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**THE IMPACT OF TRANSACTION COSTS IN INCOMPLETE
CONTRACTS ON PRICES SUBMITTED IN THE TENDERING
PROCESS**

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A research project submitted to the Gordon Institute of Business Science, University of Pretoria, in partial fulfillment of the requirements for the degree of Master of Business Administration

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Abstract

All contracts are inherently incomplete because although principals and agents agree *ex ante* to abide by the terms of the contract, their respective investments differ. In anticipation of performance, both recognise incentives for opportunistic behaviour. Investigating the perceptions of both parties in the tender process contributes towards determining what factors can be used by principals and agents to reduce the extent and impact of incomplete contracts, and to minimise their respective transaction costs.

The aim of this research is therefore two-fold: firstly, to establish the impact of incomplete contracts and transaction costs on the tendering process, and secondly, to determine what factors can reduce the impact and minimise transaction costs incurred by both parties.

The value that both the principal and agent obtain from the tendered work increases in proportion to the quantity or volume of work, and decreases as the agent's profit and the cost to both parties increase. Therefore, the value that can be obtained subsequent to any contractual transaction reduces as the costs to both parties increase, which includes their production costs and transaction costs. It is clear that the total net benefit in the transaction is increased if the transaction costs of one or both parties can be reduced.

The main transaction costs incurred by both parties due to the cost implication of risk and uncertainty, can be summarised as moral hazard and asymmetric information, time delays, search for and disclosure of information, as well as the enforcement and legal costs that both parties may be subjected to.

Keywords

Shading, premium, incomplete contracts, asset specificity, opportunism, principals and agents, search, bargaining, shirking, measuring, coordination, contractual uncertainty, firm-specific risk, moral hazard, asymmetric information, information disclosure, enforcement, legal, reputational and opportunistic behaviour, biased sampling.

Declaration

I hereby declare that this research is my own initiative, and subsequently was conducted and compiled by myself.

It is submitted in partial fulfillment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination at any other university.

I further declare that I have obtained the necessary authorisation and consent from all parties involved to carry out and report on this research.

Johannes Antonie Fourie

11 November 2013

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THE IMPACT OF TRANSACTION COSTS IN INCOMPLETE CONTRACTS ON PRICES SUBMITTED IN THE TENDERING PROCESS

Chapter 1: Introduction

The aim of this research is two-fold: firstly, to establish the impact of incomplete contracts and transaction costs on the tendering process, and secondly, to determine what factors can reduce the impact and minimise transaction costs incurred by both parties.

Within the scope of this research the principal is understood to be the company entity requesting a price quote from a prospective agent to deliver a product and/or service, and the agent is understood to be the entity providing a quote to the principal to supply the required product or service.

Incomplete contracts in this context refer to contracts that do not sufficiently capture and describe the scope of the work or service required by the principal in order to eliminate any likelihood of acts of opportunism by either party.

Transaction costs in this context refer to the range of additional transaction costs which parties incur in addition to the production costs when entering into any form of transactional contract. These transaction costs may involve the direct costs of bargaining, writing, monitoring and enforcing contingent contracts as well as the costs associated with the *ex ante* investment and *ex post* performance inefficiencies that subsequently arise as a result of these contractual hazards (Joskow, 1985).

In determining what factors, if any, can be used by principals and agents to reduce the extent and impact of incomplete contracts and to minimise transactions costs, it is important to keep in mind that these factors should assist both parties to the contract in identifying and mitigating the risks and uncertainties in the incomplete contracts resulting from the tendering process. All contracts are inherently incomplete because although both parties agreed *ex ante* to abide by the terms of the contract, subsequent to their sunk investments (irreversible investment costs which cannot be recouped) and in anticipation of performance, both recognise incentives for opportunistic

behaviour. Opportunistic behaviour refers to the ability of one party to capitalise on the sunk cost of the other party by demanding better benefits after these sunk costs have been incurred. These are created *ex post* because there are no mechanisms which can mitigate or minimise either party's ability to act on these incentives. To mitigate or minimise the effect of all these transaction costs is important to both the principal and the agent as they reduce the *net benefit* to both parties.

A typical example of an incomplete contract with associated transaction costs would be when principal X signs a service contract with agent Y, and agent Y cannot gain access to the service work area on account of principal X not being able to provide legislatively required medical examinations timeously.

Another example is when principal X has a reputation for an exceptionally high rate of quality inspections, which negatively impact upon the agent's ability to carry out the work; this will translate into the agent including a premium rate on tenders for principal X as compared to rates for other principals.

1.1 Research relevance

The consequence of incomplete contracts has become an relevant topic in South Africa since late 1993 (Davies & Van Seventer, 2004), when the economic implication of public and open tenders as opposed to the previously selective tendering processes began to be felt. Since then the tender process in general has been opened to local and international contenders of all genders, race groups and industries. This has become an even more relevant topic since the subsequent tightening of employment equity requirements on companies in order to address problems associated with previous economic inequality. The effect on agents is that they not only have to adhere to the principal's requirements in order to qualify for tenders, they also have to adhere to government employment equity requirements.

The problem of incomplete contracts has previously been tested, both theoretically and empirically (Miller, Denison, & Matuszewski, 2013). However, this research aims to further explore their point of view to establish the extent and negative effects of transaction costs in the incomplete contract, and how these can be reduced by focusing on the tendering process leading up to the incomplete contract. Previous research has thoroughly evaluated the incomplete contract and bartering process from

the principal's perspective. The need to determine the transaction cost factors from both the principal's and the agent's points of view, and to create a model to reduce these, is hereby identified.

1.2 The need for and rise of contract work

Roughly 10% of the workforce worldwide consists of independent contractors or agents and constitute not only an important part but also a growing segment of the world population (Holman, Joyeux, & Kask, 2008). According to (Houseman & Osawa, 2003), independent contractors are constantly and increasingly becoming more prevalent throughout the entire developed world. As the vast majority of contingent workers are employed by agents, it is clear that the need for contract work or services performed by agents is becoming more widespread (Erickson, 2012). This tendency is supported by the temporary placement provider, Adecco, (Erickson, 2012) which indicates that the growth rate of contingent workers (workers who similarly to agent companies do temporary work that is either project or time based), will be three to four times that of traditional workers within the next few years, and that these workers will eventually represent an estimated 25% of the global workforce (Erickson, 2012). As described above, contingent workers can to a large extent be described as employees of agents, firstly as the majority of them are employed by agents, and secondly due to the fact that the rest of them are employed on either a project or time basis.

1.3 Advantages of contracting agents to perform work

There is nonetheless a positive side to contract or agent work as these workers add to the principal's intellectual capacity and provide instant access to expertise as and when the principal requires it. This forms part of the talent strategy of many principal companies. Additional advantages of the talents residing in agents include:

1. **Cost flexibility:** A valuable advantage of employing agents is the possible cost saving from employing fewer staff numbers, as a portion of the principal's staffing requirements would be performed by the agent's employees.
2. **Speed and agility:** The rapid and ever-changing economic scene of today results in the need for talent to change on a continuous basis. This can be done without incurring long-term costs or commitments, and further reduces the effects and costs that may cause disruption in the organisation. The agent's staff will

temporarily add to the intellectual capital of the principal for the duration of the contract, and after the completion of the work, this staffing requirement will become redundant.

