that have explicitly considered institutional influences have considered the impact of external pressures to outsource on internal decisions to outsource (Ang and Cummings 1997; Loh and Venkatraman 1992; Lacity and Willcocks 1998). Second, these external pressures have been considered as structures that impact the outsourcing decision independently of each other. Third, research has considered decision making as strategic interventions by organizational decision makers into their institutional environments (Ang and Cummings 1997).

In contrast to this previous research, the intent of this work is the following. First, we consider institutional structures emanating from *within the organization*. These structures are regulatory or domination structures, normative or legitimation structures, and cognitive or signification structures. Second, rather than viewing these structures as independent, we view them as *interdependent in constituting disparate institutional contexts*. This approach is similar to that adopted by Lee et al. (2004), describing organizational groups or configurations based on their structuring patterns of outsourcing choices, and work by Allen et al. (2002), considering the effect of internal decision-making environments on outsourcing choices. Third, the institutional contexts so described are *independent of the outsourcing phenomenon*. Finally, rather than viewing decision making as strategic interventions into an institutional context, this research takes the more basic position of *institutions circumscribing decision making*. We now consider the nature of the institutions underlying the city government environments that are the focus of this study and how they may be expected to circumscribe governments' application of the logic of TCE to the outsourcing decision.

The Institutional Contexts of City Governments

Earlier, we noted that regulatory, normative, and cognitive structures are inextricably intertwined in the constitution of institutional contexts. Critical theory (e.g., Habermas 1989) and Weber's (1978) contrasts of forms of authority provide insight into the manner in which the three structures converge in constituting alternate institutional contexts. These theories view coordinated action as culminating primarily from either power or from shared meaning. Structures of domination and signification, therefore, vary in their levels of salience across contexts. The norms that operate in each of these contexts are oriented primarily toward the communication of meaning or toward the exercise of power. Resulting institutional contexts so constituted are professional or political.

In *professional* contexts, cognitive structures of procedural knowledge are central to coordinated action (Satow 1975). Regulation in its conventional sense is unnecessary, as uniformity is effected through consensus on values of procedural rationality (Ritzer 1975; Satow 1975). Normative structures reference procedural rationality and focus on its diffusion (Satow 1975). In *political* contexts, regulation via political authority is key to coordinated action (Weber 1978). Unlike the ideologically homogenized professional contexts, interests and values can be diverse in political contexts (Satow 1975). Cognitive structures play a weak role in these institutional contexts since shared meaning is not essential to ordered activity and is difficult to attain in the presence of varied interests and values. Normative structures legitimate the exercise of authority by those vested with it (Weber 197). While a level of procedural rationality may still appear in such political contexts (Dean and Sharfman 1993), it is not legitimated and its incidence is minimized with the increased incidence of political behavior (Janis 1989).

Table 2. Summary of IS Outsourcing Research Relevant to Institutional Theory

Study	Context	Institutional Constructs: Operationalization	Institutionalization	Findings
Lee, Miranda, and Kim (2004)	Korean firms	**Strategic configurations of IS outsourcing decisions**: constituted by contractual choices about the degree of integration, allocation of control, and performance period	Internal—organizational	More institutionalized firms, which were closer to one of three cluster centers, were more successful.
Allen, Kern, and Mattison (2002)	Higher education institutions in the U.K.	**Culture (*legitimation*)**: Relative emphasis of educational institutions on academic versus managerial values	Internal—organizational	Emphasis on managerial values led to tighter specification of outsourcing contracts; emphasis on academic values led to looser specification and imbalances of power between vendor and client.
Lacity and Willcocks (1998)	Public- and private-sector organizations in the U.S. and U.K.	**Bandwagon effects (*mimetic*)** **Forced by government (*coercive*)**	External—environmental External—environmental	Explained 38% of decisions to outsource. Explained 8% of decisions.
Smith, Mitra, and Narasimhan (1998)	Firms headquartered in the U.S.	**Poor performers signaling rationality to shareholders (*legitimation*)**: Financial metrics such as total revenue, total sales, ROA, ROE	Internal	No support for poor overall performance as a driver of outsourcing.
Ang and Cummings (1997)	U.S. banks	**Peer influence (*mimetic*)**: Outsourcing-related activities by successful peer banks **Federal influence (*coercive*)**: Outsourcing-related recommendations by regulatory agencies	External—environmental External—environmental	Small banks tended to be more imitative than large banks. Federal regulations had no effect on IS outsourcing.
Hu, Saunders, and Gebelt (1997)	U.S. corporations	**Internal influence (*normative*)**: Outsourcing practices diffuse within a community **External influence (*mimetic*)**: Outsourcing practice diffuse through imitating sources external to the social network	External—environmental External—environmental	Outsourcing was best explained via a combination of internal and external influences.
Sobol and Apte (1995)	U.S. firms	**Initiator of outsourcing decision (*domination*)**: Whose idea was it to outsource; who was the most important in making the outsourcing decision	Internal	Initiation: 2.1% by top management, 2.1% by outside consultant, 79.2% by MIS executive; promotion: 12.5% by top management, 2.1% by outside consultant, 64.7% by MIS executive.
Loh and Venkatraman (1992)	U.S. corporations	**Internal influence (*normative*)**: Outsourcing practices diffuse within a community **External influence (*mimetic*)**: Outsourcing practice diffuse through imitating sources external to the social network	External—environmental External—environmental	Internal influence, i.e., imitation within a community, explains more variance in outsourcing than external influence.

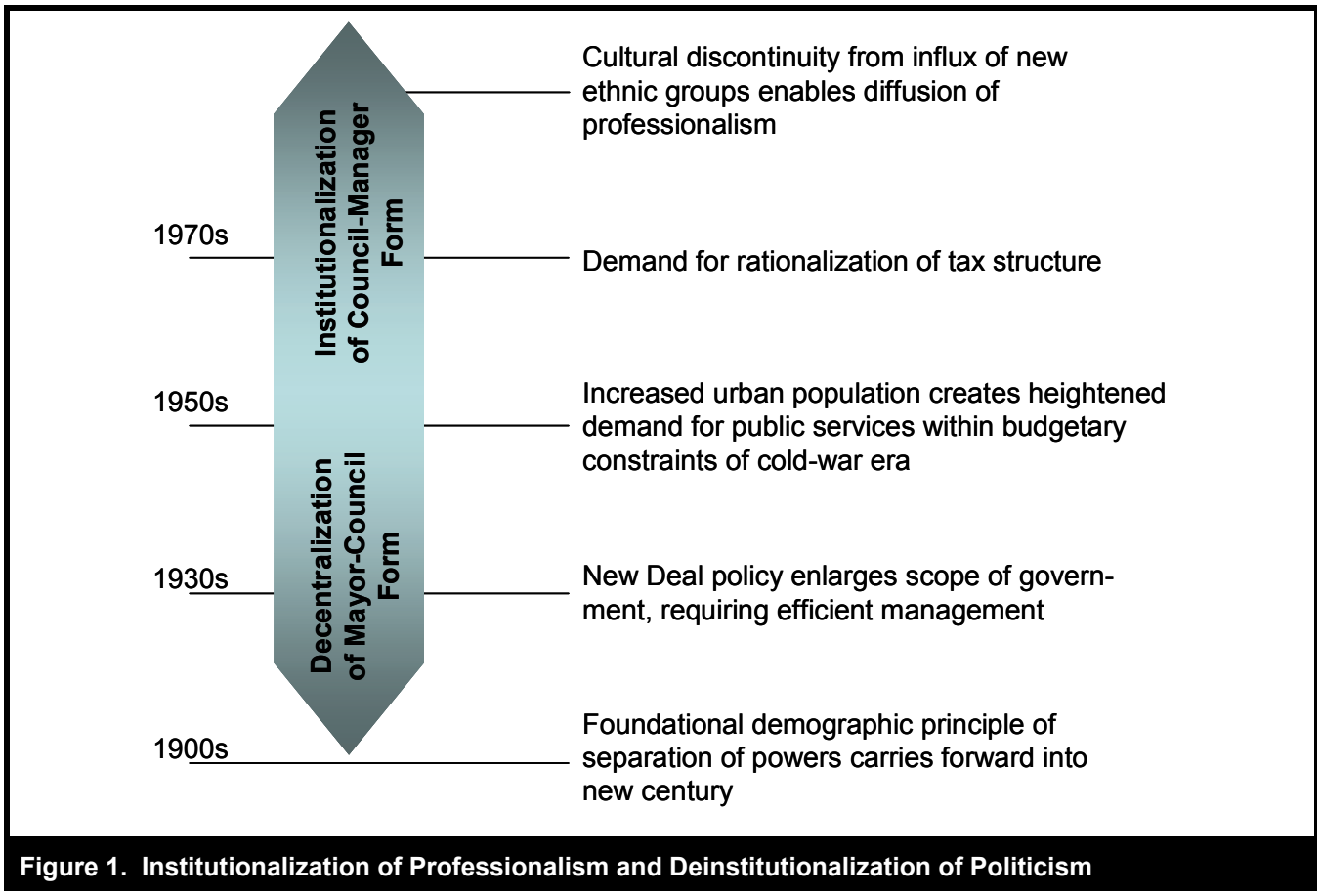

Figure 1. Institutionalization of Professionalism and Deinstitutionalization of Politicism

Dichotomization of the Institutional Contexts of City Governments

Historical events and social forces give rise to the patterning of structures into distinct institutional contexts (e.g., Greif 1994). Professional and political contexts are first visible in the normative structures underlying mayor–council and council–manager city governments respectively. Initially, *all* city governments were of the mayor–council form, which was governed by the democratic principle of separation of powers. A series of historical events provided the impetus for growing professionalism and for resistance to that impetus. These events (summarized in Figure 1), and the variations with which they impacted the different geographic areas of the country, made for variations in the level of institutionalization of the council–manager form and deinstitutionalization of the mayor–council form.

