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Lessons for Procurement and Contract Management Practice in the Public Sector: Evidence from a Quantitative Study

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Abstract

We contribute to the literature on procurement and contract management in the public sector by reporting on the current practice of public and private sector organisations and the outcomes of that practice. In particular, we chart the effectiveness of certain procurement and contract management actions in moderating potential supplier opportunism. The article is based upon a quantitative analysis of 180 questionnaire responses provided by procurement and contract managers. The results are not totally conclusive, but do provide evidence to suggest that opportunism is a significant possibility, and that certain procurement and contract management actions can assist organisations in dealing with that possibility. The results suggest little difference between public and private sector experiences.

JEL classification: C38, H57, L14

Keywords: Procurement, contract management, opportunism, structural equation model

Introduction

In many countries, the outsourcing of public services is accelerating (Torres and Pina, 2001; Batley and Larbey, 2004; Mulgan, 2005; Hart, 2007; Northoff, 2008; National Outsourcing Association, 2010). This acceleration is often justified on the basis that private sector providers can deliver the same quality of services as their public sector counterparts but for a considerably lower price (Julius, 2008), although numerous claims have been made against this argument (for example, Pollock, 2006; Davies, 2008. One consequence of this increasing use of the private sector is that procurement and contract management is ever more central to public sector management. Indeed, effective public sector management is, to an increasing extent, becoming effective procurement and contract management.

However, it would be wrong to assume that there is a settled consensus on what constitutes effective public sector procurement and contract management. First, there is the issue of how far public procurement should be used for wider socio-economic objectives such as local or regional development, innovation or the promotion of sustainability (House of Lords Science and Technology Committee, 2011). This is something, of course, that marks out public from private sector procurement. Second, and the focus of this article, there is a debate in the public sector management literature over the emphasis that should be placed upon trust in the procurement and contract management process, rather than a need to guard against supplier opportunism (for example, Grimsey and Lewis, 2004; Bovaird, 2006; The Author et al, 2010). This debate is crucial, as clarity over the focus and objectives of the procurement and contract management process is critical to the delivery of satisfactory outcomes.

We contribute to this debate by reporting on the current procurement practice of public and private sector organisations and the outcomes of that practice. In particular, we chart the effectiveness of certain procurement and contract management actions in moderating potential supplier opportunism. The article is based upon a quantitative analysis of 180 questionnaire responses provided by procurement and contract managers. The questionnaire asked respondents to classify a contract management situation in terms of the transaction characteristics, report on procurement and contract management actions taken in the situation, and then report on the outcome.

The sample included both public and private sector respondents, allowing a public sector dummy variable to be included to measure differences in practices and outcomes between the two sectors.

The article makes a major contribution by providing a comprehensive dataset, underpinned by formal economic theory, on current public sector procurement and contract management practice.

Trust and Public Sector Procurement and Contract Management

There is a critical debate within the public sector management literature, reflecting a similar debate in the wider management literature, over the emphasis that should be placed upon intentional trust in the procurement and contract management process (for example, Walsh, 1995; Lane 1999; Grimshaw et al, 2002; Huxham, 2003; Grimsey and Lewis, 2004; Boardman et al, 2005; Coulson, 2005; Watt, 2005; Hodge and Greve, 2005; Bovaird, 2006; Reeves, 2008; Vining and Boardman, 2008; The Author et al, 2010). In the procurement context, intentional trust is defined as the expectation of one party to an exchange that the other party will not take advantage of commercial vulnerabilities even when there is an incentive to do so (Nooteboom, 2002). This is distinct from competence trust or trust in the capabilities of the other party (Sako, 1992), which is an equally important concept, but not the focus of this article.

This particular debate does not concern the benefits of intentional trust, should it be successfully created. These have been well charted and agreed upon in the literature and include reduced transaction costs (search costs, negotiation costs, contracting costs and monitoring costs) and an increased level of value creation (Chiles and McMakin, 1996). The debate is more about the feasibility of its creation. The literature surrounding this is not surprisingly wide-ranging, drawing upon discussions of human nature and psychology (Williamson, 1993; Nooteboom, 2002), business theory (Ghoshal, 2005; Gempesaw, 2009), social convention (Granovetter, 1985) and national culture (Natlandsmyr and Rognes, 1995; Lane and Bachmann, 1996), as well as familiar commercial concepts such as asset specificity and uncertainty (Williamson, 1985; Klein, 1996).

There are many that contend that the creation of intentional trust (henceforth termed trust) within buyer-supplier relationships is eminently feasible and can then facilitate the above-mentioned lower transaction costs and increased value creation. The reasoning behind this is varied, but covers benign views about human nature (Ghoshal and Moran, 1996; Casey, 2003), the identification of national cultures that facilitate communitarian beliefs and actions (Schwartz, 1994; Lane and Bachmann, 1996), contentions that it is possible to both profit from and signal trustworthiness (Ugoji et al, 2007; Ethisphere, 2011) and arguments that stress the social obligations and confidence that arise out of repeated interactions (Gulati, 1995).

Beyond these ideas about the creation of trust are a number of related actions that are believed to enhance the potential for trust to be maintained over time. First, it is argued that managers within buying organisations should refrain from aggressive and controlling behaviour during pre-contractual negotiations. Such behaviour, it is argued, is likely to be counter-productive as it will encourage 'tit-for-tat' behaviour, something modelled by repeat games played under the rules of the prisoner's dilemma (Axelrod and Hamilton, 1981; Carlisle and Parker, 1989; Klijn and Tiesman, 2005).

Second, it is argued that managers from both parties should clearly communicate their 'interests', so that there is a reduced chance of misunderstandings and ill-feeling and, instead, a focus on promoting mutual gains, where possible (Kinnaird and Movius, 2008). As Hobbes observed over three centuries ago, aggressive actions are often not a product of wickedness but of fear and a lack of confidence in the benevolence of the stranger (Berki, 1977).

Third, some argue that formal contracts are incompatible with trust and should be avoided, where possible. Malhotra and Murnighan (2002, p. 553), for example, state that formal, binding contracts 'crowd out' trust as they affect an individual's 'underlying attributional processes'. A variant on this position is that it is not formal contracts, per se, that are incompatible with trust, but the manner in which they are framed (Bertrandias et al, 2010). Others agree with this latter position and argue that contract design should not be too restrictive and instead provide an opportunity for a supplier to innovate, again for mutual gain (Ford, 2001; Hughes and Rayer, 2009).

Fourth, it is said that managers from the two parties should adopt established trust-building, enhancing and maintenance techniques during the contractual period. These can include feedback loops (Huxham, 2003), reward schemes for when suppliers deliver a high level of performance (The Authors, 2007), supplier forums where the buyer and task-interdependent suppliers come together to discuss performance improvement ideas (Hines, 1994) and dispute resolution mechanisms to prevent inevitable disagreements from escalating and damaging the trust that has been built up (Office of Government Commerce, 2002).

Once trust has been developed, it is argued that it can be a mechanism for making contracts, which may already be of a 'general clause' or 'relational' type (Williamson, 1985; Macneil, 1978), self-enforcing. Suppliers deliver upon their promises and, where relevant, deal fairly with the consequences of uncertainty, because they feel a social obligation to do so (Granovetter, 1985; Nooteboom, 2002).