3. **A boost to innovation:** The temporary import of talent through contracting the agent brings new knowledge and fresh ideas based on experience obtained from diverse and previous working exposure.

1.4 Perceptions regarding agents

To fully utilise and take advantage of this emerging cadre of agents, principals need to overcome the negative perception and threats associated with agent workers. Agent workers need to be managed through proper contracts, which would protect both principal and agent. In order for principals to fully benefit from the opportunities afforded by agents, the possible downside of incomplete contracts as indicated by Williamson (1988) need to be recognised and managed to keep transaction costs to a minimum.

The administration of contracts is very often neglected at the inception stage of a programme; however, when performance does not match expectations, the contract is regarded as the primary guide or the first port of call to remedy the problem.

Agents are required to perform work of the same quality as that rendered by company employees (Bidwell & Briscoe, 2009). The expertise and quality of work expected from them are equal to, and sometimes even higher than that expected of company employees.

An ever-present problem is that agent employees are not legally employed by the principal or company, although these companies are ultimately responsible for their remuneration. Agent employees seldom continue working at the premises of a particular principal, and this can be the source of misperceptions as they do not see the principal as the custodian of their careers. Bidwell et al. (2009) contend that agent employees do not have close relationships with any principal beyond the workplace. Therefore, the selection of an agent's employees remains an integral and important component in the quality of work or services, and is crucial to the implementation of these investments (Mitkus & Trinkūnienė, 2008). Fong and Choi (2000) have successfully analysed methods for the selection of agents and then noted that the

methods currently used are non-exhaustive and tend to be biased as there is a lack of opportunities to evaluate the abilities of an agent and still meet the principal's requirements in terms of time, price, quality and security.

1.5 Research background – the process of procurement

Procuring

The broad definition of *procurement* represents the overarching function that describes not only the activity of *securing* or *obtaining*, but more importantly the overall *process* of *acquiring* goods, work or services. Procurement is distinct from *purchasing* in that it involves both the activities of establishing the fundamental requirements as well as sourcing the required activities. The procurement process would therefore include actions such as market research, vendor evaluation and the negotiation of contracts. Under certain circumstances it can also include the purchasing activities required to order and receive goods.

Purchasing

The term *purchasing* can be defined as the process of ordering and receiving products and/or services. It therefore forms a smaller part of any larger procurement process, as explained above. In general, purchasing refers to the process involved in the ordering of goods. This process could entail procedures such as the request, approval, creation of a purchase order record (POR), and the delivery or receipt of goods.

Procurement objectives

The direct objectives and results of the procurement process, and the mutual contract following such a process, are to ensure that the interests of the principal are met and that the agent is fairly remunerated for the work or service rendered, in accordance with the specifications of the contract. It is recognised that the principal expects to receive the best value for money under current ruling market conditions, and the agent similarly expects to secure a market-related profit as compensation for rendering the service.

Procurement requirements

Since procurement involves a more structured process relative to the normal purchasing exercise, principals prefer to procure as this is normally carried out through a process of tendering, rather than through the purchase of products directly from a seller or retailer.

Tendering refers to the process whereby principals supply potential agents with the necessary documentation to assist them in providing quotes for delivering the required products or services. The agents then submit properly prepared bids, and the principal evaluates these bids to determine which agent is to be the preferred supplier. The principal then appoints the relevant agent to perform the work, and subsequently remunerates him in accordance with the agreed contract.

Corporate procurement procedures tend to rely strongly on the process of tendering in order to obtain goods, work and services. This is done through a formal bidding process, which takes place as a result of certain underlying procurement objectives, underpinned by corporate governance requirements. These underlying intentions of the tendering process are mainly concerned with the following (Diop, 2011):

1. Ensuring competition amongst agents:
 - 1.1. Firstly, by attracting more competitive bids.
 - 1.2. Secondly, to give effect to competition legislation in general.
2. Promoting accountability in the spending of company's money by procurement staff.
3. Ensuring transparency throughout the entire procurement process.
4. Assisting in promoting unbiased procurement decision-making.
5. Limiting as far as possible any form of nepotism or favouritism (nepotism in business refers to a form of favouritism towards relatives and friends regardless of merit, performance or competitiveness).

The process of tendering

Tender processes differ substantially from principal to principal. The points of difference can originate either in the steps followed in the process, as detailed below, or it can originate from the overall process structure. There are several different tender structures possible such as:

1. An open process, whereby all interested agents could bid for the contract under discussion, and are requested to return their bids by a set date, after which it will be evaluated and awarded.
2. A restricted process, which is a more structured and staged approach, whereby only certain invited agents are allowed to bid. During the first stage all interested agents are requested to complete a questionnaire from which a shortlist is drawn up. The second stage normally entails the invitation of shortlisted agents to respond to a request for quotes (RFQ). The bids are then evaluated and awarded.
3. A negotiated process, which consists of a more complex approach, whereby several interactions or contract negotiations are initiated between the principal and the preferred agent(s).

Steps followed in the tendering process

Principals to a large extent determine the steps to be followed in their respective tender processes. The structures of principals' tendering processes have been found to differ substantially, even within industries such as the mining or civil construction industries. Although the tender process can and mostly does differ from principal to principal, it usually to a greater or lesser degree consists of the following steps (Small Business Connect, 2013):

1. Determining the extend of the tender. The principal determines what the tender will entail, and which agents will be required to bid.
2. Request for tender (RFT) is prepared: The principal outlines to all agents requested to tender what work or products are required as well as the contractual requirements and time schedules.
3. Invitation to tender: Agents are invited by the principal to attend a site inspection, and are provided with the necessary documentation pertaining to the request for tender (RFT).

4. Agents respond to RFT: After receiving the RFT, agents can become further involved in the tender process by:
 - a. Attending the pre-tender site inspection or tender clarification meetings.
 - b. Requesting clarification of any requests in order to eliminate uncertainties.
 - c. Planning their response after obtaining the required information.
 - d. Calculating the details pertaining to, and preparing their response.
 - e. Submitting their response in the format requested by the principal and adhering to the prescribed timeline, location of submission, and tender requirements.
5. Evaluation of submitted agent tenders: Each agent's tender submission will firstly be verified for compliance, and if found compliant, will be evaluated against the criteria specified in the RFT, and then compared with other submitted tenders. The evaluation will be based on all the variables considered earlier in the process, and the submitted tenders will typically be ranked in order of the highest to the lowest value.
6. Selection of the preferred agent: As a direct result of the tender evaluation process, the agent's tender that offers the best value to the principal in terms of all the variables considered earlier will be awarded the contract.
7. Notification of award: After the decision has been made as to which agent will be awarded the contract, the successful agent will be advised accordingly in writing.
8. Debriefing: Unsuccessful agents are also advised but seldom offered a debriefing interview in order for them to increase the value of any future tender submissions.
9. Contract negotiation: A formal and at times lengthy process is followed until the principal and successful agent reach mutual agreement in the form of a binding contract, specifying all the conditions and sanctions of the work.
10. Management of the contract: Once the contract is agreed to and signed by both the principal and the successful agent, the agreed work can normally commence.