In principle, procedural rationality is visible in council–manager governments and political rationality in mayor–council governments, engendering differences in organizational forms. Mayor–council governments are associated with a greater concern for outcomes such as societal contribution and organizational history rather than for economic pragmatism (Hofstede et al. 1990). Their focus on the separation of powers exacerbates their plurality of values and multiplicity of principals (Bertelli and Lynn 2003). Division of power also creates a climate of contention (Nunn 1996), fraught with "dynamic tension, sniping and guerrilla warfare" (Svara 1990, p. 53). In regimes marked by multiple principals with potentially competing interests and visions, incentives have a weaker effect on behavior, and agents are often able to pursue their own interests, without being strictly accountable to any single principal (Bertelli and Lynn 2003; Dixit 1997; Hölmstrom and Milgrom 1991).

Much like the private sector, a central tenet of the council–manager form is economic pragmatism. Its hallmark is the professionally trained manager or chief administrative officer, who is appointed by the city council (whose members are elected by the public). The mayor, who is also elected, has no power beyond that of a council member, except for veto

power in some instances (Svara 1990). Instead, formal power is held by the entire council, and often vested in the appointed manager, whose professional training is expected to garner the economic viability desired for the city. This form of government thus enables the operation of a singular, professional logic within a bureaucratic structure. Decision makers in these governments can operate on the basis of professional principles, with little concern for political opposition and conflict, as long as they operate rationally. Reappointment of managers is contingent on their ability to manage the city government efficiently, within the constraints of the city budget. There is "no question about who has ultimate authority, and thus there are few battles to protect prerogatives" (Svara 1990, p. 54).

Structural Analysis of Professional and Political Institutions

The institutionalization of mayor–council and council–manager city government forms has been imperfect, however, with the traditional mayor–council structure being completely abandoned in some cases and only partially deinstitutionalized in others (Frederickson et al. 2004 Morgan and Watson 1992; Protasel 1988). Consequently, the norms associated with the two different governmental forms map imperfectly to cognition and regulatory practices (Frederickson et al. 2004). Furthermore, normative structures may be either supported or contradicted by regulatory or cognitive structures (Giddens 1979). Therefore, rather than viewing the normative element of professional versus democratic values as *the sole* distinguishing characteristic of city governments and assuming a correspondence between the normative structures and cognitive and regulative structures, governmental forms are considered in terms of all three structures. The interdependencies and intersections among these three structures yield the distinct *professional* and *political* institutional contexts.

Normative Structures

Normative structures or structures of legitimation refer to the guiding principles that prevail within a collective (Giddens 1979). We have noted that the two *forms of city government* differ in their underlying guiding principles. Council–manager city governments are normatively professional contexts, characterized by procedural rationality; mayor–council governments are normatively democratic contexts, concerned primarily with the balance of power (Svara 1990). By not only recognizing disparate interests across constituents, but also anticipating and legitimating such disparities, mayor–council governments engender contests among interests and become politicized (Dean and Sharfman 1993).

Even a dominant norm, though, does not presume normative consensus (Giddens 1979). Discrepancies in individual members' subscription to norms engender differences in practices among governments that are ostensibly council–manager or mayor–council governments, and consequently in the degree to which the city government is institutionalized and regulatory and cognitive structures support or contradict the normative structures (Zucker 1987).

Regulatory Structures

The emergence of institutions is attributable also to the manner in which power is enacted to regulate actors through the allocation of material resources or authorization of human resources (Giddens 1979; Scott 1995). A critical distinction in the enactment of power is the extent to which pluralistic interests prevail in the disbursement of resources (Lukes 1974). Accordingly, in the city government context, structures of domination are considered in terms of the *pluralism* and contention among stakeholders in the deployment of resources. Routinization of contention with stakeholders is, therefore, viewed as reflecting a patterning of relations of power within the organization.

The incidence of competing interests and attention to managing these interests in politicized institutions is high as there is little consensus on means or ends and stakeholders with disparate interests need to be co-opted toward necessary collective action (e.g., Selznick 1957). There is little professional autonomy in such contexts, and decision makers are motivated to manage tensions so as to accomplish their own interests (Moe 1987). In contrast, in professional contexts, since an objective standard of success is available, there is a high degree of consensus on both means and ends, and collective action emanates from this consensus (e.g., Tolbert and Zucker 1983). In other words, while professional norms make overt regulation unnecessary within professional contexts, political contexts are regulated via contention among stakeholders, each articulating and defending their respective interests.

Cognitive Structures

Cognitive structures or structures of signification are enacted through interpretive schemes (Giddens 1979). Such interpretive schemes operate "as rules that constitute the nature of

reality and the frames through which meaning is made" (Scott 1995, p. 40). Central to such sensemaking in organizations are organizational templates or *strategic reference groups* that shape organizations' awareness of relevant competencies and response patterns (Greenwood and Hinings 1996; Powell 2000). Strategic reference groups are inherently about meaning as decision makers strive to make sense of who they are vis-à-vis referent others (Labianca et al. 2001). They have been viewed as "cognitive communities" in which common "mental models [are] used by key decision makers to interpret the task environment of their organization" (Fiegenbaum and Thomas 1995, pp. 462-463). The extent to which organizations identify with strategic reference groups or perceive them to be salient varies. Thus, the *salience of strategic reference groups* in decision making under uncertainty is a critical reflection of the patterning of organizations' cognition or meaning systems (Bamberger and Fiegenbaum 1996).

The salience of strategic reference groups is inextricably associated with the type of city government. The political nature of mayor–council structures makes them more attuned to their political constituencies, who are able to supply votes or other political commodities, rather than to strategic reference groups in the conventional sense (Feiock et al. 2003). In contrast, key decision makers in the professional council–manager government are appointed and their tenure is not tied to political cycles (Feiock et al. 2003). In such highly professionalized organizational fields, decision makers are more attentive to strategic reference groups (DiMaggio and Powell 1983). Research has also noted that identification with such groups increases with the prestige and attractiveness of the reference group and decreases with levels of intra-organizational competition (Pratt 1998). In professional contexts, the evident prestige and attractiveness of other governments that subscribe to similar norms is likely to engender decision makers' attentiveness to reference groups. In contrast, in political contexts marked by competing positions among stakeholders, attentiveness to external reference groups is likely to be low.

Research Model and Hypotheses

Having delineated the institutional contexts of city governments, we now consider how these contexts moderate decision makers' appropriation of the transaction cost heuristic to outsourcing decisions. Specifically, our position is that professional institutional contexts will promote the application of the TCE heuristic but that political contexts will tend to suppress the application of such logic in outsourcing decisions. This model is summarized in Figure 2. We now examine the specific ways in which the institutional contexts of city governments circumscribe the application of TCE logic to the outsourcing decision.

Asset Specificity

Because asset specificity engenders an ex post small numbers condition, TCE predicts that higher levels of asset specificity make clients vulnerable to potential provider malfeasance, and therefore lead to the internalization of the transaction. In addition to the logic advanced by Williamson, there is a second reason why asset specificity typically raises transaction costs. Asset-specific functions are likely to represent an organization's core competence: The core or distinctive competence of a firm is based on it making distinctive use of its resources (Penrose 1995). Thus, a core competence is specific to an organization. As such, nondelivery of services related to the asset-specific functions can be detrimental to the client. Outsourcing is thus likely to be viewed as risky by decision makers employing a procedural rationality. In the IS outsourcing arena, research has supported this position: transaction asset specificity has been found to reduce the incidence of outsourcing (e.g., Poppo and Zenger 1998; Ang and Cummings 1997).