Others within this debate, however, are less optimistic. One view is taken by Williamson who rejects the usefulness of the concept of trust and believes instead that the economics of contracts should be based upon an assumption of supplier opportunism (Williamson, 1993). Others (for example, The Author et al, 2010) put forward a variation on this view and argue that, while trusting relationships can and do exist between buyers and suppliers and should form part of any economic analysis, a cautious approach to procurement and contract management is still required. This is because, even if you believe only a significant minority of suppliers are prone to opportunistic actions, it is hard to tell ex ante which those are (Williamson, 1993).

The concept of opportunism in economics is understood as self-interest seeking actions that go beyond the traditional neo-classical concept of simple self-interest seeking (Williamson, 1985). Milgrom and Roberts (1992) refer to it as self-interest seeking actions without the constraint of morality, although this is problematic due to the contested nature of ethics. These actions can either be blatant (for example, breaking a contract, confident that the other party has no wish or ability to use the courts) or subtle (for example, misleading, obfuscating or exaggerating) (Williamson, 1996).

Amongst those reasons cited for the existence of opportunism in business relationships, frailties in human nature (Williamson, 1985), individualistic national culture (Lane and Bachmann, 1996), adverse business circumstances (Nooteboom, 2002) and amoral business education (Ghoshal and Moran, 1996) feature prominently. As shall be shown below, opportunism is said to be a particular problem for buying organisations (the focus in this article) when contracts are complex, characterised by uncertainty and/or requiring of relationship-specific investments (Williamson, 1985).

In terms of how managers should cope with the existence of opportunistic intent in a significant minority of suppliers, a common view is that the two parties should contract formally in the first instance and then look to 'keep the contract in the drawer'. What this means is, first, contracting in the manner of Klein (1996) - that is, developing legal clauses where the absence of uncertainty makes it possible and developing private enforcement capital where the presence of uncertainty means it is not. Second, having done this, the term 'keeping the contract in the drawer' does not mean ignoring the contractual provisions, but rather translating them into a set of working procedures, understandings and expectations, which, if not met, will then see the legal specifics of the contract being reintroduced.

Where there is uncertainty, both parties will often work closely during the early parts of the contract period in order to fill some of the consequent contractual gaps. Argyres and Mayer (2007) call the ability to do this 'contract design capabilities' and believe that such capabilities should not be assumed on the part of buying organisations in the manner of Williamson (1996). Indeed, some have referred to such capabilities, when taken to a high level, as a potential source of sustainable competitive advantage

One thing that should be noted at this stage is that it is argued by those that adhere to this cautious approach (for example, Czerniawska and Smith, 2010) that, contrary to the arguments of, for example, Malhotra and Murnighan (2002), the best chance of developing a trusting relationship between a buyer and a supplier is by establishing at the outset a clear and detailed legal agreement. The reasoning behind this is that such an agreement reduces the scope for misunderstanding and reduces the fear of one party receiving the 'sucker's pay-off'. Furthermore, even when such an agreement does not promote trust, it still provides the basis for compliance. The idea of a

contract ‘crowding out’ trust is not recognised by this approach, not least as it is believed that managers respect the other party’s requirement for legal security, especially in the case of critical or high value contractual situations.

What has been alluded to above is that, in accordance with Williamson (1985), Anderson and Dekker (2005) and others, there is a need for management control structures that align to transaction characteristics. Fear of opportunism suggests caution in procurement and contract management. We argue that this cautious approach has five main aspects, presented in turn here but not necessarily sequential in practice. First, there is an extensive internal focus (The Authors, 2005). Where opportunism is feared, the need is heightened for buying organisations to agree a clear set of requirements and specifications, assiduously search the market and agree a ‘protocol’ for the organisation’s dealings with a supplier, i.e. which personnel are permitted to communicate with the supplier and in what respects (Hughes and Dickson, 2009). Opportunistic suppliers will often take advantage of those buying organisations that show weaknesses in these areas, by for example playing-off parts of the organisation against each other. The public sector has been identified as often possessing such weaknesses (The Authors, 2005; Green, 2010; National Audit Office, 2011).

Second, there is an emphasis in the procurement process on protection against opportunism, particularly in the case of purchases or projects that expose the buying organisation to commercial vulnerabilities such as the hold-up problem (Williamson, 1985; Gibbons, 2005), and problems of asymmetric information such as adverse selection and moral hazard (Milgrom and Roberts, 1992). The hold-up problem can be defined as a situation where a supplier refuses to continue to supply, or to supply at a particular level of performance, unless its increased demands are met. This threat can be credible in situations where the buyer’s ability to switch to alternative suppliers is constrained by either time or the relationship-specific investments it has made. The problem is particularly serious on those occasions when a contract is characterised by a significant degree of uncertainty as this will force a buying organisation to sign an incomplete contract, one that is completed through negotiations during the contract period. If the buyer’s ability to switch is constrained by its making of relationship-specific investments, it may well undertake those negotiations from a weak position

(The Author, 2005). This problem can be particularly acute in the public sector as vulnerability to hold-up is exacerbated by the need to undertake statutory duties.

Adverse selection is defined as a situation where, because of a lack of information, a buying organisation pays a price for a good or service that is based upon an erroneous belief about the quality of that good or service. In such a scenario, the supplier, of course, deliberately fails to address the buyer's lack of necessary information. Indeed, it might actually encourage a buyer misunderstanding. Finally, moral hazard is defined as a situation where a supplier underperforms in order to improve its profits on a contract, safe in the knowledge that the buyer is not able to monitor the underperformance. Two common types of moral hazard are shirking and quality shading (Milgrom and Roberts, 1992; The Authors, 2007).

The types of actions that, despite their cost, are deemed necessary to address these types of opportunism are many-fold. They include extensive research into the prices and past performance of suppliers, in order to prevent adverse selection, and detailed negotiation and contract drafting, in order to prevent hold-up and moral hazard. In terms of avoiding the latter two hazards, the contract might contain balancing provisions (for example, liquidated damages, property rights allocation, compete clauses for variations and exit arrangements) in an effort to prevent hold-up (Williamson, 1985; Grossman and Hart, 1986; The Author, 2005) and performance incentives in an effort to prevent moral hazard (Milgrom and Roberts, 1992). It has been argued that in the case of the development of balancing provisions, it helps for the buying organisation to have a degree of pre-contractual bargaining power (The Author, 2005). Otherwise, it is said that the supplier will often resist buyer efforts to balance the contract.

Third, it is recommended that the level of effort put into the procurement exercise is maintained into the contract management phase. The main element of this is monitoring, again to prevent moral hazard, and this runs in combination with the aforementioned incentive provisions within the contract (Baron and Besanko, 1987). Monitoring can either be very 'hands-on' or conducted on the basis of self-assessment and spot checks. Contract management can go beyond mere monitoring, however, as while proponents of this more cautious approach are sceptical about the development

of trust relations, this does not mean that they take the view that parties to a commercial exchange cannot work closely together to create additional value. Indeed, this is part of the inspiration for the aforementioned balancing provisions. It is said, though, that where buying organisations are looking to develop close working relations with a supplier they should tread very carefully. For example, they should select suppliers very carefully, avoiding where possible those that are very powerful. They should also be alert to the danger of asymmetrical 'lock-in' being developed during close working, which makes the buyer vulnerable to hold-up. Buying organisations are also advised not to mistake close working with trust.