Procurement contracts

Needless to say, the *ex ante* creation of procurement contracts is essential to the *ex post* relationship, and therefore both parties need to agree to this contract. These contracts can involve a wide range of complex and contentious issues in an attempt to address the various interests of all parties. In the pursuit of addressing the needs and concerns of all parties, the United Nation's Development Program included a very

useful map indicating that the contract should ensure that the following “triangle of objectives” are met (Diop, 2011):

1. **Cost:** Both parties need to ensure that the work has been completed based on the costs that were agreed to in the contract. The agent needs to ensure that he executes the conditions of the contract in such a way as to maintain financial profitability. Although the agent's income from the contract is known to the principal, the agent's costs are usually not. On the other hand, the principal needs to ensure that the agent performs in accordance with the requirements stipulated in the contract in such a way as to maintain the profitable future of the contract. These costs are usually not known to the agent.
2. **Quality:** It is in the interest of both parties to ensure that the work has been carried out in accordance with what was specified and agreed in the contract. Should the principal require an improvement on the specifications previously agreed to in the contract, the contract as well as the payment conditions need to be renegotiated.
3. **Time:** The agent needs to ensure that the work has been carried out and completed satisfactorily within the specified timeframe.

In summary, both the principal and the agent need to ensure that the work is executed in such a way that minimal costs are incurred, which is consistent with the need to achieve a final product of acceptable quality within an acceptable timeframe.

Procurement procedures and subsequent contracts between principals and agents give effect to the above objectives by reducing possible uncertainty and any associated risk. According to the United Nation's Development Program (Diop, 2011), this can be done by:

1. Clearly defining the roles of each respective party, indicating which party to the contract should be taking responsibility for which risk pertaining to the work that cannot be eliminated from the project scope.
2. Providing enough information to ensure that all the parties to the contract clearly understand their roles and responsibilities relating to the scope of the work.

Maintenance of contracts

When studying the background of incomplete contracts and the motivation for economic theory quoted in literature pertaining to incomplete contracts, it becomes evident that trading parties experience considerable uncertainty when concluding long-term contracts. This is mainly because the future is difficult to forecast (Fehr, Hart, & Zehnder, 2011), and as circumstances change, long-term contracts may have to be renegotiated.

Accepted economic theory supposes that at the time of *ex ante* contract negotiation all parties are afforded the same quality and depth of information. It is further supposed that no particular monetary constraints exist for either party. Coasian bargaining would thus not inadvertently become a factor in the *ex post* efficiency of the contract.

As a consequence of renegotiation, a hold-up problem may come into play. As each party to the contract shares in the positive returns of earlier investments made by the other party, these previous investments were deemed non-contractible. Consequently, each party could possibly underinvest in the fear of having to later share the returns on this investment with the other party (Hart, 2009).

It is therefore clear that not only are future contractual conditions difficult to foresee but also the maintenance or renegotiation of changes is fairly challenging. In a Coasian world, due to *ex post* efficiencies, all contracts tend to become longer term, as they are renegotiated and extended with great success. It is clear that mining contracts seldom seem to be extended and renegotiated beyond their second term, and this supports the hold-up problem.

Hart and Moore (2008) have developed a theory regarding the *ex post* handling of contracts. Their theory is based on the idea that an *ex ante* contract that was negotiated under fairly competitive conditions, shapes both parties' entitlements regarding the *ex post* outcomes. Their reasoning is that parties do not feel entitled to outcomes outside the ambit of the contract. However, contrary to this theory, they indicate that the parties may feel entitled to outcomes within the contract. If one of the parties does not receive what he feels he is entitled to, then he is aggrieved and subsequently provides perfunctory rather than consummate performance.

Fehr, Hart and Zehnder (2011) indicate that this approach yields a trade-off between contractual rigidity and flexibility. A flexible contract according to them is satisfactory in that both parties can adjust to the conditions experienced within the contract. The flexible contract, on the other hand, is faulty in that there can be substantial aggrievement and shading as a result of changes to the contract.

They further compare a flexible contract in contrast to a rigid contract, which they indicate is acceptable in that there is less room for shading as the contract does not allow for any changes or adaptations. The rigid contract, according to them, is unacceptable in that parties cannot adjust to external conditions.

Hart and Moore (2008) argue that it is the combination of both *ex ante* competition and *ex post* lock-in that makes an initial contract useful. *Ex ante* competition assists in providing objectivity to the contract terms. This happens since market forces will inadvertently define what each party brings to the relationship. Both contractual participants will therefore perceive the initial contract to be fair. According to Hart and Moore (2008), the *ex post* lock-in should ensure that both participants conform during the contract period, the practicality of which is questionable.

When one party remains in control of the other's work and in effect has the last say and authority to veto any decisions made by that party, it creates a window for opportunistic behaviour by the controlling party. This is similar to an owner who has a controlling share in his company. It increases the risks and uncertainty for the other party, even in an *ex ante* situation. In situations of substantial risk and uncertainty during the *ex ante* phase of the contract, agents are found to charge a premium above the current accepted market price in a tender offer.

Factors affecting the quality of contractual exchange

Reeves (2008) explored the practice of contracting in public private partnerships, and concluded that "a significant degree of conflict" became evident in a number of principal-agent relations (Reeves, 2008, p. 972). He attributed these phenomena solely to sources of transaction costs, including incomplete information, bounded rationality and uncertainty.

Lonsdale (2005) examines the problem of asymmetric lock-in, which appears when one party becomes dependent on the other. This results in an empowered position for the latter, which causes this party to engage on terms of its own choosing. He points out that in the case where the empowered party is the agent, he can pass some of the initial contractual risks back to the principal. Williamson (1988) indicates that an agent's reputation acts as a safeguard against the exploitation of power against the principal. Contrary to Williamson's view, Lonsdale (2005) regards any *ex ante* power imbalance as a threat to efficient *ex post* exchange.

Grimshaw, Vincent and Willmott (2001) as well as Lonsdale (2005) all identified the lack of expertise, experience and resources on the part of principals as an obstacle to co-operative exchange.

Reeves (2008) contends that failed long-term contractual arrangements impose significant costs on all parties. He points out a number of cost factors which could have a direct impact on the quality of exchange, such as the switching of parties' resources from one contract to another, and the strict mutual adherence to the terms of the contract.

According to Waddle (2009), following a consistent set of bid preparation procedures will reduce the chances of mistakes in the bid process, and minimise loss of profit. He raises a number of points:

1. Scope and quantity errors.
2. Miscalculation of project risk.
3. Inadequate contingencies and profit.

Chapter 2: Literature review

2.1 Introduction

The objective of this section is to discuss and evaluate theories related to transaction costs and their importance in the optimisation of the tendering process.

