



Cost escalation in information technology outsourcing: A moderated mediation study



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ABSTRACT

Although the issue of cost escalation has often been mentioned in the literature on information technology outsourcing (ITO), the mechanisms by which cost escalation occurs in the ex-post stage of contracting has received little attention. Evidence suggests that cost escalation is common in ITO engagements. Drawing on transaction cost economics (TCE), this study examines the determinants of cost escalation in ITO. We propose and test a research model by positing that transaction attributes or characteristics (relation-specific investments, bargaining power and, measurement difficulties) do not affect cost escalation directly, but rather through the mediation of the holdup problem and disputes between the contracting parties. Furthermore, we examine how the multi-sourcing strategy and clan mechanisms, as a soft contracting mode, moderate this mediation. Data from a survey of 132 ITO decisions were analyzed. The results provide good support for the main hypotheses of the study and yield interesting insights about the determinants of cost escalation in ITO arrangements. Both research and practical implications of the results are discussed.

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1. Introduction

The growth of information technology outsourcing (ITO) market is evident from recent industry statistics. DataMonitor estimated the ITO market to be worth about \$320 billion in 2015 [22]. ITO emerged as an important tool for enabling organizations to improve the quality of services, lower the cost of IT and, obtain access to scarce resources [54]. Notwithstanding these benefits, unsuccessful ITO experiences in which service providers failed to deliver the expected savings are widely reported [33,35,42,43,45,57,58,64]. Approximately a third of companies studied by Lacity et al. [42] had canceled their ITO contracts and several of 25 world-class organizations recently surveyed by Deloitte Consulting reported many unforeseen problems related to ITO that created additional service costs and generated friction with their service provider, ultimately resulting into higher total costs than anticipated a priori [58]. The problems were important enough that 25% of the IT services outsourced by these firms were brought back in-house [62].

Recently, some large ITO failures have received wide attention. For example, JP Morgan Chase and Co. ended its outsourcing relationship with IBM Corporation after two years of what was projected to be a seven-year, \$5-billion arrangement. JP Morgan Chase and Co. returned all IT functions back in house [62]. According to transaction cost economics (TCE) perspective [66], a major reason of these failures is that costs escalate in the ex-post stage of the ITO contract. Indeed,

cost escalation is a key concern when organizations outsource their IT services [24] and clients are often extremely dissatisfied with the outcomes of their ITO deals [63]. As Hirschheim and Lacity [35] put it “IT managers commiserate over the challenges of convincing senior executives that, contrary to popular belief, outsourcing isn't always a money-saving option”.

Against this backdrop, this study attempts to advance our knowledge about the mechanisms by which costs escalate in the ex-post stage of ITO contracts. As TCE suggests, a transaction “occurs when a good or service is transferred across a technologically separate interface” [66]. Prior literature has shown that transactions' characteristics or attributes such as relationship-specific investments, measurement difficulties and bargaining power, and holdup problem form the cornerstone of TCE [38,42]. The proposed model in this study posits that the three major and well-studied transaction attributes, including relation-specific investments (or asset specificity), bargaining power and measurement difficulties [42] affect cost escalation via two mediating constructs: the holdup problem and disputes between the contracting parties [65,66]. Furthermore, the model also hypothesizes that multi-sourcing strategy [43] and clan mechanisms [46] play moderating roles in reducing the intensity of the holdup problem and disputes, hence ultimately mitigating cost escalation. Multi-sourcing as a management strategy and clan mechanisms as a soft contracting mechanism are considered widely in TCE literature [42]. Although most of the studies have used these constructs, the present study attempts to integrate them into one comprehensive research model to assess the determinants of cost escalation in ITO arrangement. We focused only on two main scenarios (holdup problem and disputes) or mechanisms by which transaction attributes effect cost escalation. While there are several unwanted

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scenarios when IT operations are outsourced (e.g., intellectual property, confidentiality, etc.), we limit our study on the most common and cited scenarios in the ITO literature [42] (the holdup problem and disputes between the contracting parties). While this conceptualization is based on TCE prescriptions [68], we believe that other lenses may be useful to capture other facets of the studied phenomenon.

This study's contributions to research are twofold. First, this study focuses on the ex-post stage analysis and acknowledges Oliver Williamson's statement [72] "to focus entirely on ex-ante contracting is a truncated way to study organization – especially if all contracts are unavoidably incomplete and if adaptation is the central problem of economic organization. Moving beyond the ex-ante incentive alignment, transaction cost economics turns its attention – additionally and predominately – to the ex post stage of contract". Furthermore, while contract design, structure, type and characteristics are still important mechanisms in ITO arrangements [15,30,42,52], prior literature argues that ITO contracts are essentially incomplete and the parties cannot credibly commit not to engage in inefficient bargaining ex-post [9,26,59,66,72], generating a situation characterized by post-contract opportunism even in the presence of mutually agreed-upon contracts [1,66]. Second, the research model proposed in this study takes into account the mediation of two major TCE potential scenarios: the holdup problem and disputes [53,57]. We propose that transaction attributes affect cost escalation through these two mediating constructs. TCE percepts suggest that the mechanisms by which costs escalate are a fundamental issue in defining the determinants of cost escalation in ITO arrangement [66]. The rest of the paper is organized as follows. First, we provide the theoretical perspective and hypothesis development. Next, we describe the research methodology, empirical analysis, and results. The paper concludes with a discussion of our findings, the theoretical and practical contributions of our work, its shortcomings, and future research directions.