The fourth aspect of the cautious approach is an active promotion of contingent renewal and reputation. Contingent renewal refers to a buyer communicating to a supplier that its likelihood of winning future contracts is dependent upon its current performance, either in terms of its competence or its general behaviour, and that future contracts are a genuine prospect (Bowles and Gintis, 1999). A buying organisation can also hope to benefit from a supplier's desire to maintain a good reputation in the marketplace. A lost reputation can lead to a supplier losing business opportunities or incurring additional costs as potential future customers request quality and reliability assurances (Klein, 1996).

The fifth aspect of the cautious approach concerns the threat of legal action. The use of the courts is well known to all procurement managers as a last resort. This is because taking a supplier to court incurs direct costs (legal fees) and indirect costs (a potential halt in supplier production), can permanently damage a relationship with a supplier, can take a long time to deliver benefits and, of course, can end in legal defeat (Office of Government Commerce, 2002). Nevertheless, on those occasions when supplier actions are believed to be both totally unacceptable and to have had a large-scale negative commercial impact, legal action is often deemed a necessary last resort. Of course, the courts do not have to be entered in order for their threat to have an effect on supplier behaviour. Ideally, what a buying organisation wants to be able to do, where opportunism is feared, is make the supplier believe that the threat of court action is a credible one (Messick, 2005).

To summarise, proponents of this more cautious approach do not deny that it imposes higher transaction costs on those buying organisations that adopt it. Nor do they deny that it will cause buying organisations sometimes to miss opportunities to develop fruitful, trusting relationships with suppliers that had no intention of exploiting any dependencies that might have arisen. However, they argue that these costs of the approach are outweighed by the benefits of lower levels of opportunism.

Having outlined the relevant part of the debate over procurement and contract management in the public sector, we now proceed to investigate how current procurement and contract management practice relates to this debate. In the next part of the article, we detail the methodology adopted to chart current practice.

Methodology

Sample details

The quantitative evidence used to conduct the investigation is from 180 responses to a cross-sectional questionnaire survey. The questionnaire asked respondents to classify a contract management situation in terms of the transaction characteristics, the procurement and contract management actions taken in the situation, and the outcome in terms of incidences of supplier opportunism. The research sample was constructed on the basis of convenience sampling, rather than being specifically intended to be representative of a wider population. Despite this, the respondents were spread across the public and private sectors (104 and 76 respondents respectively) and the contract management situations reported in the study were varied. Purchases were in the areas of telecoms and IT hardware/software, miscellaneous public and business services, commodities (oil, gas, minerals, etc), electrical equipment, print services, IT services, engineering services, automotive, defence and aerospace, management consultancy services, health services and construction. All of the suppliers covered by the survey were private sector, for-profit organizations. Different sized organizations were also represented. It is therefore suggested that the sample was a reasonably representative cross-section of business to business contract management situations.

The respondents were selected through their association with the authors' home institution; through, for example, conference or workshop attendance. As a

consequence, the response rate was high, at about 50%. The respondents were mainly middle managers, working in the procurement function. All of the respondents had been prominently involved in the contract management situation about which they were reporting.

As mentioned, the research sample included both public and private sector respondents. This allowed a public sector dummy variable to be included to assess differences in procurement and contract management practices and outcomes between the two sectors.

Having discussed the source of the data, we now turn to an explanation of the data measures.

Independent variable measures and scale development

Williamson (1985) and Milgrom and Roberts (1992) identify five characteristics of transactions that give rise to information asymmetries and opportunistic hazards: uncertainty in assessing performance; infrequency of transacting; investments in transaction-specific assets (e.g., human or physical capital); task complexity; and, interdependencies with other transactions. Anderson and Dekker (2005) posit that for a given legal setting and given ex ante contracting costs, inter-organizational management control structures should be designed in response to transaction characteristics. They further hypothesize that misalignment between the transaction context and the control structure is associated with subsequent transaction problems.

This study follows the Anderson and Dekker (2005) logic. The first task, therefore, is to describe how we measured the latent independent variables of transaction characteristics and the competitive environment. A statistical description of each of the six independent variables considered in this study is provided in Table A (Panel A), which is included in Appendix A. The content of the questionnaire is in Appendix B.

Transaction importance

Buying organisations are potentially vulnerable to supplier opportunism when what they are buying is strategically and/or operationally important. This is partly because

they are likely to be in a position where, one way or another, they have to make a purchase of a particular good or service and see through the contractual period. They are not in a position where, if terms are not to their liking, they can choose not to buy. We use two indicators, *opeimp* (Q1) and *strimp* (Q2), to measure this transaction characteristic.

Competition and market power

The intensity of competition in the supplier's product market at the time that the transaction is initiated, which indicates the power of a supplier over its customers, is a force that potentially reduces the risk of opportunism. It was hypothesized that more powerful suppliers, facing less intense competitive pressure, would be more prone to opportunistic behaviour (The Authors, 2000). Buyer-supplier power across the 180 contract management situations was measured using the indicator *market* (Q4). Respondents were asked to reply within a continuum that varied from "*a highly dependent supplier*" to "*a highly dominant supplier*". The contract management situations in our survey showed a range of power relationships.

Uncertainty

Uncertainty reflects the difficulty of defining ex ante the products and services for which the parties are contracting. The argument here is that uncertainty leads to contractual incompleteness and greater vulnerability to potential supplier opportunism. We used two survey questions as indicators of this latent construct to describe the ex ante uncertainty of the contract: *noenvcon* (Q5) and *nocomcon* (Q6). Respondents were required to report within a continuum that concerned the extent to which future contingencies were foreseeable.

Sunk costs (transaction-specific investments)

Transaction-specific investments create potential exposure of the transacting parties to ex post opportunistic hold-up. This term refers to significant investments in human or physical assets that have little or no value outside of a particular transaction. As indicators of the latent variable, asset specificity, we used two questions related to the magnitude of losses that the buyer would sustain in the event that the relationship ended. These questions referred to sunk cost investments in physical equipment, *invphy* (Q10), and in training or competence development, *invtrain* (Q11).

Task complexity

Task complexity creates the potential for opportunism by introducing ambiguity about the causes of transaction failure, which in turn makes it difficult to apportion responsibility to the transacting parties. Complexity is common when both parties to a transaction contribute complex components or services that interact in unpredictable ways to produce the desired final product or service. This is sometimes called co-production. We used the transaction type and the type of agreement to measure task complexity. The transaction type was measured by the indicator *service*, with goods as 0 and services as 1. The type of agreement was measured by the indicator *dpl* (Q26), with fixed price agreements as 0, and flexible price agreements and other more complicated payment mechanisms as 1. We assume that task complexity is greater with service type transactions and where flexible or complicated payment mechanisms are used.

Interdependencies with other transactions

We used two indicators, *perfresulta* (Q36) and *perfresultb* (Q37), to measure the latent variable of interdependencies with other transactions. This concerns the impact of a supplier's failure to perform acceptably on its ability to win new business, both within the buying organisation and in the industry in general. The argument here is that transactions with high levels of interdependency will present buyers with a lower risk of opportunism than those with low levels.