2.2 Vertical firm boundaries

At this stage and for the purpose of this research, it is necessary to put the economic arrangement of contracts into perspective. There exists a wide range of institutional arrangements that have developed over time to govern transactions between principals and agents (Joskow, 1985). These different arrangements have emerged as a response to various transactional considerations with the purpose of minimising the total cost of concluding a transaction. According to Joskow (1985), these arrangements can take on many different forms, ranging from simple spot-market transactions where no tendering or contractual process occurs, to complex long-term contracts, and ultimately the vertical integration of some processes brought into the firm. Joskow (1985) further elaborates that the specific set of institutional arrangements selected for each transaction should represent the governance structure that minimises the total cost of consummating that specific transaction. These all occur outside the vertical boundaries of the firm.

Since the much-reviewed seminal work of Ronald Coase (1937), the focus has been on understanding the factors that determine the vertical boundaries of the firm, and in order to accomplish this it would be necessary to follow the trail of incomplete contracts back to the initial classification of the vertical boundaries of the firm. These boundaries were first identified in the economic research of *The division of labour* by Adam Smith (1776). He suggested that the division of labour would lead to an improvement in productivity, provided that firms were in their original state and vertically integrated. The firm would transfer raw materials and intermediate products or services from one part of the firm to another without having to rely on other suppliers or service providers or the need for bartering or contracts. He suggested that the outputs of the individual, and subsequently the firm, can be increased by a process of specialisation and dividing the production process into smaller concentrated activities. However, this must be understood in the context of times gone by when

most firms in their original state were operated by proprietors, for example, shoemakers, bakers or draftsmen.

When Smith (1776) introduced the division of labour, firms in their most original form started disintegrating vertically in the quest for higher production. Intermediate goods and services were systematically being manufactured by independent firms. The exception here are firms in industries that require limited output. In these cases the production of intermediate goods are not profitable when manufactured on a limited scale. Firms in these industries have to expand in order to overcome the need for specialised intermediate goods. As the industry developed and output inevitably increased, firms again became more and more disintegrated (Langlois & Robertson, 1989).

When comparing the boundaries of the firm as mentioned in the work of Smith (1776) to that of Coase (1937), the original division of labour clearly seems incomplete as Smith “considers only one component of cost: the raw technological costs of manufacturing” as clearly pointed out by Langlois et al (1989).

2.3 Transaction costs in general

Since Coase's (1937) groundbreaking article explaining the vertical structure and boundaries of the economic organisation, economists have been alerted to the impact and importance of transaction costs. He pointed out that “the costs of negotiating and concluding a separate contract for each exchange transaction which takes place on a market, must also be taken into account” (Coase, 1937, p. 391).

There have been several different opinions over the years regarding the meaning and implication of transaction costs (TCs), which in economic theory circles are now generally referred to as transaction cost economics (TCE). Authors such as Arrow (2001) and Barzel (1981) have defined TCs as the “costs of running any economic system” or “the variability of information over time” (Arrow, 2001, p. 300). Barzel on the other hand defines TCs as the costs normally associated with the “transfer, capture, and protection of property rights” and indicate that if transacting had been costless, there would be no need “for tying, then resource misallocation would disappear too” (Barzel, 1981, p. 598).

Oliver Williamson probably remains the best-known economist of all economic academic writers (Seggie, 2012) who contributed to the further development of TCE. He argues that the pattern of vertical integration in any industry reflects the minimising of production as well as transaction costs. In 2009 Williamson shared the Nobel prize for his analysis of economic governance and the boundaries of the firm (Saavedra, 2011).

2.4 Transaction costs from the incomplete contracts point of view

With rapid economic change comes uncertainty surrounding not only the short-term financial success of contracts, but more importantly the ability to address the contractual incompleteness as an ongoing priority. Almost all academic literature currently available focuses on how transaction cost theory (TCT) relates to manufacturing rather than services, notable exceptions being Wang (2002) and Kotabe, Murray and Javalgi (1998).

Wang, Tai and Grover (2013) applied the transaction costs theory (TCT) to incomplete contracts, specifically in the information technology industry of customised software, and suggested that the factors resulting in higher TCs are the following:

1. **Asset specificity**, which Williamson describes as “the degree to which an asset can be redeployed to alternative uses and by alternative users without sacrifice of productive value” (1988, p. 569).
2. **Uncertainty**, which creates doubt about a specific outcome.
3. **Opportunism**, which Wang describes as the contractor “re-interpreting the contract”, or the contractor “failing to deliver” (2013, p. 155), on certain expectations of the buyer although it is not stipulated in the contract. These are clearly as a direct result of an incomplete contract.

According to research done by Egwunatum, Benjamin and Daniel (2012), apart from certain fundamental requirements such as delivery capacity, and quality and infrastructure, most of the criteria resulting in incomplete contracts were related to TCs.

Similarly, according to Li, Arditi and Wang (2013), the actual cost associated with contractual projects comprises not only production costs but also TCs. They (Li, Arditi,

& Wang, 2013) point out that TCs include, but are not limited to, the costs of “preparing the bidding package, estimating the extent” of the proposed contract work, “drawing up the contract, administering the contract and dealing with any deviations” from the contract’s conditions. The findings of Li et al. (2013) further indicate that the TCs borne by the principal can be minimised if the principal minimises the uncertainties inherent in, and associated with, the transaction environment.

These TCs constitute an important part of the principal’s budget. Understanding the concept of TCs is difficult because of the inconsistency and ambiguity in defining TCs in literature, and the fact that literature, similar to the views of Wang and Li et al., mainly focuses on the description of TCs from the principal's viewpoint.

2.5 The change from vertical integration to contract transactions

Interestingly, Gibson, Sabel and Scott (2009) have found that rapidly innovating industries are not behaving the way theory expects them to behave. Conventional industrial organisation theory holds that when parties in a direct vertical supply chain have to make transaction-specific investments, the risk of opportunism becomes a factor when choosing the vertical integration option instead of formal contracts. According to Gibson et al. (2009), despite conventional theory, contemporary practice is moving towards contracts instead of vertical integration. They observed that vertical disintegration is evident in several industries, as producers recognise that they cannot maintain cutting-edge technology in all the fields required for the success of their products or services.

In the wake of current global economic uncertainty and the increasing importance of information, the question arises, “on what other basis should transactions be concluded if the principal does not insource the product or service through integration?” and “how can incomplete contracts be conducted profitably if integration decisions cannot?” These further highlight the need for understanding the process of contracting and finding ways to mitigate the risks and uncertainties associated with incomplete contracts.

2.6 The expected future of contract transactions

According to Thomas and Ellis (2007), planning is an essential part of contract project management, and they maintain that many small and medium-sized agents or service providers fail to do effective operational planning. One assumes that this will inevitably lead to extensive TCs in the case of incomplete contracts. Their research also concludes that better pre-bid plans will reduce costs, shorten schedules, and improve labour productivity. They further point out that most research papers describe planning as a macro-level process for the principal or client. Unfortunately, published literature offers little guidance for smaller agents on what constitutes *effective planning*. Their paper describes a micro-level planning process for contractors, which consists of several steps to assist and guide the agent through the planning process (Thomas & Ellis, 2007).