The logic underlying organizational design choices (e.g., conditions under which transactions are internalized or externalized) diffuses within institutional fields (DiMaggio and Powell 1983). The extent to which organizations are receptive to such influence emanating from their field is a function of their level of professionalism (DiMaggio and Powell 1983). Thus, cognition in professional governments is likely to be shaped by external reference groups, in particular their public sector counterparts and other professional governments, who believe in internalizing asset-specific functions. In fact, increasing professionalization of governments has been noted to result in increasing internalization of asset-specific functions (Clingermayer and Feiock 1997). This leads to the following hypothesis:

> *Hypothesis 1a: Higher levels of asset specificity will lead to a lower proportion of the IS budget being outsourced in professional contexts.*

As noted earlier, political governments are not particularly attentive to strategic reference groups in their sensemaking. The TCE logic that is taken-for-granted within the private sector (Ghoshal et al. 1999) is therefore unlikely to have diffused extensively within such governments. The political

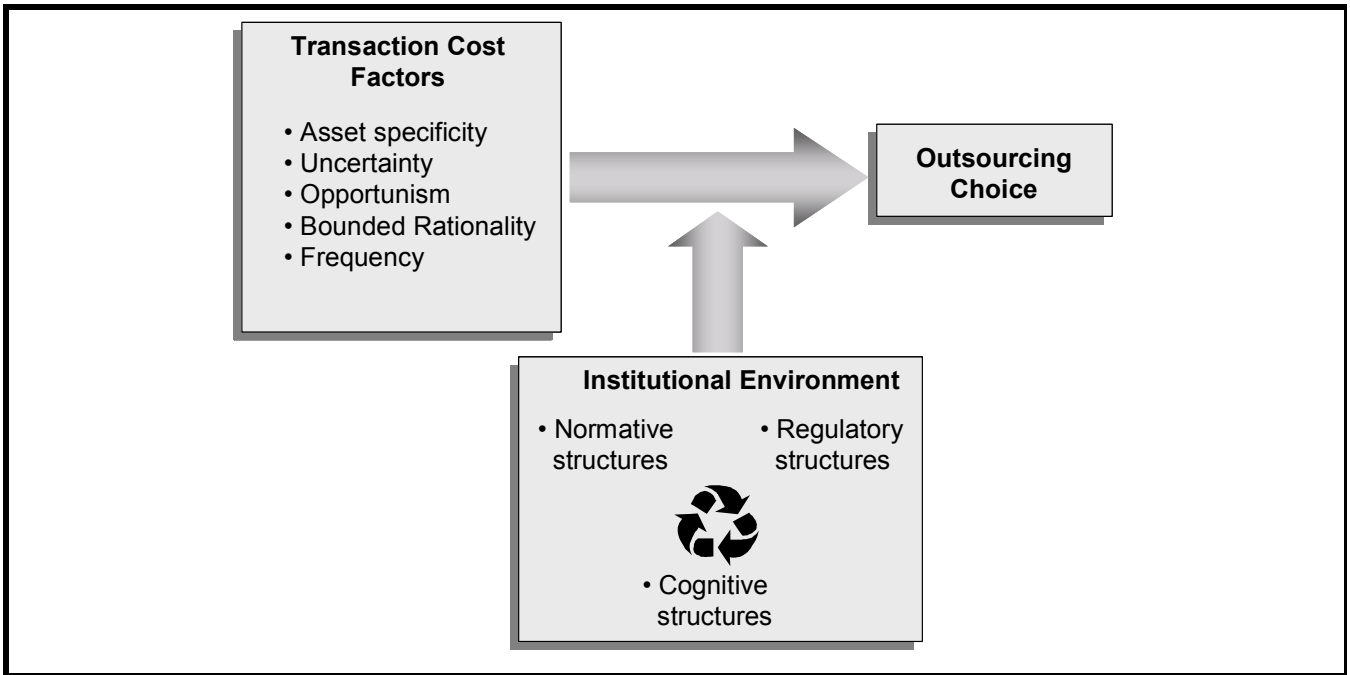

Figure 2. Research Model

context is also unlikely to subscribe to the efficiency-based value of knowledge specialization (Williamson 1999), and therefore to committing resources to internally staffing an IT function with expertise with potentially limited or short-term applicability (Barthelemy 2001). Instead, the pluralism inherent in this form of government is likely to lead to outsourcing of asset-specific functions. In contrast to lower organizational importance of commodity functions, an asset-specific function's proximity to an organization's core competence makes it salient and visible. Being responsible for under-performance with regard to these functions, even in the short-run, can be politically costly. In contrast, externalizing asset-specific functions offers political contenders the opportunity to take credit for strong performance, when the vendor is able to deliver, and plausible deniability should the vendor not perform (Clark et al. 1995). Thus, we hypothesize

Hypothesis 1b: Higher levels of asset specificity will lead to a higher proportion of the IS budget being outsourced in political contexts.

Uncertainty

As per TCE, conditions of uncertainty surrounding the transaction preclude complete contracting and dictate hierarchical control. In the context of IS outsourcing, the most salient aspect of uncertainty is technological change and the complexity of technology. Because of this, managers in both the public and private sector have a limited ability to foresee technological developments and problems. This makes it more difficult to write a contract that covers all exigencies, and internalization of transactions is therefore prescribed (Williamson 1985).

Diffusion of the TCE logic within the professional context will encourage adherence to the prescription of insourcing under conditions of uncertainty (Ghoshal et al. 1999). Additionally, given the norm of economic pragmatism governing decision making in professional contexts, the heightened governance costs associated with conditions of uncertainty (Williamson 1985) are likely to dissuade outsourcing. Therefore, we hypothesize

Hypothesis 2a: Higher levels of uncertainty experienced will lead to a lower proportion of the IS budget being outsourced in professional contexts.

Decision makers in political contexts will lack awareness of the prescription to insource under conditions of uncertainty. Since efficiency is not the central concern in these contexts, minimizing governance costs will not be a priority. Instead, the regulatory context, marked by contention among key decision makers, will prompt those responsible for the IS

function to offset the potential liabilities of uncertainty by outsourcing (Nunn 1996; Svara 1990). Outsourcing diverts accountability in case of vendor failure (Clark et al. 1995). In the face of the pluralistic interests and contentiousness underlying these governments, the ability to externalize key activities has been found to be desirable: "Politicians delegate authority to avoid the political fallout from controversial decisions" (Clingermayer and Feiock 1997, p. 235). We therefore propose

Hypothesis 2b: Higher levels of uncertainty experienced will lead to a higher proportion of the IS budget being outsourced in political contexts.

Opportunism

TCE assumes that external agents will act opportunistically, raising transaction costs in market relations. In order to minimize the transaction costs that ensue from opportunistic behavior, TCE prescribes that managers should maintain hierarchical control of transactions that may be susceptible to opportunism (i.e., such transactions should be insourced).

Management by fiat (i.e., authoritative control) is an important governance advantage of hierarchies (Williamson 1975). Given a norm of professionalism, decision makers in professional contexts can view themselves as managers and their employees as subordinates in a bureaucratic structure, and avail themselves of such fiat (Clingermayer and Feiock 1997; Satow 1975). In this form, managers are also able to provide employees with low-powered bureaucratic rewards, which have been found to be effective in curtailing opportunism (Feiock et al. 2003). Again, the TCE-based logic dictating avoidance of opportunism through insourcing is likely to have diffused to these professionally trained and managed organizations (DiMaggio and Powell 1983). Within such a context, as predicted by TCE, concerns about potential opportunism by a vendor will prompt insourcing and the subjection of employees to managerial fiat to curb potential opportunism. We therefore propose:

Hypothesis 3a: Higher levels of opportunism experienced will lead to a lower proportion of the IS budget being outsourced in professional contexts.

In contrast, in the absence of professional efficiency-based norms and reference groups that are familiar with the TCE logic, avoidance of opportunism through insourcing is unlikely to be a robust logic in politically managed contexts. Furthermore, the pluralism of strong mayor–council structures will tend to undermine managerial fiat. A multiplicity of principals precludes the successful application of managerial fiat as employees can selectively respond to principals or play them off each other (Dixit 1997). Instead of low-powered bureaucratic rewards, this institutional context is conducive only to the application of high-powered political rewards, which have not been found to be effective in curbing opportunism (Feiock et al. 2003). Concerns about vulnerability to opportunism cannot be resolved by internalizing the transaction. Instead, decision makers may perceive themselves to be *less* vulnerable to an external vendor, whose opportunism can be controlled, albeit incompletely, by terms specified within a contract. The contract also minimizes principals' exposure to each other's opportunism because they too are bound by the terms of the contract. Hence, we offer the following hypothesis:

Hypothesis 3b: Higher levels of opportunism experienced will lead to a higher proportion of the IS budget being outsourced in political contexts.