Dependent variable measures and scale development

The following sections describe the measures and scale-development procedures for the dependent variables: management control mechanisms and problems of supplier opportunism.

Common factor analysis (CFA) of the management control mechanisms

In the questionnaire survey, sixteen management control mechanisms were included as potential factors that could restrain supplier opportunism. These covered the areas of pre-contract management, procurement actions, reputation effects and legal action. The questions that covered these mechanisms may have been subject to measurement errors and will also inevitably be correlated to each other. To address these risks, we used common factor analysis to obtain four common factors. These are as follows:

Factor 1: Pre-contract management index: *preconmanidx* (higher values = more control)
Factor 2: Procurement actions index: *paidx* (higher values = more control effort)
Factor 3: Reputation effects index: *repidx* (higher values = more track record)
Factor 4: Credibility of legal threat index: *ltcredidx* (higher values = more credible legal threat)

In order to keep the common factors consistent with the original 0 to 10 scales used for the separate variables in the survey, they were rescaled with a mean of 5 and a standard deviation of 2.

The first common factor, pre-contract management index, mainly loads on variables relating to the framing of the agreement. Key questions here concern the extent to which the internal client and the supplier have a clear idea of the buying organisation's procurement requirements. The indicators used were *clearidea* (Q15), *procurepro* (Q16), *comptension* (Q17), *suppliercleara* (Q18), *supplierclearb* (Q19) and *supmonitor* (Q24). Higher values represent a well developed understanding of the procurement requirement.

The second factor, procurement actions index, loads on variables concerned with the time and effort required to research, negotiate, design and draft the contract. The indicators used were *searsup* (Q21), *negterms* (Q22) and *dedrcon* (Q23). Higher values indicate that more effort is being expended in these procurement actions.

The third factor, labelled reputation effects index, concerns the extent to which the supplier's reputation is known by the buyer. The indicators used were *repuexpa* (Q34) and *repuexpb* (Q35). Higher values indicate that the supplier is well known by the buyer and more generally within the industry.

The fourth factor, credibility of legal threat index, loads on items related to the credibility of legal threats to the supplier. The relevant variables are: the chance of winning a legal case (*lowwin,* Q49); potential damage to the supplier relationship (*reladamage,* Q50); the impact on operational performance of a prolonged legal

dispute (*operadamage,* Q51); the financial cost of a legal dispute (*financost,* Q52); and the size of any potential legal payout (*lowpay*, Q53). The way these questions were asked means that higher values suggest a more credible legal threat.

Descriptive statistics of these four management indices are presented in Table A (Panel B) in Appendix A.

Incidence of opportunistic behaviour

Panel C in Table A contains the main dependent variables to measure opportunistic behaviours by suppliers. These are adverse selection (*AS*), moral hazard (*MH*), pre-contractual hold-up (*HU1)* and post-contractual hold-up (*HU2*). These concepts were discussed earlier in the article. All variables are measured in a range from 0 to 10, with a high score reflecting a higher level of opportunism. It is important to note here that there is no expectation that all of the independent variables relating to the characteristics of the transaction will cause a rise in the level of all four of these opportunistic behaviours. This is because certain problems of opportunism are understood in the literature as being associated only with certain transactional characteristics.

The incidence of adverse selection (*AS*) was measured by a question about whether the product or service lived up to the ex ante promises made by the supplier (Q30). The question examining moral hazard (*MH*) asked whether, following the signing of the contract, the supplier consistently came up short in terms of effort (Q32). Two hold-up variables (*HU1* and *HU2*) were also explored. *HU1* was measured by a question asking whether, between winning the competitive tender and signing the contract, the supplier attempted to revise and renegotiate the terms of the deal (Q31). Evidence of *HU2* was gleaned by asking whether, following the contract signing, the supplier attempted to revise and renegotiate the terms or take advantage of contract variations (Q33).

Based on the descriptive statistics presented in Table A we can see that supplier opportunism, especially in the form of moral hazard, is a widely observed phenomenon in our research sample, although it does not occur in the majority of cases. Therefore, there does seem to be some evidence to support consideration of a

cautious approach to procurement and contract management. Contracts are by no means always self-enforcing.

Specification and Results

This research is trying to ascertain whether various buyer-side management control mechanisms are effective at restraining supplier opportunism, when the transaction characteristics make opportunism a possibility. Three hypotheses, illustrated in Figure 1, were tested in pursuit of this research objective. We undertook the tests using structural equation modelling (SEM) and LISREL 8.8 (Jöreskog and Sörbom, 2006).[i]

Figure 1 here

The first hypothesis, concerning the relationship between transaction characteristics and management control mechanisms, posits that the more hazardous a transaction, the less extensive and therefore effective the use of management control mechanisms will be. Secondly, we propose a hypothesis linking management control mechanisms and incidences of supplier opportunism. We test the argument that increases in the extent and effectiveness of management control mechanisms will reduce incidences of supplier opportunism. Finally, we test a hypothesis concerning the relationship between transaction characteristics and supplier opportunism, both with and without the intervening variable of management control mechanisms. This was done to enable us to identify if management control mechanisms have any meaningful impact on supplier opportunism. We test the argument that more hazardous transaction characteristics will lead to increased incidences of supplier opportunism, but that this outcome will be influenced by the effectiveness with which management control mechanisms are used.

Relationships between transaction characteristics and management control mechanisms

Table 1 presents the results of our test of hypothesis 1.

Table 1 here

Our results show that transactions characterised by uncertainty are significantly associated with less extensive management control, especially pre-contract

management (-0.6) and reputation effects (-0.53). This suggests, first, that where a transaction is uncertain both internal clients and suppliers find it more difficult to develop a clear understanding of the procurement requirement, and second, that where there is uncertainty a supplier's reputation is less meaningful as an indication of its likely future conduct. Our results also show negative, although not statistically significant, associations between transaction uncertainty and procurement actions (-1.23), and between uncertainty and the credibility of legal threats (-0.14). This provides limited support for the argument that the extent of management control efforts in these two dimensions will be lessened by the presence of uncertainty. As Williamson (1985) argues, uncertainty leads to incomplete contracting and puts greater emphasis on the need to develop private (non-contractual) governance arrangements to control supplier opportunism.

We also find significant negative associations between sunk costs incurred by the buying organisation and the extent of management control through pre-contract management (-0.69) and credible legal threats (-0.53). These findings suggest that where a transaction requires a buyer to make substantial relationship-specific investments, which lead to buyer lock-in (The Author, 2005), less effort is expended ex ante in developing a clear understanding of the procurement requirement and legal threats are seen as less credible. One interpretation of these findings is to see the buyer's willingness to invest in relationship-specific assets as a sign of its commitment to work closely with the supplier over an extended period of time, and to rely more on informal relational governance arrangements developed ex post than on a detailed, legally enforceable contract designed ex ante.

Our results also show a significant negative association between the level of transaction interdependencies and a reliance on reputation effects to control supplier behaviour (-0.98). This suggests that when a supplier's ability to win future business is heavily dependent on its performance in current contracts, the buyer will be less concerned with examining the supplier's reputation more generally. Task complexity, on the other hand, is positively associated with management control through reputation effects (0.41). This suggests that where transactions involve the delivery of complex services, which are inherently difficult to specify in full detail ex ante, and where supplier performance is difficult to monitor and measure ex post, the buyer is

forced to rely on a supplier's reputation for fair dealing rather than using more formal, contractual control mechanisms.