2. Theoretical perspective and hypothesis development

Transaction cost economics perspective is based on two key assumptions: bounded rationality and opportunism. Bounded rationality refers to "behavior that is intendedly rational but only limitedly so" [65]. One of the main consequences of bounded rationality is that contracts are incomplete [66]. The second TCE assumption is opportunism which is defined as "self-interest seeking with guile, to include calculated efforts to mislead, deceive, obfuscate, and otherwise confuse" [68]. According to TCE logic, many forms of opportunistic behavior including unreliable reporting of the activities performed, strategic lock-in, price increase, intellectual property, etc. are all potential consequences, or representations, of opportunism [64]. Building upon incomplete contract theory [34] where contracts are distinguished by an incomplete specification at the ex-ante stage (contract terms prepared and negotiated), transition stage (schedules and transition milestones)

and, an execution at the ex-post stage (action stage). Our focus in this study is on the ex-post stage of contracting, that is, the action stage where the contract is executed. The combination of incomplete contracts and representations of opportunism implies that ex-post contracting problems are likely to emerge [71]. In the case of ITO, for instance, an IT service provider may lie about – or exaggerate – its capabilities or use its knowledge advantage to sell services to clients that have little experience and/or awareness of their needs or market prices. IT service providers may also do this because they want to enter a new market, dominate a market segment or lock out competitors [39]. Under these two TCE assumptions, transaction attributes (relation-specific investments, bargaining power and, measurement difficulties) [4,5,12,51,65] may lead to certain unwanted situations or scenarios (the holdup problem and disputes between parties), resulting in cost escalation [65,66].

Cost escalation refers to the difference between actual costs (all the costs incurred in the completion of the outsourced IT operation) and the contracted costs. Legitimate costs including increased service volumes and added services are not considered part of the cost escalation construct. Costs are not limited to the actual performance of the IT operation; rather, they include costs that are not present when an IT operation is performed in-house, such as maintaining an agreement, monitoring exchange behavior and guarding against opportunism in an exchange situation [70], coordinating with the IT service provider, transferring knowledge, specifying requirements, etc. [24]. Under such circumstances of outsourcing transactions of such attributes, an opportunistic behavior may arise, and an IT service provider may be tempted to increase costs for the client [4]. To counter such situation, two complementary governance mechanisms: a multi-sourcing strategy and clan mechanisms may moderate the relationship between transaction attributes and unwanted potential scenarios [47,70,71]. Table 1 lists and defines the constructs from TCE we considered in our study.

2.1. The mediating role of the holdup problem

The holdup problem or a lock-in situation refers to a situation where a client cannot get out of a relationship without incurring a loss or sacrificing part or all of its assets to the IT service provider [28]. As predicted by TCE [66], we posit two antecedents to the likelihood of a holdup problem in an ITO arrangement: relation-specific investments and bargaining power. Relation-specific investments refer to the degree to which it is difficult to redeploy the assets used to perform an activity to "alternative uses and by alternative users without sacrifice of productive value" [68]. In other words, it is the extent to which the investments made to support a particular transaction that has a higher value in relation to that transaction that they would have had if they had been used for any other purpose [37,44]. In ITO, relation-specific investments stem from highly

Table 1
Definitions of constructs.

Construct	Definition	Source
Asymmetrical relationship-specific investments	The degree to which an asset can be redeployed to alternative uses and by alternative users without sacrifice of productive value.	[65]
Bargaining power	The degree to which a client has reputable and trustworthy alternative sources of supply to meet its needs.	[2]
Measurement difficulty	The degree of difficulty in measuring the performance of exchange partners in circumstances of joint effort, soft outcomes, and/or ambiguous links between effort and performance.	[49]
Hold-up problem	Situation where one partner cannot get out of a relationship except by incurring a loss or sacrificing part or all of its assets to the other partner.	[28]
Disputes	Issues that have escalated to the executive committee; occur when all other governance processes have been exhausted and when the consequences severely commercially disadvantage one party.	[72]
Multi-sourcing	Outsourcing the same IT operation to more than one IT service provider.	[10]
Clan mechanisms	Exercise of control through shared values, belief structures, and cultural norms, rather than through traditional bureaucratic control procedures.	[47]
Cost escalation	The difference between actual costs (all the costs incurred in the completion of the outsourced operation) and contracted costs.	[70]

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