Bounded Rationality

TCE assumes that *internal* actors are boundedly rational, and that this limits their ability to completely anticipate eventualities, thereby constraining decision makers' ability to completely stipulate contract terms. In translating bounded rationality from an assumption to a focal construct in the theory, we consider bounded rationality in terms of the absence of adequate information systems capabilities. This creates conditions of bounded rationality in two ways. First, inadequate information systems capabilities constrain decision makers' information processing capabilities (Galbraith 1973). Not only do information systems provide decision makers with access to organizational information that enables them to anticipate organizations' technological needs and requirements, it also helps them manage and process the information so that it can be applied more easily to making contractual decisions (Williamson 1985). Second, inadequate information systems capabilities cause decision makers to undervalue additional technological investments during the sourcing decision (Madhok 1996). This lowers the price that they are willing to pay for fulfillment. The unavailability of foundational information systems capabilities that results in undervaluing of services also engenders suspicion of vendors who price their services higher than anticipated, thereby increasing transaction costs (Williamson 1985). Normatively, TCE prescribes that decision makers insource transactions under conditions of bounded rationality because they are unable to completely specify a viable contract (Williamson 1985). In professional contexts governed by economic success principles, unrealistic value perceptions and increased transaction

costs will thus preclude outsourcing under conditions of bounded rationality. We therefore predict

Hypothesis 4a: Higher levels of bounded rationality will lead to a lower proportion of the IS budget being outsourced in professional contexts.

The absence of complementary capabilities is unlikely to be associated with similar restraint in a political context, which is not governed by norms of efficiency. Furthermore, in regimes marked by the presence of multiple principals with potentially competing interests, agents are able to pursue their own interests, without being strictly accountable to any individual principal (Bertelli and Lynn 2003; Dixit 1997; Hölmstrom and Milgrom 1991). Since limited information systems capabilities curtail principals' information processing about each other's activities (Williamson 1985), conditions of bounded rationality are likely to engender an experience of vulnerability among decision makers in pluralistic contexts as decision makers are unable to process information about their political contenders within the organization. Information processing capabilities can provide intelligence about political contenders. Control of information systems is, therefore, likely to equate to political control. Under conditions of bounded rationality, decision makers are unlikely to relinquish control of information processing capabilities to any single principal. Outsourcing these capabilities helps ensure that no single principal has information processing advantages over another. In political contexts, we propose

Hypothesis 4b: Higher levels of bounded rationality will lead to a higher proportion of the IS budget being outsourced in political contexts.

Frequency

Earlier we noted that the frequency with which a transaction occurs—or is expected to occur –mitigates transaction costs. Transactions that have occurred frequently in the past enable the client to write a more complete contract; those likely to occur frequently in the future enable the client to write-off contracting costs, including transaction costs, over more transactions (Williamson 1985).

In professional contexts, frequency should thus mitigate transaction costs, resulting in a higher proportion of the IS budget being allocated toward outsourcing. In IS functions that have been utilized more often, key IS decision makers are more likely to have the requisite knowledge to adequately stipulate contract terms, thereby minimizing the cost of transacting. From a purely transaction cost perspective, recurrent transactions can provide contracting economies of scale.

Hypothesis 5a: Higher transactional frequency will lead to a higher proportion of the IS budget being outsourced in professional contexts.

However, this effect will not hold for political contexts. Due to their pluralistic nature, IT decision makers in these contexts will have to contend with elected officials, who are likely to view the outsourcing and concurrent job loss of a frequently used function to be a greater political liability than a less frequently used function (Kim 2003). Outsourcing of functions that are used more frequently will likely be more visible to the public, and therefore likely to be perceived as politically more hazardous, representing a threat to politicians' reelection. We hypothesize

Hypothesis 5b: Higher transactional frequency will lead to a lower proportion of the IS budget being outsourced in political contexts.

Research Methods

The respondents for this survey were IS managers in city governments within the United States. IS managers were selected because, based on initial interviews with city managers, they were noted to be the individuals principally responsible for the IS function and for implementing IS outsourcing decisions. As such, they are the most knowledgeable about circumstances surrounding the IS function, IS outsourcing vendors, and the extent of outsourcing in their organizations. Such a use of key informants is considered a viable strategy in survey research (Huber and Power 1985).

The instrument was mailed to 800 IS managers in city governments nationwide. The key decision makers responsible for the IS function were identified from Carroll's Municipal Directory (1997/1998) as potential respondents. The sample was stratified based on the population being served by the government and the type of government, with the surveys being divided equally among small, medium, and large cities and council–manager and mayor–council types of city governments. Survey participation was encouraged through phone calls, a repeat mailing, and a fax. A total of 232 responses (29 percent) were collected. Of the surveys returned, 214 were usable: 124 (57.9 percent) from council–manager type governments and 90 (42.1 percent) from mayor–council type governments.

The Institutional Context

The institutional contexts underlying city governments in the data set are identified as follows. First, the nature of the three

institutional structures—normative, regulatory, and cognitive—in each government was ascertained. Notably, institutionalization typically lends itself only to indirect assessment due to its taken-for-granted nature(Zucker 1987). To ascertain their institutional context, governments were subjected to a cluster analysis of their normative, cognitive, and regulatory structuring to ascertain their underlying institutional patterning. These procedures are now detailed.

Earlier, we noted that regulatory structures were reflected in the level of *pluralism* and contention within city governments. This was assessed using three self-report, seven-point Likert scale items, presented in Table 3. Cognitive structures were operationalized as the salience of *strategic reference groups* in decision making under uncertainty (Bamberger and Fiegenbaum 1996). The two 7-point Likert items used to assess the reliance on strategic reference groups are presented in Table 3. The first of these speaks directly to other governments as reference groups; the second considers conferences and professional meetings as venues through which city governments can obtain information about referent governments. Finally, differences in normative structures or structures of legitimation are evident in differences in the *mayor–council* or *council–manager* form of city governments. Cities were classified as mayor–council or council–manager types based on categorization provided by an ICMA publication (International City/County Association 1997).

An exploratory factor analysis of the institutional structures was conducted to confirm the discriminant validity of each structure. The initial factor analysis, using an extraction criterion of a minimum initial eigenvalue of 1, yielded two factors. However, the highest loading of government form (cognitive structuring) on this solution was less than 0.50 (i.e., –.474) An alternate factor structure, using an extraction criterion of three factors, was therefore explored. The factor loadings from this three-factor solution, with a Promax (oblique) rotation, are reported in Table 3.[3]

In order to ascertain the institutional context of each responding government, we subjected the data to a cluster analysis of the normative, regulatory, and cognitive structures. This cluster analysis identified distinct government clusters based on these institutional structures. We adopted a two-stage clustering process, as recommended by Ketchen and Shook (1996) and Hair et al. (1998). First, we subjected the three institutional structures to a hierarchical cluster analysis, utilizing Ward's method, which tends to produce roughly equally sized clusters by minimizing within-group variation (Hair et al. 1998). Rather than relying on a visual scan of the resulting dendrogram, the agglomeration schedule was consulted to determine the stage at which there was a large distance between clusters combined. Based on the change in the agglomeration index, a two-cluster solution was deemed to be the most descriptive of the data (Hair et al. 1998).

This two-cluster solution confirmed our expectations of the existence of two types of institutional contexts. Once this solution was obtained and our theory confirmed, we ascertained the cluster centers based on this method and used them to seed a second k-means cluster analysis. The advantage of this nonhierarchical method is that it is less vulnerable to outlying data and, as an iterative method, optimizes within-cluster homogeneity and between-cluster heterogeneity (Ketchen and Shook 1996). Seeding the analysis with the initial cluster centers obtained from the hierarchical cluster analysis counteracts the tendency of the iterative method to converge on a locally optimal solution (Hair et al. 1998). Such a combination of hierarchical and nonhierarchical approaches is thus believed to produce optimal solutions (Hair et al. 1998; Ketchen and Shook 1996). The initial and final cluster centers are provided in Table 4.

The cluster was used as an indicator of each government's institutional context (i.e., as a moderator in the analysis of the effects of TCE constructs on outsourcing). The k-means method also produces an assessment of each case's distance from the cluster center. This distance from the cluster center was used as an indicator of the *extent of institutionalization* of a particular city government. This statistic was then used as a control variable in the analysis, allowing us to account for cluster outliers or the effects of weak institutionalization.

As anticipated, the normative structure was not the defining attribute of the two institutional contexts. In the professional cluster, 72 of the 98 city governments (74 percent) were council–manager governments. Of the remaining 26 that were mayor–council governments, the majority (14 or 14.3 percent) were small cities with populations of 25,000 or less. Thus, small cities with a mayor–council structure often assumed the norms of professionalism. In the political cluster, 63 of the 115 city governments (55 percent) were mayor-type governments, and 52 of them (45 percent) were council–manager city governments, suggesting that norms of professionalism have imperfectly diffused through these governments or are being resisted (Frederickson et al. 2004).

[3]Note that the initial eigenvalue for the third factor of this solution was 0.918, with the final eigenvalue exceeding 1.0. In order to further confirm the appropriateness of this three-factor solution, a four-factor solution was also inspected. The fourth factor was noted to have an initial eigenvalue of 0.644, with the variance of strategic reference groups (signification) being distributed across factors 3 and 4. The three-factor solution was therefore retained.