Finally, while it is perhaps a little surprising that the findings show no significant associations between the use of management control mechanisms and transaction importance, competition and market power, and the public dummy variable, the whole structural equation model exhibits a good fit (Fan et al., 1999; Hu and Bentler; 1999). This applies across a wide range of fit statistics, including but not limited to those reported. [ii] Consequently, we conclude that there is strong evidence that the characteristics of transactions are related to the use of management control mechanisms in line with our first hypothesis. That is, the more hazardous a transaction, the less extensive and therefore effective the use of management control mechanisms will be.

Relationships between transaction characteristics, management control mechanisms and supplier opportunism

Table 2 reports the findings from our test of hypothesis 2 (Panel B) and hypothesis 3 (Panels C and D). To recap: hypothesis 2 proposes that increases in the extent and effectiveness of management control mechanisms will reduce incidences of supplier opportunism; hypothesis 3 proposes that more hazardous transaction characteristics will lead to increased incidences of supplier opportunism, but that this outcome will be impacted by the effectiveness with which management control mechanisms are used. Table 2 (Panel A) also reports the findings of an alternative test of hypothesis 1, which links transaction characteristics and the use of management control mechanisms in this more complicated model.

Table 2 here

Panel A results

The results presented in Table 2 (Panel A) are in many respects consistent with what we find in the single equation model reported in Table 1, but they produce more efficient estimations for our coefficients. Hence, we find that the relationships between transaction characteristics and the use of management control mechanisms have become more prominent.

As in Table 1, our results show that transactions characterised by uncertainty are significantly associated with less extensive management control through pre-contract management (-0.59) and reputation effects (-0.51). We also again find a negative association between transaction uncertainty and procurement actions, but this has now become statistically significant (-0.92). As before, more investment in sunk cost is associated with less effort in pre-contract management (-0.7) and with a less credible legal threat (-0.54). We find the same significant negative association between the level of transaction interdependencies and a reliance on reputation effects to control supplier behaviour (-0.98), but this time we also see significant evidence of lower effort being put into procurement actions (-0.9) as interdependencies increase. Task complexity is once again positively associated with management control through reputation effects (0.41). We also now see evidence of a significant positive association between complexity and the effort put into procurement actions (2.72). As before, we find no evidence of significant associations between the use of management control mechanisms and transaction importance, competition and market power, and the public dummy variable.

Panel B results

Panel B presents the results of our test of hypothesis 2, which proposes that increases in the extent and effectiveness of management control mechanisms will reduce incidences of supplier opportunism. Our evidence is broadly supportive of this hypothesis. We find that a credible legal threat is significantly associated with a reduced incidence of two of the four supplier opportunism problems, adverse selection (AS, -0.12) and post-contractual hold-up (HU2, -0.15). In the use of pre-contract management and reputation effects, we find the same significantly negative association. A more extensive use of pre-contract management is significantly associated with fewer problems of adverse selection (AS, -0.13), pre-contract hold-up (HU1, -0.22) and post-contract hold-up (HU2, -0.15). Our evidence shows that a reliance on reputation effects can alleviate all four opportunistic behaviours: adverse selection (AS, -0.3); moral hazard (MH, -0.4); pre-contractual hold-up (HU1, -0.3); and post-contractual hold-up (HU2, -0.36). The results for the procurement actions index have big values and show the expected effect – more control effort decreases opportunism – but they are not statistically significant. This is perhaps because this index is highly correlated with the other three management indices.

Panel C and D results

The results of our test of hypothesis 3 are presented in Panels C and D. This hypothesis concerns the relationship between transaction characteristics and supplier opportunism, both without the intervening variable of management control mechanisms (the structural form) and with the intervening variable (the reduced form). We test the argument that more hazardous transaction characteristics will lead to increased incidences of supplier opportunism, but that this outcome will be influenced by the effectiveness with which management control mechanisms are used.

In the structural form (Panel C), our findings are broadly supportive of the argument that increased transactional hazards will lead to increased incidences of opportunism, but none of the results are statistically significant. The effects of transaction characteristics on opportunism become much more significant when we look at the reduced form of our model (Panel D). This suggests, as we propose, that the effectiveness with which management control mechanisms are used has an important impact on opportunism.

As Williamson (1985) suggests, we find that opportunism is a particular problem for buying organisations when transactions are characterised by high uncertainty, asset specificity (sunk cost) and task complexity. The results show a significant positive association between a high level of uncertainty and adverse selection (AS, 0.63), and between uncertainty and moral hazard (MH, 0.66). Similarly, a high level of sunk cost investment is significantly associated with the problem of moral hazard (MH, 0.55), and greater task complexity increases the incidence of post-contractual hold-up (HU2, 1.04). Our results also show a significant negative association between the level of transaction interdependencies – the impact of current performance on a supplier's chances of winning future contracts – and the incidence of post-contractual hold-up (HU2, -0.53). Finally, although we find no significant association between any of the four kinds of supplier opportunism and transaction importance, competition and market power, and the public dummy variable, the whole structural equation model does exhibit a good fit across a wide range of fit statistics.[iii]

Conclusion

In this article, we have provided a data set about current procurement and contract management practice. Using data from 180 contract management situations, 104 of them in the public sector, we assessed whether there is a higher incidence of opportunistic behaviour in certain transactional circumstances and whether certain types of procurement and contract management actions reduce that incidence. We also assessed whether there are significant differences between the public sector and private sector in these respects. The evidence, although at times contradictory, was broadly supportive of the view that opportunism is a significant risk in business to business markets and that certain procurement and contract management actions can assist organisations in addressing that risk. The evidence found no significant differences between public and private sector experiences. We summarize our key findings below.

The descriptive evidence presented in Table A confirms that not all buyer-supplier contracts are self-enforcing. Our findings reveal particular problems with moral hazard. The other two types of opportunistic behaviour, adverse selection and hold-up, were not as commonly experienced by those questioned, but overall the evidence suggests that the risk of supplier opportunism is a significant one and that the less optimistic voices in the literature have some justification in highlighting the concept.

Moving on to the results of our structural equation modelling, we can make a number of broad observations about the relationships between transactional characteristics, the use of management control mechanisms and the incidence of different types of supplier opportunism. First, we found that transactions characterized by a greater degree of hazard, for example high uncertainty, high sunk cost and significant task complexity, tended to be associated with a less extensive use of management control mechanisms. We found no statistically significant evidence of a marked difference in these associations between our public and private sector respondents.

Second, our evidence showed that increased and more effective usage of management control mechanisms tended to reduce incidences of supplier opportunism. Supplier reputation effects had the broadest impact, with the evidence showing a significant negative association across all four types of opportunism. Pre-contract management

and credible legal threats had a significant impact in reducing adverse selection and hold-up. The message is that supplier opportunism, while a significant problem, can be addressed through an assiduous procurement and contract management process.

Third, we found that transactions characterized by a greater degree of hazard, in particular high uncertainty, high sunk cost and high task complexity, were associated with a greater incidence of supplier opportunism. Adverse selection and moral hazard were the most prominent problems. These positive associations were only statistically significant, however, when modelled with the intervening variable of management control mechanisms. This suggests that the degree to which supplier opportunism is a problem is heavily influenced by the extent and effectiveness of procurement and contract management practice, which reinforces the point made above. Again, we found no evidence of a significant difference in these associations between our public and private sector respondents.