2.7 The principal and the agent in relation to the contract

In order for both the principal and the agent to reduce uncertainty and exploit information visibility, the two firms have to engage in sufficient coordination efforts (Wang, Tai, & Grover, 2013).

This concept is supported by Chen (2006) who indicates that even in the event that an agent's competition increases, the reduction of the client's TCs is more effective than acquiring consumer information with marketing intentions. He evaluated a dynamic duopoly model in which two forms of marketing innovation exist, which firstly allows a firm to either acquire consumer information effectively, or secondly, to reduce consumer TCs. He found that although the first benefits the innovating firm or agent, it might hurt some consumers; and while the second benefits all consumers, it may not benefit the innovating firm. He concludes that under increased competition intensity the value of consumer information reduces, and the value of TC reduction for the consumer increases (Chen, 2006).

Egwunatum et al. (2012) also evaluated the incomplete contract from the perspective of both the transaction participants, and concluded that TCs exist on both the principal's and the agent's sides. For example, both principals and agents need to pay the costs for negotiating and writing contracts. He suggests that for a once-off market transaction it may be true that it is only the buyer that needs to be concerned about

opportunism; however, he adds that for a set of transactions bound in a long-term outsourcing contract, which is termed *relational contracting*, both the principal and the agent will be confronted with the possibility of opportunism. It can therefore be concluded that all the criteria for transaction costs will, to a greater or lesser degree, be present in both parties' views of the incomplete contract. It is therefore this question the researcher wishes to answer: *What are the most significant transaction costs which influence the principal's and agent's perceptions of value before and during the tendering process?*

Several different factors will result in TCs, i.e., risk, uncertainty, opportunism and other TCs to both parties such as consumer inertia, inherent biases, technology spill-overs, reputation impairing spill-overs, future discount rates, operational velocity, total float pre-allocation agreements and sunk costs. All these aspects will be evaluated during this research. This information will further assist in adding significant value to the contract process by answering the two questions: *how can the agent increase the value of his quote by reducing the transaction cost as perceived and experienced by the principal?* and, *how can the principal influence all the tendering agents before and during the tender process to perceive and expect lower transaction costs in order to reduce the cost implication of their submitted quotes?*

An important aspect of the relationship between both parties and the contract needs to be highlighted here: the costs associated with the search for information is evident in the tender process of both the principal and the agent. The TCs associated with the search for information may seem trivial, but the cost of not having the information in the first place can be prohibitive. The actual cost and the dilemma of obtaining reliable information depend on the type of goods required and described in the tender. In the case where principals require agents to supply *search goods* the concept is fairly simple as the quality and standard of products can be inspected before purchase, such as the freshness of bread or the quality of clothing. The dilemma becomes more complicated when it involves *experience* or *credence goods*.

In the specific case of *experience goods*, the principal will only know what the agent's standard of work is when the service or product has been provided, such as the reliability of a vehicle or the quality of a haircut.

The *information expense* dilemma may never be resolved, for example in the case of *credence goods* where medical procedures are involved, when the principal may not be in a position to gauge the quality of the agent's work.

It is therefore clear that the relationship of both parties to the contract is dependent on the type of contract which followed the acceptance of the tender, and greatly influences the process that follows.

2.8 Transactional model

The general principal-and-agent-profit functions, as presented through traditional neo-classical economics (Lee, Seo, Park, Ryu, & Kwon, 2009), incorporate the cost of the work the principal requires as well as the value that both parties obtain from the contract, and can therefore be presented as follows:

Traditional neo-classical profit function

On a single product or unit basis the agent's surplus can be calculated as:

$$\text{Agent surplus (S}_A\text{) per unit} = \text{Price (P)} - \text{Cost (C)}$$

where if $P > C$; then $S_a > 0$

Similarly, the principal's surplus can be calculated as:

$$\text{Principal surplus (S}_P\text{) per unit} = \text{Benefit (B)} - \text{Price (P)}$$

where if $B > P$; then $S_p > 0$

Total net benefit in traditional neo-classical economic theory is therefore:

$$\text{Total Net Benefit (T}_B\text{)} = \text{Principal surplus (S}_P\text{)} + \text{Agent surplus (S}_A\text{)}$$

$$= (B - P) + (P - C)$$

$$= (B - C) \text{ or put alternatively;}$$

$$= (\text{Principal benefit} - \text{Agent cost})$$

Transaction cost modeling

The total value of the service delivered by the agent increases in direct proportion to the volume of the service, or quantity of the units produced (Lee, Seo, Park, Ryu, & Kwon, 2009). Lee et al. (2009) also suggest that this can be transferred as profit. It is clear that the profit will reduce if the cost increases. Traditionally this unit cost consisted of production costs only, which is the agent's tender bidding price per unit of work. Lee et al. (2009) suggest that this cost should also consist of transaction costs (TCs). Similar to Lee et al. (2009), Richardson and Roumasset (1995) suggest in their research that these TCs include shirking cost, management cost and coordination cost. Lee et al. (2009) included only these three TC factors in their model as the most relevant. The overall profit function for an agent, if the assumption is made that similarly to Lee et al. only the above-mentioned three factors contribute to the agent's TCs, can be formulated as follows (2009, p. 1235):

$$\text{Agent surplus (S}_A\text{)} = \text{Selling Price (P}_s\text{)} - \text{Costs (C}_A\text{)}$$

$$\text{Thus Agent profit (}\pi_A\text{)} = P_s(q) - C_A(c,S,M,K)$$

$$\text{If } P_s(q) = C_A(S,M,K) + C_A(c) + \pi_A$$

$$\text{Then } C_A(S,M,K) = P_s(q) - C_A(c) - \pi_A$$

Lee et al. (2009) indicated that $P_s(q)$ is the value of the contracted work, which is a function of q , the quantity or volume produced, then $C_A(c,S,M,K)$ represents the agent's total cost, whilst c is only the agent's production unit cost. S is the agent's shirking costs, M is the agent's management costs, and K is the agent's coordination costs.

The value that the agent can obtain from the work increases in proportion to the increase in the selling price of the service or products. This value can also be transferred to the agent as profit. Similarly, the agent's profit reduces as his costs increase, which includes his production costs and TCs. The agent's selling price, if priced correctly in the tender bid, should include his expected TCs. In their approach, Richardson and Roumasset (1995) indicate these TCs as shirking costs, management costs, and coordination cost.