Table 3. Factor Analysis of Institutional Structures

Items	Regulatory Structures	Cognitive Structures	Normative Structures
Pluralism			
We face opposition from elected officials	0.784	-0.037	0.097
We face opposition from employees	0.898	0.042	-0.083
We face opposition from department heads	0.911	-0.009	0.009
Strategic Reference Groups			
Under conditions of uncertainty, our department investigates other governments' IS decisions	-0.042	0.847	0.108
Under conditions of uncertainty, we attend conferences or professional meetings on IS management	0.042	0.797	-0.107
Organizational Form			
Council–manager or mayor–council forms	0.014	0.007	0.988
Initial eigenvalues	2.329	1.382	0.918
Final eigenvalues	2.285	1.414	1.080
Reliability (Cronbach's α)	0.832	0.738	NA

Table 4. Institutional Clustering of Regulatory, Cognitive, and Normative Structures

Structures	Initial Centers*		Final Centers	
	Professional Cluster	Political Cluster	Professional Cluster	Political Cluster
Regulatory Structures (Pluralistic Interests)	-0.0308 (0.9212)	0.0390 (1.0954)	-0.4391 (0.9404)	0.3742 (0.8945)
Cognitive Structures (Strategic Reference Groups)	0.2083 (0.8527)	-0.2811 (1.0970)	0.7793 (0.5936)	-0.6784 (0.7475)
Normative Structures (Government Form)	Manager (100%)	Mayor (100%)	Manager (74%)	Mayor (55%)
Number	119	94	98	115

*Means for continuous variables, predominant category for discrete variable (Standard deviation for continuous variables, proportions for discrete variable)

Measures

Below, we provide a description of our dependent variable, the independent variables, the institutional moderator, and the control variables used in this study.

IS Outsourcing Expenditure (Dependent Variable)

The instructions for assessing IS outsourcing expenditure were: "The questions below concern IS expenditures in your city government. Please give the percentage of the total IS budget that is allocated in-house or outsourced for each IS function." Respondents indicated the proportion of the total IS budget allocated to each of five IS functions—data processing, network/telecommunications, application development/maintenance, end-user support, and systems planning/management—and then the proportion of each function outsourced. This enabled us to calculate the overall proportion of the IS function outsourced, which served as the dependent variable. Note that the composite metric for the proportion of IS budget outsourced excludes the nondiscre-

tionary sourcing of the data processing function. As a low-skill, low-salaried function, there is considerable pressure on city governments to retain this function in-house (Kim 2003). This metric therefore represents the proportion of the discretionary IS budget outsourced.

TCE Constructs (Independent Variables)

Since scales assessing the TCE constructs within the context of IS outsourcing were not available at the time this study was designed, scales were developed for the purpose. In developing these scales, efforts were made to select scale items consistent with the theory. To this end, TCE literature was reviewed extensively and items constructed to represent the core TCE constructs. Respondents answered each of these perceptual, self-report items on a seven-point Likert scale. The resulting survey instrument was vetted in interviews with six IS managers in the south Florida area. It was subsequently pretested on these six IS managers and piloted in 240 city governments in Florida.

Items from the survey instrument used to assess TCE constructs are summarized in Table 5 along with their psychometric properties. This is based on an exploratory factor analysis, with an extraction criterion specifying a minimum eigenvalue of 1 and an oblique rotation, which reveals the true underlying factor pattern rather than a solution that enforces orthogonality, and is therefore considered the appropriate approach for demonstrating discriminant validity (Ford et al. 1986).

Institutional Context (Moderator)

Following the cluster analysis reported on above, each city government was classified as professional or political, based on its cluster membership.

Control Variables

Three control variables were used in this study: organizational size, IS budget, and extent of institutionalization. *Organizational size* was considered in terms of the population served by the city government. Population figures were obtained from an ICMA publication (International City/County Association 1997). The *IS budget* was assessed on the survey instrument using the following question: What percentage of the total city budget do you allocate for IS expenditures? The *extent of institutionalization* was operationalized during the cluster analysis as the distance of a city government from its respective cluster center. City governments close to the cluster center reflect congruence with the archetypical institutional context in the patterning of the structures and therefore stronger levels of institutionalization; observations further away from the center reflect patterns that are less consistent with the archetypical institution, and therefore lower levels of institutionalization (Venkatraman 1989; Zucker 1987).

Sample Characteristics

Respondent characteristics are summarized in Table 6. There was an insignificant difference in the distribution of organization size across the professional and political clusters ($p(\chi^2) = 0.45$). The authorization differences were marginally significant with respect to both spending limits ($t = 3.46$, $p = 0.065$) and distance from the approval authority ($t = 2.85$, $p = 0.093$).

Assessing Nonrepsonse Bias

Two assessments of nonrepsonse bias were conducted. The first compared early versus late respondents separating the 178 responses received in the first round of the survey from the 36 responses received subsequently. These two sets of respondents were compared with respect to their *IT budget* (assessed as the proportion of the total city budget allocated to IT), and the *outsourcing budget* (assessed as the proportion of the total IT budget allocated to IT outsourcing). They were not found to differ significantly with regard to either their IT budget ($t = 0.833$, $p = 0.406$) or outsourcing budget ($t = 0.643$, $p = 0.521$).

The second analysis for nonrespondent bias compared the sample of responding cities ($n = 214$) with a comparable sample of nonresponding cities ($n = 230$) with regard to city population and the total city expenditure. The population of responding and nonresponding cities was not found to be significantly different ($t = 0.842$, $p = 0.400$). Population statistics were available for all cities, but total city expenditures were available only for cities with populations over 25,000. Therefore, this test for nonrespondent bias contrasted all respondents and nonrespondents with regard to population, but only respondents and nonrespondents in cities with populations over 25,000 with regard to cities' total expenditure (excluding small cities). The differences in expenditure were not found to be significantly different across respondents and nonrespondents ($t = 0.818$, $p = 0.433$).

Table 5. Factor Analysis of TCE Constructs

Items	AS	UN	OP	BR	FR
Our IS function requires unique experience	0.812	-0.189	-0.030	-0.234	0.046
Our IS function requires up-to-date technical education.	0.684	0.210	0.048	0.024	0.093
Our IS function requires a unique technology.	0.825	0.209	0.018	0.100	0.036
We need to control IS expenses.	-0.074	0.784	0.000	-0.145	-0.002
It is difficult to foresee and keep up with the development changes in IS technologies.	0.270	0.751	0.023	-0.002	-0.009
We would like to anticipate the obsolescence of IS functions in the organization.	0.030	0.795	-0.014	-0.052	0.069
When we outsource, we are concerned about losing control of strategic applications.	-0.052	0.059	0.816	0.080	0.065
When we outsource, we are concerned about being locked into the contract.	0.008	-0.153	0.864	-0.178	-0.023
When we outsource, we are concerned about added costs for business or technology changes.	0.108	0.015	0.793	-0.046	0.003
When we outsource, we are concerned about the inability to rebuild IS functions in our organization.	-0.048	0.059	0.798	0.120	-0.049
We have limited physical facilities in the organization.	-0.120	0.168	0.025	-0.844	0.087
We have limited expertise in the organization.	0.350	0.004	-0.081	-0.653	0.027
We do not have necessary facilities in our organization.	0.047	0.082	0.042	-0.843	0.049
We use the IS function infrequently	-0.006	-0.002	0.005	0.001	0.951
We need the IS function temporarily	0.007	-0.027	-0.007	-0.003	0.951
Scale Reliability (Cronbach's α)	0.806	0.802	0.835	0.856	0.887

AS = Asset Specificity; UN = Uncertainty; OP = Opportunism; BR = Bounded Rationality; FR = Frequency

Table 6. Overview of Sample

Sample Characteristics	Professional Contexts	Political Contexts	Total
Organizational Characteristics: Population*			
Small (below 25,000)	38 (38.8%)	46 (40.0%)	84 (39.3%)
Medium (between 25,000-50,000)	28 (28.6%)	31 (27.0%)	59 (27.6%)
Large (over 50,000)	22 (32.7%)	38 (33.0%)	71 (33.2%)
Respondent Characteristics: Authority+			
Maximum dollar value authorized to spend for IS outsourcing without requiring approval from upper management	8,850.65 (12,608.35)	34,395.28 (221,568.50)	22,024.61 (159,399.50)
Levels of the hierarchy between your position as IS director and that of the director from whom you need to get [budgetary] approval	1.28 (0.62)	1.36 (0.87)	1.32 (0.75)
Total	98 (46.0%)	115 (54.0%)	213 (100%)

*Frequencies (proportion of sample); +Sample means (standard deviation)