In terms of the broader implications of these findings, these can be identified for public policy-makers, managers and academics. For policy-makers and managers, the evidence is a reminder that supplier behaviour is highly variable and that the price of poor judgement is potentially very high. Our evidence suggests that supplier opportunism is a problem for buyers in both public and private sector organizations when dealing with private sector, for-profit suppliers. We could speculate as to whether the evidence might have been different had our survey covered third sector, not for-profit suppliers, but this remains a question for further research. Our evidence is also a reminder to take with a pinch of salt those clichés, so often heard at conferences and seminars, which contend that success in procurement and contract management is about trusting relationships and not about contracts. Assiduous procurement and contract management, according to this study, can allow supplier opportunism to be addressed, at least in part.

For the academic literature, this article confirms that while the concept of opportunism is an uncomfortable and regrettable one, it is not one that can be ignored by those interested in procurement and contract management, including that undertaken within the public sector. The evidence presented here suggests that supplier opportunism is most likely to be a problem in just the kind of complex,

uncertain and involved contractual situations into which governments are increasingly entering. The evidence also suggests that the clarity with which the threat of opportunism is addressed by governments through various types of management control mechanism will have a considerable impact upon their success in such situations. Public management academics have an important role to play in assisting with the development of such clarity.

Figure 1: Research Map: Diagram of the Relations Estimated between Transaction Characteristics, Management Control Mechanisms and Subsequent Performance (with references to the tables in which the results are presented)

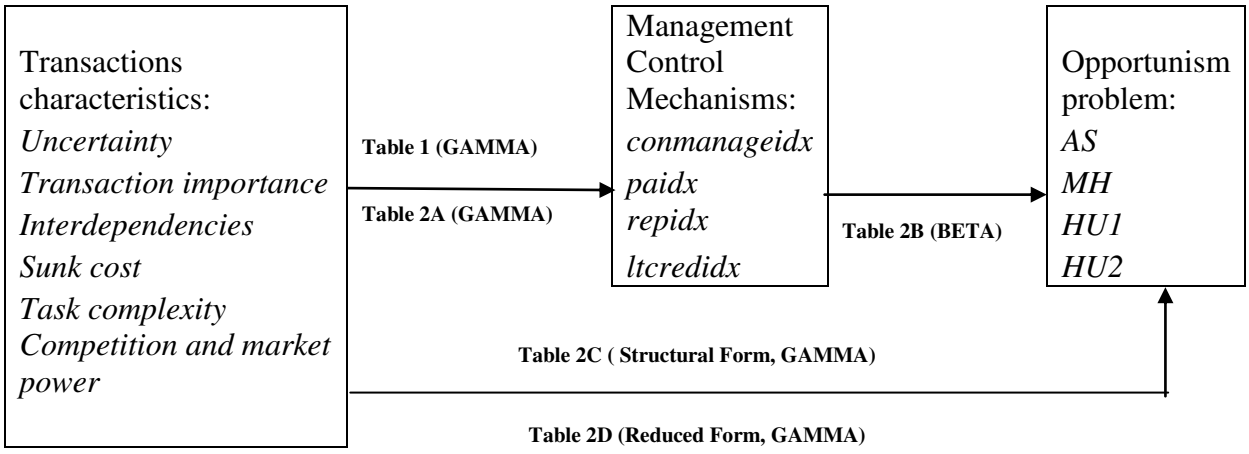

Table 1 The Relation Between Transaction Characteristics and Contract Management (GAMMA)

	conmanageidx	***paidx***	***repidx***	***ltcredidx***
Uncertainty	-0.60***	-1.23	-0.53***	-0.14
	(0.18)	***(1.6)***	***(0.19)***	***(0.18)***
Transaction importance	0.2	-0.1	0.25	-0.25
	(0.2)	***(0.92)***	***(0.21)***	***(0.2)***
Interdependencies	-0.03	-1.14	-0.98***	0.04
	(0.18)	***(1.64)***	***(0.2)***	***(0.18)***
Sunk cost	-0.69***	-0.81	-0.23	-0.53***
	(0.2)	***(1.82)***	***(0.21)***	***(0.21)***
Task complexity	0.15	3.24	0.41*	-0.14
	(0.23)	***(3.2)***	***(0.25)***	***(0.23)***
Competition and market power	-0.07	0.19	-0.04	-0.14
	(0.09)	***(0.39)***	***(0.1)***	***(0.09)***
Public	-0.18	-0.25	-0.41	0.17
	(0.29)	***(1.07)***	***(0.31)***	***(0.3)***
Degrees of freedom	61			
Chi-square (min.fit)	112.37 (p=0.00)			
RMSEA	0.063			
SRMR	0.048			
GFI (AGFI)	0.93 (0.85)			
NNFI	0.86			
CFI	0.93			

Notes: Each cell reports the maximum likelihood coefficient and the estimates of standard errors (in parentheses). ***, **, * indicate a p value of ≤ 0.01, 0.05, 0.10 in a two-tailed test.

Table 2 The Relation Between Transaction Characteristics, Contract management and ex post problem

Panel A. The Relation Between Transaction Characteristics and Contract management (GAMMA)

	conmanageidx	*paidx*	*repidx*	*ltcredidx*
Uncertainty	-0.59***	-0.92*	-0.51***	-0.08
	(0.18)	***(0.51)***	***(0.18)***	***(0.18)***
Transaction importance	0.19	0.01	0.24	-0.26
	(0.19)	***(0.55)***	***(0.2)***	***(0.19)***
Interdependencies	-0.03	-0.9*	-0.98***	0.03
	(0.18)	***(0.53)***	***(0.2)***	***(0.18)***
Sunk cost	-0.7***	-0.59	-0.23	-0.54**
	(0.21)	***(0.59)***	***(0.21)***	***(0.21)***
Task complexity	0.16	2.72***	0.41*	-0.13
	(0.22)	***(0.55)***	***(0.23)***	***(0.23)***
Competition and market power	-0.07	0.13	-0.05	-0.15
	(0.09)	***(0.27)***	***(0.1)***	***(0.09)***
Public	-0.18	0.01	-0.37	0.2
	(0.29)	***(0.85)***	***(0.31)***	***(0.3)***

Panel B. The Relation Between Contract management and ex post problem (BETA)

	AS	*MH*	*HU1*	*HU2*
ltcredidx	-0.12*	0.03	-0.1	-0.15*
	(0.08)	***(0.09)***	***(0.08)***	***(0.08)***
paidx	-2.68	-2.66	-3.92	-3.13
	(3.38)	***(3.36)***	***(5.28)***	***(4.42)***
conmanageidx	-0.13*	0	-0.22***	-0.3***
	(0.09)	***(0.1)***	***(0.09)***	***(0.08)***
repidx	-0.3***	-0.4***	-0.3***	-0.36***
	(0.09)	***(0.1)***	***(0.09)***	***(0.09)***

Panel C. The Relation Between Transaction Characteristics and ex post problem (Structural Form, GAMMA)