The same model as described by Lee et al (2009) can also be applied for the principal. The total value of the service received by the principal increases in direct proportion to the volume of the service, or quantity of the units received. This can be transferred into profit for the principal by further delivering the product down the vertical chain to the next user. It is clear that the principal's profit will reduce if the price that he pays increases. Traditionally this unit price consisted of the agent's production costs and profit margin only, which is the agent's actual tender bidding price. As explained above, this cost should also include the agent's transaction costs. If the agent protects his profit margin, his bidding price should then also include his transaction costs, and the principal will ultimately also be charged with a price that includes the TCs incurred by the agent. The overall profit function for the principal can be formulated as follows:

$$\text{Principal surplus } (S_P) = \text{Principal received value } (V_P) - \text{Costs } (C_P)$$

$$(S_P) = (V_P) - C_P(c, S, M, K)$$

$$(S_P) = (V_P) - (\text{Selling Price } P_s(q) + C_P(S, M, K))$$

$$(S_P) = (V_P) - P_s(q) - C_P(S, M, K)$$

$$\text{Thus principal profit } (\Pi_P) = V_P(q) - P_s(q) - C_P(S, M, K)$$

$$(\Pi_P) = V_P(q) - (\Pi_A + C_A(c, S, M, K)) - C_P(S, M, K)$$

$$(\Pi_P) = V_P(q) - \Pi_A - C_A(c, S, M, K) - C_P(S, M, K)$$

$$(\Pi_P) = V_P(q) - \Pi_A - C_A(c) - (C_A(S, M, K) + C_P(S, M, K))$$

Where $V_P(q)$ is the value of the contracted work and q the quantity or volume, $P_s(c, S, M, K)$ represents the agent's selling price, and c the agent's production unit cost. According to Lee et al. (2009, p. 1236), S is the agent's shirking costs, M is the agent's management costs, and K is the agent's coordination costs. It is therefore argued that the principal will be paying for the transaction costs experienced by the agent.

When looking at the overall profit function of the principal, it is evident that the profit function includes the value that can be obtained from the tender work as well as the cost of the service or products to the agent and the principal himself.

The value that the principal can obtain from the tendered work increases in proportion to the quantity or volume of work, and decreases as the agent's profit and the cost to both parties increase.

Total net benefit in transaction cost theory is therefore:

Total Net Benefit (T_B) = Principal surplus (S_P) + Agent surplus (S_A)

$$= [V_P(q) - C_P(S,M,K) - P_S(q)] + [P_S(q) - C_A(c,S,M,K)]$$

$$= V_P(q) - C_P(S,M,K) - P_S(q) + P_S(q) - C_A(c,S,M,K)$$

$$= V_P(q) - C_P(S,M,K) - C_A(c) - C_A(S,M,K)$$

$$= V_P(q) - C_A(c) - (C_P(S,M,K) + C_A(S,M,K))$$

It is clear that the total net benefit in the transaction is increased if the TCs of one or both parties can be reduced; the agent will reduce his tender bid as his TCs are reduced. Subsequently the principal's received value to selling price will increase as well. As the TCs to both parties are reduced, the net benefit will increase because the agent's production cost, $C_A(c)$, will remain fixed.

Chapter 3: Research questions

This research aims to answer the following fundamental questions regarding the incomplete contract tendering process:

Question 1

“What are the most significant transaction costs which influence the principal’s and agent’s perceptions of value before and during the tendering process?”

Question 2

“How can the agent increase the value of his quote by reducing the transaction costs associated with his quote, as perceived and experienced by the principal?”

Question 3

“How can the principal influence all the tendering agents before and during the tender process to perceive and expect lower transaction costs in order to reduce the cost implication of their submitted quotes?”

Question 4

“How can both the principal and the agent increase the net benefit associated with their mutual contract?”

Chapter 4: Research methodology

In order to answer the questions posed in the previous chapter, and to either prove or disprove the research hypothesis, the search to gather information led to the basis and foundation of the research method outlined in this chapter.

4.1 Research scope

This research aims to answer a few fundamental questions regarding the incomplete contract arising from the formal tender process:

1. What are the most significant transaction costs which influence the perceptions of both the principal and agent as regards the value before and during the tendering process?
2. How can the agent increase the value of his quote by reducing the transaction costs associated with his quote, as perceived and experienced by the principal?
3. How can the principal influence all the tendering agents before and during the tender process to perceive and expect lower transaction costs in order to reduce the cost implication of the submitted quotes?
4. How can both the principal and the agent increase the net benefit associated with their mutual contract?

A few additional underlying needs for this research exist which can be broken down into four factors: firstly, the need for academia in general to grasp and understand the true nature of transaction costs in the tendering environment; secondly, the need for principal companies globally to grasp the effects of transaction costs on the firm's operating costs incurred during the tendering process; thirdly, this research should point out to agent companies bidding for contracts the possible true value to be gained by increasing their price elasticity through reducing the transaction costs associated with their bidding offers; lastly, this research creates an overall awareness of transaction costs and assists company executives in utilising these insights to increase the net benefit to their companies.

The sample population and sample size as well as the unit of analysis are also discussed in this chapter.

4.2 Research methodology and rationale

The methodology adopted is qualitative in nature as this research sought to venture into fairly untried territories by exploring the views of companies regarding the transaction costs experienced before and during the tendering process. Qualitative research is practical in that it is normally an exploratory exercise despite the dearth of proven knowledge available on a specific subject (Denzin & Lincoln, 2003).

This research shows that there is substantial proof in the form of strong and clearly communicated information and differing views relating to the costliness of transacting during the tendering process. It is clear that the views of principals and agents differ substantially, which demonstrates that tendering transactions would always be costly, because neither party recognises or understands the transaction costs of the other. These differing and evolving views show that an interactive research process would be very useful when examining this process and concept (Denzin & Lincoln, 2003). For this reason the administered questionnaire, which will be explained later, was adapted and re-administered after two sequential pilot tests in order to search for relevant transaction costs.

The data was collected through questionnaires completed by respondents during personally conducted interviews. These interviews were held with key role players within firms in various industries. The respondents were specifically selected from different levels within their respective company structures, although they were all directly associated with the tendering development or evaluation function.

The nature of the research makes the questionnaire an appropriate method to use due to the array of variables that needed to be evaluated for relevance to the transaction costs of the tendering process (Venkatesh, Brown, & Bala, 2013).

This research aimed to determine the “what” and “why” of hidden costs in the tendering and contracting process, instead of the “how much” and “how many”, as would have been the case in quantitative research. In order to understand the different perspectives of the different parties, the tendering and contract processes had to be observed in depth from the viewpoints of both the principal as the agent.

4.3 Population and sample size

The study focused on collecting data for corporate JSE-listed companies as well as privately held companies from both the principal's and the agent's perspectives. The sample of this research therefore included both principal representatives and agent representatives from the private and public sectors.

Three third-party consultants were also interviewed. The decision was made not to create a different questionnaire for them, but instead to interview them with the questionnaire of the party in the tendering relationship that they represent for the majority of their work. Most of them were consulting to principal firms, although one person consulting to agents was also interviewed. This added insight into the reasoning processes of principals and the transaction costs experienced by them.

Respondents in top management or senior line management as well as executive level represented the most suitable target populations since they are the people influencing the tender submission values as well as adjudication, execution and decision-making. These individuals represented the decision-makers in each of the two principal and agent samples, and should therefore provide for an accurate assessment of the costliness of the tendering processes.

This study therefore assumes that all persons interviewed are employed at a level where they can influence and contribute to tendering decisions.

The sample size was expected to be in the region of no less than six companies from both the principal's and agent's perspectives; ultimately twelve companies were interviewed.

4.4 Unit of analysis

The conduct of firms in respect of their first-hand knowledge of transaction costs formed the basis of this unit of analysis. The researcher believed that more accurate conclusions could be reached by evaluating their actions against similar experiences of other companies.