Table 7. Descriptive Statistics

Variable	Professional Context	Political Context	Total
Population (Size – in 1000s)	55.39 (73.76)	59.36 (122.57)	57.31 (102.82)
IS budget (as percent of city budget)	3.41 (5.79)	4.71 (8.36)	4.11 (7.31)
Extent of institutionalization	1.04 (0.51)	1.10 (0.47)	1.07 (0.49)
Percentage of IS budget outsourced	27.77 (24.60)	22.83 (23.43)	25.11 (24.04)
Asset specificity	5.22 (1.46)	4.89 (1.39)	5.04 (1.43)
Uncertainty	4.90 (1.42)	4.37 (1.16)	4.62 (1.31)
Opportunism	4.38 (1.44)	4.56 (1.17)	4.48 (1.30)
Bounded rationality	5.44 (1.36)	4.76 (1.35)	5.07 (1.39)
Frequency	5.20 (1.54)	4.35 (1.60)	4.74 (1.62)

Table 8. Bivariate Correlations among Constructs

Constructs	1	2	3	4	5	6	7	8	9
1. Institutional context									
2. Extent of institutionalization	0.059								
3. Population (Size)	0.019	0.090							
4. IS budget	0.089	-0.073	-0.103						
5. Percentage of IS budget outsourced	-0.103	0.023	-0.080	-0.126					
6. Asset Specificity	-0.118	-0.002	-0.038	-0.016	0.285*				
7. Uncertainty	-0.202*	0.029	0.055	0.036	0.244*	0.541*			
8. Bounded Rationality	-0.246*	0.004	-0.088	-0.035	0.302*	0.554*	0.502*		
9. Opportunism	0.069	-0.074	-0.099	0.072	-0.202*	0.031	0.083	0.025	
10. Frequency	-0.264*	0.044	0.023	-0.136+	0.212*	0.423*	0.372*	0.497*	0.004

*Correlation is significant at the 0.01 level; +Correlation is significant at the 0.05 level (2-tailed)

Analysis and Results

Descriptive statistics for study variables are presented in Table 7. Means and standard deviations are presented for each institutional context, as well as for the overall sample. Bivariate correlations among variables are provided in Table 8.

Treatment of Missing Data

Data for 40 of the total 214 observations were missing for the IS budget variable. Since this represented a relatively high proportion of the data (i.e., 18.7 percent), the missing data for this control variable were replaced with the average budget estimate for the population strata. Using the population strata as a basis for the averages made sense since population served as the basis for the stratified sample. Replacement with the mean is a relatively conservative technique for handling missing data since it does not artificially elevate or deflate the parameter estimate. The alternate technique of case-wise deletion would have resulted in a loss of data that was especially unnecessary since the missing data concerned only a control variable and not a variable involved in any of the hypothesis. No adjustments were required for any other variables as a very small proportion of the data were missing, enabling over 96 percent to be retained for analysis.

Table 9. Results of Hierarchical Regression

Term	1: Controls		2: Institutional Effect		3: TCE Effects		4: Constrained Rationality	
	F	p	F	p	F	p	F	p
Intercept	39.95	0.000	39.95	0.000	42.19	0.000	45.73	0.000
Population (Size)	1.30	0.255	1.21	0.273	0.62	0.434	0.21	0.651
IS Budget	3.56	0.059	3.22	0.074	3.29	0.071	4.02	**0.046**
Extent of Institutionalization	0.01	0.942	0.00	0.952	0.01	0.909	0.05	0.819
Institutional Context			1.07	0.302	0.61	0.437	1.47	0.227
Asset specificity					5.97	**0.015**	9.60	**0.002**
Uncertainty					5.22	**0.023**	7.89	**0.006**
Opportunism					4.51	**0.035**	2.81	0.095
Bounded Rationality					3.09	0.080	1.42	0.234
Frequency					0.18	0.670	0.72	0.397
Institutional Context*AS							0.47	0.492
Institutional Context*U							2.99	0.086
Institutional Context*OP							7.02	**0.009**
Institutional Context*BR							10.69	**0.001**
Institutional Context*FR							6.01	**0.015**
R^2	0.022	0.215	0.028	0.237	0.221	**0.000**	0.305	**0.000**
Adjusted R^2	0.008		0.008		0.184		0.252	
ΔR^2			0.006	0.259	0.193	**0.000**	0.084	**0.003**

Results of Hierarchical Regression

To analyze the predicted moderation of TCE logic by the institutional context, a moderated regression was conducted. The analysis was conducted using the GLM procedure in SPSS. To minimize the multicollinearity problems possible with the interaction terms, the TCE and institutional context variables were centered (Aiken and West 1991).

Results of the regression are presented in Table 9. These results suggest that a main effect existed for asset specificity, that uncertainty had no significant impact on outsourcing levels, and that the effects of opportunism, bounded rationality, and frequency were indeed moderated by the institutional context. Terms in the final model that are significant at $\alpha = 0.05$ are highlighted.

The GLM procedure allows for concurrent estimates of parameter coefficients for different levels of a dummy variable, along with their levels of significance. Since subsample estimates are computed with a loss of power (Stone and Hollenbeck 1989), to obtain the parameter coefficients for the subsamples, the model was rerun, including the interaction terms only for the TCE constructs noted to be significantly moderated by the institutional context in Table 9. To further account for the loss of power in the subsample analysis, the decision criteria for rejection of the null hypothesis was relaxed to $\alpha = 0.10$. Resulting sample and subsample βs and their significance levels from this analysis are depicted in Table 10.

Discussion

The results presented in Tables 9 and 10 clearly indicate support for institutional mitigation of the logic of TCE. We now consider the implications of our findings for theory and IS practice. In order to facilitate this discussion, the results of hypothesis testing are summarized in Table 11.

Table 10. Sample βs (and p-values) for Main Effects and Subsample βs (and p-values)

Term	Main Effects	Subsample Effects	
		Professional	Political
	Sample/Subsample βs (and p-values)		
Population	0.00 (0.635)	–	–
IS Budget	-0.38 (0.056)	–	–
Institutional Context*	-3.60 (0.252)	–	–
Institutionalization	-0.03 (0.991)	–	–
Asset specificity	**5.93 (0.004)**	–	–
Uncertainty	**5.61 (0.005)**	–	–
Opportunism	–	**-6.70 (0.002)**	1.58 (0.502)
Bounded Rationality	–	-1.60 (0.558)	**6.44 (0.012)**
Frequency	–	**5.86 (0.030)**	**-3.93 (0.096)**

*1 = Professional, 0 = Political

Table 11. Results of Hypothesis Testing

	Hypothesis	Finding
1a	Higher levels of asset specificity will lead to a lower proportion of the IS budget being outsourced in professional contexts.	Reversed
1b	Higher levels of asset specificity will lead to a higher proportion of the IS budget being outsourced in political contexts.	Supported
2a	Higher levels of uncertainty experienced will lead to a lower proportion of the IS budget being outsourced in professional contexts.	Reversed
2b	Higher levels of uncertainty experienced will lead to a higher proportion of the IS budget being outsourced in political contexts.	Supported
3a	Higher levels of opportunism experienced will lead to a lower proportion of the IS budget being outsourced in professional contexts.	Supported
3b	Higher levels of opportunism experienced will lead to a higher proportion of the IS budget being outsourced in political contexts.	Not supported
4a	Higher levels of bounded rationality will lead to a lower proportion of the IS budget being outsourced in professional contexts.	Not supported
4b	Higher levels of bounded rationality will lead to a higher proportion of the IS budget being outsourced in political contexts.	Supported
5a	Higher transactional frequency will lead to a higher proportion of the IS budget being outsourced in professional contexts.	Supported
5b	Higher transactional frequency will lead to a lower proportion of the IS budget being outsourced in political contexts.	Supported

Institutional Moderation of the Logic of TCE

In this paper, we viewed TCE as a heuristic that is applied to boundary decisions, specifically to IS outsourcing. We then posited that different institutional contexts would either support or contradict the application of this heuristic. Our findings provide partial support for these premises.

First, we note that the TCE heuristic is not one that is blindly applied to the outsourcing decision, as might be believed following critiques of TCE by Ghoshal and colleagues. In fact, outsourcing choices were found to directly contravene this heuristic vis-à-vis asset specificity and uncertainty. Second, it is evident that understanding the institutional context does matter. Interestingly, though, the institutional context appears more important in moderating the effects of human frailty conditions (i.e., opportunism and bounded rationality) and of frequency, than of fundamental situational conditions (i.e., asset specificity and uncertainty). This finding is consistent with the notion that institutions come into existence so as to influence decision makers' perceptions and expectations surrounding a transaction, rather than the attributes of the transaction itself (e.g., North 1990). The institutional context also significantly moderated the effect of transaction frequency on outsourcing. We now consider each component of the TCE heuristic and its intersection with the institutional context.