	AS	*MH*	*HU1*	*HU2*
Uncertainty	-2.08	-1.98	-4.16	-3.41
	(3.41)	***(3.39)***	***(5.33)***	***(4.46)***
Transaction importance	-0.1	0.11	0.27	-0.02
	(1.52)	***(1.51)***	***(2.37)***	***(1.99)***
Interdependencies	-2.52	-2.91	-4.01	-3.69
	(3.35)	***(3.33)***	***(5.23)***	***(4.38)***
Sunk cost	-1.55	-1.09	-2.61	-2.36
	(2.55)	***(2.54)***	***(3.98)***	***(3.34)***
Task complexity	7.46	7.4	11.68	9.78
	(9.34)	***(9.29)***	***(14.6)***	***(12.22)***
Competition and market power	0.27	0.37	0.39	0.27

	(0.87)	***(0.87)***	***(1.36)***	***(1.14)***
Public	0.07	-0.25	-0.06	0.09
	(2.34)	***(2.33)***	***(3.65)***	***(3.06)***

Panel D. The Relation Between Transaction Characteristics and ex post problem (Reduced Form, GAMMA)

	AS	***MH***	***HU1***	***HU2***
Uncertainty	0.63***	0.66***	-0.27	-0.16
	(0.24)	***(0.26)***	***(0.31)***	***(0.31)***
Transaction importance	-0.2	-0.03	0.14	-0.16
	(0.22)	***(0.25)***	***(0.27)***	***(0.3)***
Interdependencies	0.18	-0.13	-0.19	-0.53*
	(0.25)	***(0.27)***	***(0.33)***	***(0.33)***
Sunk cost	0.25	0.55*	-0.04	-0.16
	(0.28)	***(0.31)***	***(0.38)***	***(0.37)***
Task complexity	-0.01	0	0.83	1.04*
	(0.46)	***(0.47)***	***(0.63)***	***(0.54)***
Competition and market power	-0.05	0.03	-0.09	-0.1
	(0.1)	***(0.12)***	***(0.13)***	***(0.14)***
Public	0.15	-0.12	0.03	0.21
	(0.32)	***(0.37)***	***(0.4)***	***(0.45)***
Degrees of freedom	87			
Chi-square (min.fit)	148.16 (p=0.00)			
RMSEA	0.057			
SRMR	0.045			
GFI (AGFI)	0.93 (0.83)			
NNFI	0.88			
CFI	0.95			

Notes: Each cell reports the maximum likelihood coefficient and the estimates of standard errors (in parentheses). ***, **, * indicate a p value of ≤ 0.01, 0.05, 0.10 in a two-tailed test.

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Appendix A

Table A Descriptive Statistics for Data Used to Construct Measures of Independent and Dependent Variables (N= 180)

	Mean	SD	Min	Max	Skewness	Kurtosis
Panel A. Independent variables:						
Transaction importance						
The operational importance of the transaction to the organisation?(***opeimp***): 0=None, 10=critical	8.3	1.7	0	10	-1.6	6.3
The strategic importance of the transaction to the organisation? (***strimp***): 0=None, 10=critical	7.5	2.7	0	10	-1.1	3.2
Competition and market power						
The market in which you were operating(***market***): 0=A highly dependent supplier, 10=A highly dominant supplier (monopoly)	4.7	1.9	1	10	0.5	2.9
Uncertainty						
Difficulty of envisaging all future contingencies (***noenvcon***): 0=fully foreseeable, 10=in the dark	4.6	2.0	0	9	-0.3	2.6
Difficulty of a common understanding of future contingencies (***nocomcon***): 0=fully foreseeable, 10=in the dark	4.5	2.0	0	9	-0.2	2.5
Investments in transaction-specific assets						
Investments in physical equipment (***invphy***): 0=None, 10=significant, non-Re-deployable investments	4.7	2.8	0	10	-0.2	2.1
Investments in training or competence development (***invtrain***): 0=None, 10=significant, non-Re-deployable investments	4.4	2.6	0	10	0.0	2.4
Task complexity						
Transaction type (***service***) : 0=goods, 1=services	0.6	0.5	0	1	-0.4	1.2
On what basis was the deal priced? (***dp1***): 0=Fixed Price Agreement; 1=Flexible Price Agreement, Flexible Price with Maximum Threshold, Cost Plus Agreement; Target Cost Incentive Fee (With No Maximum Threshold) Agreement ; Target Cost Incentive Fee (With Maximum Threshold) Agreement, Other;	0.7	0.5	0	1	-0.8	1.6
Interdependencies with other transactions						
Failure for it to perform adequately on this contract would mean that the supplier would not be	5.9	2.5	0	10	-0.4	2.6

used again by your internal client (***perfrea***): 0=Irrespective of performance, the supplier knew it would be re-used, 10=The supplier would have to 'delight' everybody in order to secure new business Failure for it to perform adequately on this contract would mean that the supplier would not be used again by your whole organisation(***perfreb***): 0=Irrespective of performance, the supplier knew it would be re-used, 10=The supplier would have to 'delight' everybody in order to secure new business	5.9	2.4	0	10	-0.5	2.9
Other control variable						
Public sector dummy: 0= private; 1=public	0.6	0.5	0	1	-0.3	1.1
Panel B. Dependent variables (management control mechanisms)						
Pre-contract management index: ***preconmanidx*** (higher values = more control)	5.0	2.0	-2.1	9.3	-0.5	3.8
Procurement actions index: ***paidx*** (higher values = more control effort)	5.0	2.0	0.3	8.8	-0.2	2.5
Reputation management index: ***repidx*** (higher values= more track record)	5.0	2.0	0.5	8.1	-0.6	2.6
Credibility of legal threat index: ***ltcredidx*** (higher values= more credible legal threat)	5.0	2.0	-0.7	12.2	0.4	5.4
Panel C. Dependent variables (supplier opportunism)						
Adverse selection (AS):						
The product/service in question lived up to the ex ante promises made by the supplier: 0=completely fit; 10= in no way met with our expectation/supplier's promises	3.0	2.2	0	10	1.0	3.8
Moral hazard (MH):						
Following the signing of the contract, the supplier consistently came up short in terms of effort: 0=The supplier always tried to delight us; 10=The supplier only ever did what it absolutely had to	4.6	2.5	0	10	0.4	2.5
Hold-up (HU):						
Between winning the competition and signing the contract, the supplier attempted to revise and renegotiate the terms (HU1) : 0= What was signed was what was delivered; 10=The supplier systematically went about trying to improve the profitability of the deal	2.8	2.1	0	10	1.1	4.4
Following the signing of the contract, the supplier attempted to revise and renegotiate the terms (HU2): 0= What was signed was what was delivered; 10=The supplier systematically went about trying to improve the profitability of the deal	2.9	2.2	0	10	1.0	3.9

Appendix B - Questionnaire

For reasons of space, this is an abridged version of the questionnaire. The full version is available from the authors upon request.