4.5 Sampling method

The research required responses from both principals and agents, and therefore this study targeted “all the individual elements which make up the population” (Zikmund, 2003, p. 369). The list of respondents included both principals and agents as well as possible consulting firms operating on behalf of parties in the tendering space.

Because the extent of the population is not entirely known, and individual probabilities cannot be determined, non-probability as well as quota non-parametric sampling techniques were followed. The sample had to represent the different subgroups which exist within a sample such as principals and agents. The quota sampling technique, according to Blumberg, Cooper and Schindler (2008), is used to improve representativeness. They contend that “the logic behind quota sampling is that certain relevant characteristics describe the dimensions of the population” (Blumberg, Cooper, & Schindler, 2008, p. 253). The researcher applied common sense in finding appropriate respondents for the sample, although every effort was made to avoid bias and keep the sample representative. Although the sample represented different quotas or subgroups which helped to limit the convenience factor within the sample, there was nevertheless a possibility that bias could become an element of the process, and prevent the sample from being entirely representative of the wider population.

A further rationale for using these sampling techniques includes the fact that non-probability sample techniques are usually less expensive and time-consuming than probability samples (Blumberg, Cooper, & Schindler, 2008, p. 252), and the researcher wanted to ensure that particular groups were included in the sample.

4.6 Data collection and instrument design

Questionnaire design

Previous research clearly indicated that qualitative data should be handled with care, taking into consideration that data collected through interviews cannot be completely objective and will to a greater or lesser degree be influenced by interviewer and/or interviewee bias (Venkatesh et al. 2013). In the search to minimise this phenomenon, the research questions were designed not to increase the interviewee’s perception through the build-up of questions from one point of view only.

The questionnaire design considered important guidelines such as a simple table layout, selecting answers as far as possible from a Likert scale, and providing clarity of meaning through properly explained questions. An important consideration during the design stage of a questionnaire was the length of the questionnaire or the number of questions asked. The intention was to limit the questions to between 30 and 40. However, during the pilot interviews it was observed that the questions were too brief and not sufficiently self-explanatory. Additional questions had to be included, which increased the number of questions to 44 and 53 for principals and agents respectively. During the first interview it became apparent that as the discussion progressed and questions were put to respondents, the interviewer himself had to complete each questionnaire.

The estimated time allowed for each interview during the design stage was approximately one hour. This was found to be enough and the increased number of questions was easily answered within the allocated time. Because the questions were communicated and the questionnaires completed by the interviewer, the respondents appeared to be more relaxed and responded more openly. However, the interviewer did give a copy of the questionnaire to each respondent to follow through as the questions were discussed with them. This assisted in creating a better understanding of the questions and the possible answers.

The object of the questionnaires was to maintain accuracy by ensuring that all the information gathered was both reliable and valid (Zikmund, 2003). The questionnaires were initially designed, but later slightly altered after the pilot interviews, to ensure that the questions were clear and easy to understand to avoid misunderstanding or misperception. Several questions were asked twice in different ways in order to test the reliability of the interviewees' information previously supplied.

In order to ensure that questions were not asked in such a way as to lead the interviewee in any way, questions were asked from both the positive as the negative perception side of the tendering interaction. However, care had to be taken to ensure that more than one outcome would not be drawn from a specific question by testing a positive connotation through a question that is filled with positive and opportunistic flair. The methodology could also not rely only on collecting rich and qualitative data through open-ended questions, as certain questions had to be direct and to the point in order to determine specific values or percentages.

It is necessary at this point to indicate that the two populations of principals and agents were expected to respond to different questionnaires. Although the two questionnaires addressed the same transaction costs, the questions were formulated differently and from different perspectives. In the earlier pilot interviews it was found that the priorities of the two populations, i.e., principals and agents, differed substantially in as far as the different TCs were concerned. For this reason the questionnaires to the two populations differed substantially in both the number of questions and the angle of approach to the questions.

The question types in both questionnaires can broadly be divided into three different categories:

1. **Generic administrative questions**, that categorised the interviewee as well as the company represented, and do not enquire about any TCs.
2. **Testing questions**, which tested the extent of the different TCs.
3. **Quantifying questions**, that firstly tested the TCs, and secondly quantified the effects of the different TCs.

Generic administrative questions

In order to explore and compare the respondents' perceptions of the tendering process, the researcher began by asking a number of generic administrative questions in the first section of the interview. From the responses it became evident that none of the companies interviewed considered the tendering process to be a once-off event. All the respondents regarded the tendering process as an ongoing exercise and that the two contracted firms would have several interactions throughout the duration of the contract.

All of the companies interviewed were non-governmental, and none of them were non-profit organisations. All the interviewed companies therefore aimed for concluding and locking into work or goods contracts with the aim of net positive financial returns. Personal or company welfare is therefore seen as the overarching purpose of engagement between the principals and agents.

The administrative questions were generic with the intention of obtaining a better understanding of each person interviewed, and to be able to grasp and “package” the

information obtained as each individual person would have his/her own perception of bounded rationality.

Before analysing and discussing the research findings in chapter 5, it is necessary to provide relevant explanations of the different categories of transaction costs encompassed in the questionnaires.

Primary *ex ante* experienced risk categories

Searching costs

Searching costs are *ex ante* costs which the principal incurs during the process of searching for an agent who is best suited to carry out the work, and who will add the best value to the work or services required. The principal not only compares the monetary costs but also attempts to envisage the risks involved in contracting with a specific agent.

Searching costs are also *ex ante* costs that an agent incurs when searching for information that allows him to tender accurately in order to maximise his *ex post* profits. The agent needs to take cognisance of the external environment, availability of resources, and possible unforeseen events which may not be anticipated by the principal.

Costs associated with contractual uncertainties

By their very nature all contracts are to some extent incomplete and are subject to contractual uncertainties. Contracts cannot provide for every possible outcome, and therefore the *ex post* handling of issues that were not foreseen in the *ex ante* agreement of the contract, inevitably increase risk and therefore TC. This risk is experienced due to the fact that disputes that arise *ex post* cannot be predicted during the calculation phase of rates in the tender bid.

Costs associated with the different contracting parties

Different agents will pose different levels of risk to the principal pertaining to quality, safety and performance. Equally, different principals will pose different levels of risk to the agent with regard to requirements and payment terms. These differing levels of

uncertainty and risk associated with the different contracting parties can be translated into costs, which will differ from one contracting party to another. Good examples of risk levels, to a greater or lesser degree, are safety requirements, interference with the other party's work, opportunistic behaviour as well as timeous or late payments.

Bargaining costs

During both the *ex ante* and the *ex post* phases of the contract, different parts, terms and conditions are negotiated. Some of these negotiations are expected or can be anticipated and planned for, such as yearly escalations, etc. Other negotiations are necessitated due to changing external conditions, increased requirements, reduced or poor performance as well as resource scarcities, which could not have been foreseen at the time of the initial contract negotiation.

These negotiations usually end up in the form of *bartering* or *bargaining*. However, parties handle these bargaining sessions differently, and some are more flexible than others. Consequently, the risk levels of engagement and maturity in the bargaining process differ from one party to another, and translate into different levels of risk and TCs.