Asset Specificity

Our results indicate that regardless of the institutional context, asset specificity had a positive effect on outsourcing. This is clearly a contradiction of the TCE heuristic. To understand why governments would outsource functions high in asset specificity but not those low in asset specificity (why there would be a positive relationship between asset specificity and outsourcing), we need to consider the resource context of the public sector compared to the private sector. The relative *munificence* plays a salient role in mitigating the effects of TCE constructs on boundary decisions (Steensma and Corley 2001). Analyses of the dynamics of internal labor markets suggest that resource munificence impacts organizations' ability to internalize asset-specific skills (Doeringer and Piore 1971). In-house development of such skills requires employers to invest in training employees. Whereas employees may be inclined to invest in nonspecific skills that can be transferred to other job situations, they have no motivation to invest in organization-specific skills. Development of such skills also tends to be expensive because economies of scale cannot be leveraged. Furthermore, employees need to be adequately compensated so that they do not leave once the employer has invested in training them. Organizations with scarce resources are unable to make such investments in their human capital. Public sector pay scales are notoriously curtailed by legislative bodies and subject to strict budgetary scrutiny (Bretschneider 1990).

This relationship between munificence and asset specificity is not limited to human capital alone. When resources are limited, as they typically are in government organizations, capital outlays are more difficult than are operational outlays. Outsourcing offers the opportunity for resource-poor organizations to convert capital outlays into operational expenses (Apte et al. 1997). Given the salience of asset-specific functions to the organization, as asset specificity increases, so too does the organization's attentiveness to developing and supporting the function through outsourcing.

Uncertainty

Contravening the TCE heuristic, transaction uncertainty also had a positive effect on outsourcing across *both* institutional contexts. In the presence of regulatory pressures, firms cope with uncertainty by outsourcing (Ang and Cummings 1997). The public sector has historically faced mounting regulatory pressure to outsource (Linowes 1988). Given the resource scarcity of government environments, it is reasonable that managers would attempt to mitigate heightened uncertainty with increasing responsiveness to regulatory pressures to outsource. Furthermore, city governments' limited budgets are derived from previous year's expenditures (Lauth 1978). Within this resource-allocation structure, unplanned resource allocations are less possible. Outsourcing makes expenses more predictable over the contract duration (Grover et al. 1996). Such predictability will minimize the need for impromptu allocations or having to cope with the consequences of system delays or downtime. Uncertainty engenders incremental approaches in decision making (Mone et al. 1998). Such an incremental strategy ensures that gains from IT investments in outsourcing can be observed before additional commitments are made. Recruiting employees, on the other hand, and other internal allocations necessitate commitments of resources that are not easily retrenched. Furthermore, uncertainty encourages imitative behavior (DiMaggio and Powell 1983), and imitation under conditions of uncertainty is beneficial in imposing order on the organization (Levitt and Nass 1989). Such isomorphism has been found to be higher in government organizations than in the private sector (Gupta et al. 1994). Therefore, when faced with uncertainty, decision makers can be expected to follow prevailing wisdom that suggests outsourcing to ensure predictable resource allocations.

Opportunism

Anticipated opportunism was found to have a significantly negative effect on outsourcing within professional governments. This supports the assumption of TCE that decision makers' expectations of partner opportunism will dissuade the externalization of the transaction. Among political governments, while the effect was positive as anticipated, it was insignificant. This could be attributable to concern for external opportunism competing with a concern for internal opportunism. While the latter was believed to prevail within political governments, a concern for opportunism by vendors cannot be excluded. This may have weakened the positive effect of anticipated vendor opportunism on outsourcing.

Bounded Rationality

The anticipated negative effect of bounded rationality was observed among professional governments. However, this effect was insignificant. Again, this is likely attributable to the concerns for the economic viability of outsourcing under conditions of bounded rationality competing with concerns about an internal entity with control over information processing resources. The anticipated positive effect of bounded rationality on outsourcing among political governments was observed to be significant.

Frequency

High frequency transactions were more likely to be outsourced in professional governments. This supports the premise of TCE that, by enabling learning and scale economies in transaction costs, high frequency transactions minimize overall costs of information impactedness (Williamson 1985). Among political governments, high frequency transactions were less likely to be outsourced. This supports our expectation of the prevalence of a political, rather than economic, logic within political contexts as decision makers seek to forestall hostility from constituents who are opposed to large-scale outsourcing and the accompanying loss of public sector jobs.

Implications for Research

Researchers who have applied TCE to the study of IS outsourcing have expressed a concern about the limited explanatory power of the transaction cost logic in relation to IS outsourcing (Ang and Straub 1998). Our study findings indicate that the main effects of the TCE constructs accounted for 19.3 percent of the variance in IS outsourcing (ΔR^2 for Model 3 in Table 9); the hypothesized moderated effects of the institutional context accounted for an additional 8.4 percent of the variance in IS outsourcing (ΔR^2 for Model 4). Collectively, the TCE constructs thus accounted for more than 25 percent of the overall variance in IS outsourcing allocations in city governments. These findings suggest that a more comprehensive investigation of TCE logic, and one tempered by an understanding of the institutional contexts underlying decision making, does indeed enable the theory to afford a stronger explanation of boundary decisions. Consistent with work by Steensma and Corley (2001), our findings also suggest the need for considering the effects of organizations' resource context in their application of the TCE heuristic to boundary decisions.

Implications for Practitioners

Our research findings provide some important insights for practitioners. First, unlike the private sector, city governments tend to outsource asset-specific functions due to the relative paucity of their organization, specifically, the restriction of pay scales that makes it difficult to attract qualified IT personnel. Second, the positive relationship between uncertainty and outsourcing may be attributed to the budgetary processes. Outsourcing reduces cost uncertainty in the short-term, which can be a powerful motivation for decision makers looking to get reelected. Furthermore, outsourcing potentially externalizes the locus of responsibility, enabling government decision makers to sidestep blame should things go wrong. It is useful for vendors to understand these heuristics underlying outsourcing decisions in city governments so as to be better able to meet the needs of this distinctive clientele.

Next, we note that the effects of human frailty conditions (i.e., opportunism and bounded rationality), as well as of transaction frequency, are contingent on the institutional context. The relevance of this institutionally contingent logic is not limited to the public sector. Variations in professional and political norms are not restricted to the public sector; firms too differ in this regard (e.g., Dean and Sharfman 1996). Similarly, variations exist in the plurality of principals in the private sector. While private sector agents are typically believed to be responsible to stockholders only, they are increasingly held to account by multiple other principals: customers, employees, regulatory bodies, etc. (Dixit 1997). A multiplicity of principals, and a consequent plurality in organizing logic, has also been noted in industries such as restaurant chains that rely on franchise arrangements (Bradach 1997). Finally, firms also differ in the extent to which they are inclined to be attentive to reference groups (e.g.,

DiMaggio and Powell 1983). Our contextualized exploration of TCE logic therefore has implications for private sector managers as well. Our findings also suggest that vendors who are attentive to such motivations for outsourcing underlying different institutional contexts may be better able to serve clients' needs.

Limitations

Our study is not without its limitations though. While our test of TCE is more comprehensive than those undertaken before, it is still not entirely comprehensive. The theory of transaction costs suggests that given conditions of human opportunism and bounded rationality, these costs accrue based on situations of transaction specificity and uncertainty, and may be mitigated in the case of frequently occurring transactions. The transaction costs then influence boundary decisions. A complete test of this logic would entail the exploration of transaction costs as a mediator of the effects of asset specificity, uncertainty, opportunism, bounded rationality, and frequency on outsourcing. Notably, frequency also impacts boundary decisions through production costs, as represented in Figure A1 (Appendix A). Our study design, which did not assess the transaction cost construct itself, but rather investigated the direct effects of the source conditions on outsourcing, precludes us from concluding the extent to which frequency is salient to boundary decisions because of its impact on transaction costs instead of production costs.

While we attempted to develop survey items based on existing theory, further development and validation of scales is warranted. The two-item frequency measure that speaks to the IS function rather than to the transaction is potentially the most problematic. These scale limitations should be considered in interpreting our findings.

The issue of metrics arises with regard to institutional contexts too. Although the measures used to assess the institutional context of city governments were subject to a fairly rigorous validation process, there is little existing research that provides guidance on the operationalization of regulatory, cognitive, and normative structures internal to organizations. Furthermore, our operationalization was specific to the city government contexts being studied. This is particularly evident in our operationalization of the normative structure as mayor–council or council–manager types. In studying cognitive structures, a study of for-profit organizations may wish to contrast the different *types* of strategic reference groups or the manner in which they are referenced, rather than the extent to which an organization *references* such groups. Finally, in looking at regulatory structures in for-profit organizations, it may be more meaningful to consider the different *types* of regulatory bodies that exist, rather than the extent to which the firm is regulated by different constituencies. As such, future research may not be able to simply utilize the metrics developed here in studying other types of organizational environments.

Contributions and Suggestions for Future Research

Our research highlighted specific structures that are constitutive of decision makers' institutional context. Unlike earlier research that viewed institutional structures as independent moderators of the effects of TCE (e.g., Ang and Cummings 1997), we considered the moderating effect of these holistic institutional contexts on boundary decisions. This framing of institutional structures and our research findings can serve as a basis for further empirical work on institutional contexts and organizational boundary decisions.