1. How would you rate the operational importance of the transaction to the organisation?
2. How would you rate the strategic importance of the transaction to the organisation?
3. How would you rate the political sensitivities of the transaction within the organisation?
4. Which of the following best describe the market in which you were operating: a highly dependent supplier; a highly competitive market; a mutually dependent environment; a strongly dominant supplier; a highly dominant supplier (monopoly)?
5. Prior to the agreement 'all future contingencies fully foreseeable' to 'everybody was pretty much operating in the dark'.
6. Prior to the agreement a common understanding of the possible nature of future contingencies: 'all future contingencies fully foreseeable' to 'everybody was pretty much operating in the dark'.
7. Prior to the agreement a common and complete understanding of the appropriate adaptations: 'all future contingencies fully foreseeable' to 'everybody was pretty much operating in the dark'.
8. Subsequent to the agreement, agreement over contingent events: 'all future contingencies fully foreseeable' to 'everybody was pretty much operating in the dark'.
9. Subsequent to the agreement, agreement over which adaptations to the realised contingencies corresponded to those specified in the contract: 'all future contingencies fully foreseeable' to 'everybody was pretty much operating in the dark'.
10. The transaction required you or your supplier to make investments in physical equipment, which should the relationship terminate prematurely, would have to be written-off: 'no such investments' to 'significant levels of such investments'.
11. The transaction required you or your supplier to make investments in training, which should the relationship terminate prematurely, would have to be written-off: 'no such investments' to 'significant levels of such investments'.
12. The transaction required considerable reputational investment: 'no reputational investments' to 'potential to be career destroying'.
13. Should the transaction terminate prematurely, there were no readily available alternatives: 'many' to 'none'.
14. The premature termination of the relationship would lead to a time-consuming and costly re-tendering: 'no costs' to 'costs of finding alternative make option unrealistic'.
15. Internal client idea of what required from supplier: 'clearly understood specification' to 'no understanding of what was required'.
16. The procurement process and researching the requirements of the organisation: 'went to market prematurely' to 'procurement process well structured and systematic'.

17. Organisation maintained competitive tension up to the moment the agreement was signed: ‘supplier had no idea it would win the business’ to ‘supplier new from outset it would win’.
18. The supplier ‘had a clear of what it was our organisation required’ to ‘supplier had no understanding’.
19. The supplier ‘had a clear idea of its ability to meet our organisation’s requirements’ to ‘supplier clearly had no capability’.
20. Prior to signing the agreement, ‘consideration was given to internal provision’ to ‘internal supply was a non-option’.
21. Prior to signing the agreement, ‘considerable time and effort was spent researching price and performance attributes of different suppliers’ to ‘performance attributes not discernible, even after purchase’.
22. Prior to signing the agreement, time and effort required to negotiate terms: ‘no effort required’ to ‘the negotiation process took months’.
23. Time and effort required to design and draw up the contract: ‘no effort required’ to ‘the process took months’.
24. The supplier ‘was carefully monitored’ to ‘no effort to monitor performance made’.
25. Time and effort enforcing and (where necessary) renegotiating the agreement: ‘no effort required’ to ‘the relationship was reduced to a battleground’.
26. On what basis was the deal based: fixed price; flexible price; flexible with thresholds; cost plus; target cost with incentive?
27. Which of the following behaviours most accurately reflects your experience of the supplier: ‘a partner whose promises were always kept’ to ‘supplier systematically set out to cheat my organisation’?
28. Which of the following behaviours describe the level of conflict: ‘the relationship progressed smoothly’ to ‘the relationship broke down completely, leading to legal action’?
29. Agreement controlling expectations on price: ‘price met our expectations’ to ‘we completely lost control of costs’.
30. Supplier’s product or service living up to promises: ‘completely fit for purpose’ to ‘supply effort in no way met our expectations / supplier’s promises’.
31. Between agreeing deal and signing contract: ‘what was signed was what was delivered’ to ‘supplier systematically sought to improve profitability of the deal’.
32. Supplier effort: ‘supplier always tried to delight us’ to ‘supplier only did what it had to’.
33. Following the signing of the contract, ‘what was signed was what was delivered’ to ‘supplier systematically sought to improve profitability of the deal’.
34. Past experience of the supplier’s trustworthiness: ‘good or bad, supplier had an extensive track record’ to ‘transaction represented first contact’.
35. Supplier reputation in the industry: ‘good or bad, everyone knows this supplier to ‘no track record people were aware of’.
36. Performance and future use by internal client: ‘irrespective of performance, supplier knew it would be re-used’ to ‘supplier would have to delight to secure new business’.
37. Performance and future use by organisation as a whole: ‘irrespective of performance, supplier knew it would be re-used’ to ‘supplier would have to delight to secure new business’.

38. Performance and future chances in industry: ‘irrespective of performance, supplier knew it would not lose business elsewhere’ to ‘failure to perform on this contract would destroy reputation in industry’.
39. Deliberate attempts by my organisation to improve deal and dispute resolution: ‘this was not a factor’ to ‘this made settlement impossible’.
40. Deliberate attempts by the supplier to improve deal and dispute resolution: ‘this was not a factor’ to ‘this made settlement impossible’.
41. Stalling tactics by my organisation and dispute resolution: ‘this was not a factor’ to ‘this made settlement impossible’.
42. Stalling tactics by the supplier and dispute resolution: ‘this was not a factor’ to ‘this made settlement impossible’.
43. The lack of any obvious settlement point, acceptable to my organisation, and dispute resolution: ‘this was not a factor’ to ‘this made settlement impossible’.
44. The lack of any obvious settlement point, acceptable to the supplier, and dispute resolution: ‘this was not a factor’ to ‘this made settlement impossible’.
45. Poor communication and misunderstanding and dispute resolution: ‘this was not a factor’ to ‘this made settlement impossible’.
46. Expectations of internal clients / senior managers and dispute resolution: ‘this was not a factor’ to ‘this made settlement impossible’.
47. Expectations of internal clients / senior managers and premature dispute resolution: ‘yes’ to ‘no’.
48. Personality clashes and dispute resolution: ‘this was not a factor’ to ‘this made settlement impossible’.
49. Court action: ‘If we had gone to court, we would have clearly won’ to ‘If we had gone to court, we would have clearly lost’.
50. The impact of court action on the relationship: ‘no damage, expected as part of the game’ to ‘it would destroy it’.
51. The impact of court action on the organisation’s operations: ‘no effect’ to ‘would bring operations to a halt’.
52. Court action ‘would have been costless’ to would have been prohibitively expensive’.
53. Payout, if it came, was likely to be low compared to the real damage of court action to your organisation: ‘false’ to ‘true’.

[i] SEM allows us to explicitly model the measurement error of our latent variables. Additionally, it permits us to simultaneously estimate the relationships between transaction characteristics and the four management control mechanisms, while explicitly modelling co-variation amongst them. Modelling interdependencies amongst the management control mechanisms is particularly important in light of theories that assume such control systems are jointly determined. Since our data are on ordinal scales and may not be normally distributed, maximum likelihood methods should perform well (Boomsma and Hoogland, 2001; Distefano, 2002; Anderson and Dekker, 2005).

[ii] Good fit is indicated by a Root Mean Squared Error of Approximation (RMSEA) of less than 0.07, a Standardized Root Mean Square Residual (SRMR) of less than 0.05, and the Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Non-Normed Fit Index (NNFI) and Comparative Fit Index (CFI) being above or around 0.9.

[iii] Good fit is indicated by a RMSEA of less than 0.06, a SRMR of less than 0.05, and the GFI, AGFI, NNFI and CFI being above or around 0.9.