Our approach to considering the intersection of institutional logic and TCE logic is novel even in the literature on economic institutions. Whereas institutional mitigation of the logic of transaction costs is believed to hinge on fostering extra-organizational cooperation on exchanges otherwise susceptible to transaction costs (e.g., North 1990), here we viewed the political institution as one that defies the logic of TCE, not because of its cooperation-engendering properties, but rather because of its level of internal competition and contention. This is an important insight that merits further investigation.

The discussion of our study findings suggests theoretical refinements of transaction cost economics. Specifically, it suggests that a complete operationalization of the TCE model can add to our understanding of boundary decisions. Research should further operationalize all TCE constructs, including transaction costs itself, so as to more comprehensively test the TCE model. Furthermore, institutional contexts circumscribe decision makers' application of TCE logic to organizational boundary decisions. Future research should elaborate on the gestalt of institutional contexts developed here: identifying additional gestalt and constitutive structures. Our findings with regard to the positive effects of asset specificity and uncertainty on outsourcing suggest that the logic of transaction costs alone is inadequate in understanding the effects of situational conditions; they also need to be considered in terms of resource munificence and slack (Steensma and Corley 2001). In particular, labor market and human capital theories may prove useful in explaining the outsourcing phenomenon (Doeringer and Piore 1971).

The institutional distinctions drawn based on normative, cognitive, and regulatory structures further suggest that the public or private sector dichotomy may be an artificial one. Instead, it is plausible that all organizations occupy some place on a continuum constituted by such institutional structures. Finally, our work suggests that juxtaposing diverse theoretical perspectives can shed considerable light on a phenomenon that has been extensively studied before.

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Appendix A

Overview of the Transaction Cost Explanation of Governance Decisions

In addition to the five core antecedents of transaction costs (i.e., asset specificity, uncertainty, opportunism, bounded rationality, and frequency), IS outsourcing researchers have included several others in TCE-based studies. As depicted in the nomological network in Figure A1, these other constructs overlap definitionally with the five core constructs, are indicators of those conditions, or are unrelated to the logic of transaction costs.

In Williamson's (1975) early analysis, the small numbers condition appeared as one of the four core antecedents of transaction costs. In describing *ex ante* and *ex post* small numbers conditions, Williamson (p. 29) refers to the "idiosyncratic" nature of transactions, which gives rise to monopolistic conditions, and subsequently to haggling, either at the outset or following the onset of the relationship. In these descriptions of the small numbers condition, the underlying condition is clearly asset specificity, which is apparent also in his discussion of the "uniqueness" underlying such transactions (p. 205). In later versions of TCE, the concept of asset specificity replaces the small numbers condition. Supplier presence, as assessed in work by Ang and Cummings (1997), represents an indicator of the prevalence of the small numbers condition.

"Complexity" appears in Williamson's formulation of TCE as a construct that is not independent of uncertainty. In their definitions, the two constructs overlap, with complexity being defined as the inability to develop a "complete decision tree" (p. 23). Williamson's discussion then focuses largely on the uncertainty construct, rather than on complexity.

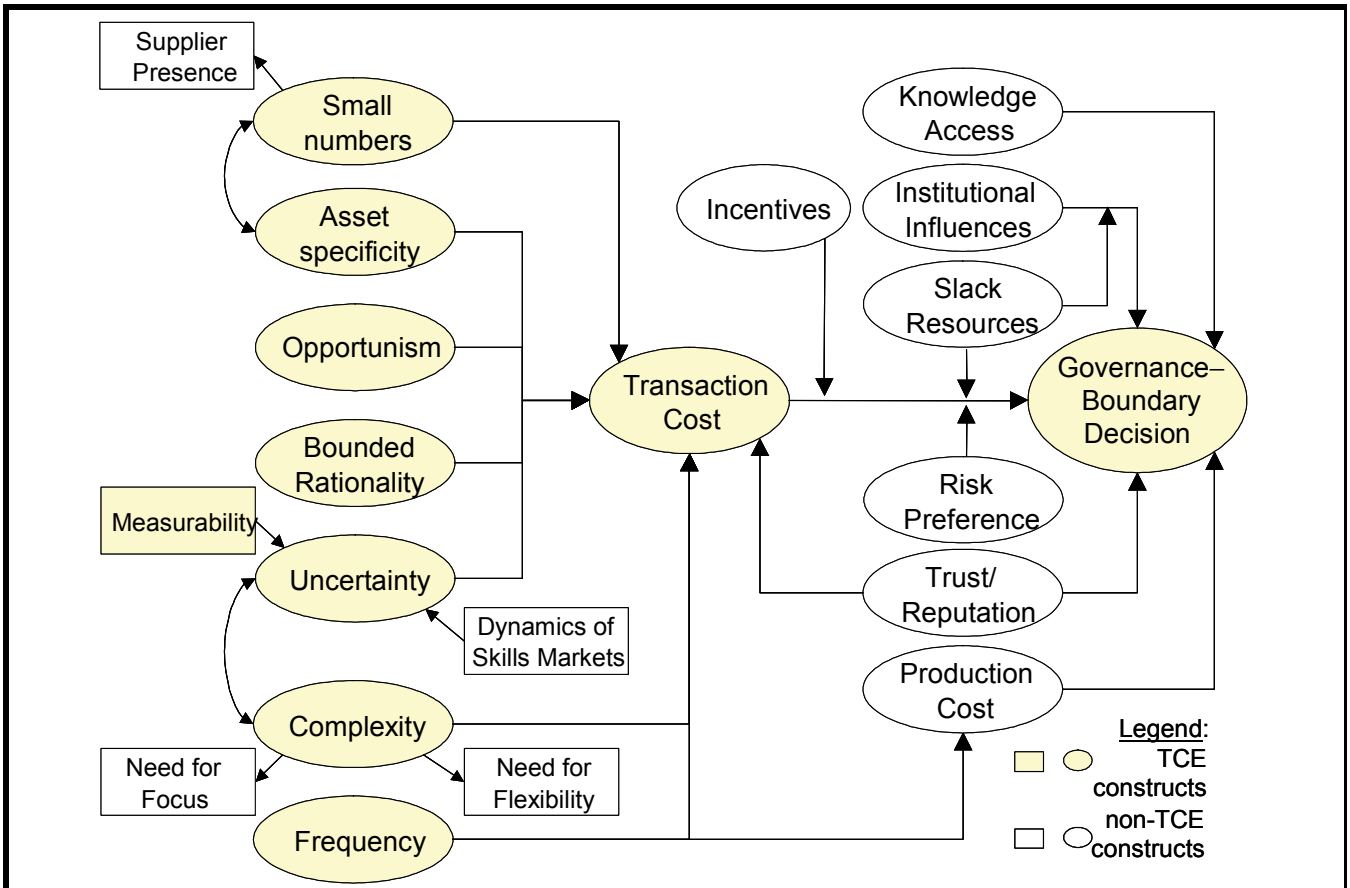

Figure A1. TCE Nomological Network

TCE-based outsourcing literature has also explored production costs,[4] slack resources, the role of trust[5] and reputation, institutional influences, and access to knowledge. As indicated in Figure A1, these constructs are not relevant to the logic of transaction cost economics, but rather provide alternate explanations for governance or boundary decisions. The logic for these constructs lies in conventional micro-economic theory, ideas of socio-cultural embeddedness, and the knowledge-based perspective respectively. While some researchers have explored the mitigating effects of these constructs on transaction costs (e.g., trust—Dyer and Chu 2003) and the enhanced explanation afforded by combining TCE and other perspectives (e.g., knowledge-based perspective—Afuah 2001), these perspectives are not part of the TCE logic. However, in keeping with the multi-theoretic paradigm of research such as Ang and Cummings (1997) and Afuah (2001), our intent is to look to institutional theory for an augmentation of the explanation provided by TCE.

[4]While Williamson acknowledges the importance of production costs, these are not central to his theses on transaction cost economics, but rather represent TCE's point of departure from conventional microeconomics or "textbook orthodoxy" (Winter 1991).

[5]Other than calculative trust, which is within the purview of economic rationality, other bases of trust and institutional considerations are definitionally within the purview of socio-cultural rationality (Williamson 1996). In Williamson's formulation of transaction costs, "it is redundant at best and can be misleading to use the term 'trust' to describe commercial exchange for which cost-effective safeguards have been devised….Calculative trust is a contradiction in terms" (1996, p. 256). The logic of calculative trust is at odds with the premise of transaction costs because calculative trust cannot exist given conditions of opportunism, bounded rationality, asset specificity, and uncertainty. Under such conditions, a decision maker cannot rationally assume a position of vulnerability with an expectation that the other will behave in a benevolent fashion; given the likelihood of the other's opportunism and one's own inability to mitigate this downside risk with well-structured controls, trust cannot be a rational choice. Trust must therefore derive from systems other than the economic system (i.e., from institutional and social systems).