Asymmetric/moral hazard costs

Moral hazard is a concept whereby parties will take risks if they have an incentive to do so. In doing so the parties might ignore the moral implications of their choices. Instead, they will do what benefits them the most. Moral hazard implies that the more a party feels insulated from risk, the higher the temptation towards opportunistic behaviour.

Asymmetric information relates to one party possessing information unavailable to the other party. This information can be used to take decisions and actions which the other party might not be expecting or is not prepared for. Parties might capitalise on this information to maximise their own profits, whilst the information is purposefully kept from the other contracting party.

Cost of disclosing information

Information that is disclosed can be seen as *in the public domain*, as this is available to parties outside the firm. This information can possibly become available to competitors, and firms are reluctant to make information available that might improve the level of competition in the market or dilute their own competitive advantage.

Disclosing information to a contracting party in a work relationship improves their future chances of more successful negotiations, should they decide to capitalise on this information. Parties therefore experience significant levels of risk and TCs in disclosing information to other contracting parties for fear of future opportunistic behaviour or competition.

Primary *ex post* experienced risk categories

Cost of measuring value and performance

To determine whether an agent successfully complies with product or service requirements, the quality, volume or safety performance of production need to be measured by the principal. On the other hand, agents need to verify these measurements, and ensure that the gain from their performance is above marginal costs and contributes positively to their net benefit. These forms of measuring or managing pose substantial costs which are not part of production, but instead amount to the *policing* thereof.

Cost of contract enforcement

Searching costs can occur under *ex post* conditions when the principal incurs costs in the action of *policing* the agent and searching for poor performance or non-conformance. These poor performances can reside in safety, quality, timing, cost or merely basic contractual requirements.

Cost of reputational risk

The outcome of any contracting relationship will influence future relationships between the contracting parties. The outcome of these relationships will be reflected upon in future. This is the risk that one party to a contract lose potential future contracts to the

other or even a third party. If a party has been exposed for being unethical or found cheating customers or suppliers, this risk can substantially tarnish that party's reputation.

Cost of legal action

The cost of legal action refers to the cost incurred when one party to a contract persuades a legal proceeding against the other party. One party thereby attempts to prosecute the other for non-conformance to a contractual agreement or condition.

Cost of opportunistic behaviour

Opportunistic behavior occurs in situations where one party utilises the possible advantage of superior knowledge, which is unknown to the other party. That party uses its asymmetric information condition in order to benefit itself or further its interests, and further fail to disclose such information to the other party.

Enforcement costs

Enforcement costs are incurred *ex post* when one party wants to ascertain itself that the other conforms, or give effect to the terms of the contract. It might also in cases of subsequent poor performance include the taking of appropriate action.

Interviewee screening

Due to the nature of the research problem which lies within the bounded rationality of corporate and private enterprises, it was necessary to first screen possible respondents through administrative questions to determine the characteristics of the interviewees' firms. This administrative section acted as qualifying criteria before the interviewee was required to respond to the entire contents of the questionnaire. Although this initial administrative questionnaire was rolled out simultaneously with the main body of the relevant target questions, respondents were requested to concentrate only on these questions until the interviewer turned his attention to the questions in the main body of the questionnaire. However, this did not lead to any interviewee being eliminated from the research. The administrative questions therefore only served the purpose of adding value to the main interview by selecting respondents who fit the criteria of direct participation in the tender submission or

evaluation process. This allowed for the initial elimination of unnecessary or irrelevant factors as well as personal interviewee bias.

Pilot interviews and questionnaire alterations

The main body of target questions consisted of two separate questionnaires that were targeted at principals and agents respectively. Both of these two populations were to be evaluated in order to obtain a balanced view from both ends of the tendering spread. It was predicted that both sets of questionnaires would be adapted after a pilot run of two interviews. However, this could only be done after the first four interviews. After interviewing a further two respondents, the agent questionnaire was adapted and questions were added for a second time. It was foreseen that this approach would facilitate the gradual elimination of factors which would have little or no significant impact on the successful adjudication and net benefit of the inter-firm contract. Unfortunately, it did not lead to the elimination of questions, but instead led to additional questions in order to quantify certain proportions in additional transaction costs identified. This created a robust framework that addressed only the relevant factors in the contract/transaction cost picture.

As indicated earlier, exceptions which exceeded the norm were experienced in terms of the sample as the very first interviewee was a consultant contracting directly for a principal firm. This qualified him for the principal questionnaire simply by virtue of the nature of his work, although he could be seen as an agent.

Although it was initially suspected that the sample of principals would mostly reside in the field of public companies, while the sample of agent companies would reside in the field of privately-held companies, this was very quickly found not to be the case. From the first pilot interviews it became evident that principal companies as well as agent companies would be found in both the public and private sectors.

Conducting the interviews

A non-probability quota sampling technique was used to illustrate the characteristics of particularly the principal and the agent in order to facilitate a comparison between the two. By comparing the two samples a balanced view of the transaction costs in the tendering process could be developed.

Twelve respondents were interviewed with the aim of gathering in-depth data relating to their perceptions surrounding the contracting process. The intention was that the twelve respondents would represent the two populations of principals and agents evenly with six interviews each. The researcher managed to interview four principals, and fortunately two consultants who were acting on behalf of principals as well as six agents. These interviews typically started with general questions and trivial conversation in order for the interviewer to gauge the level at which to engage with respondents. This determined the language proficiency on the part of the respondents in order to facilitate a clear understanding of the questions, and to avoid unnecessarily simple or complex vocabulary, which could either patronise or intimidate the interviewees. More intense and sensitive questions were asked towards the end of the interview, after the interviewees' confidence had been gained.

These interviews were initially recorded on a confidential basis, whilst respondents were offered the research findings on completion of the research project. These recordings were planned to be transcribed for evaluation and data-collection purposes. Interviews were individually held and respondents were sensitised to gradually allay their privacy and governance concerns. Only once the interviewees' fears and concerns were allayed and confidence in the interviewer established, did the interviewer start to address the pertinent questions of the research. This also ensured that any personal or individual bias of the interviewer through specific questions could be addressed early on in the interview process.

Several different issues were addressed during the interviews, which included but were not limited to the discussion and comparison of the different costs evident in the contract, i.e., compulsory costs, which are costs that both the principal and the agent incur, as well as complimentary costs, which are costs that one party incurs and the other party saves.

Further issues that were discussed at length were the costs and uncertainties related to labour, equipment, information, material, site characteristics, management, safety, etc. Unfortunately, due to the time expended in first conveying and then writing and assessing the data obtained through the interviews, the decision was made to only write down the interviewees' answers to the questions, instead of the initially planned route of recording and transcribing.

The questionnaire covered the four research questions with exploratory elaboration into all the necessary areas that required evaluation for possible sources of transaction costs.

Completed questionnaires

The responses from the questionnaires are included in Appendices 3 to 8. The researcher predominantly made use of a four-point Likert scale, which ranged from “strongly agree” (1) to “strongly disagree” (4) to measure the factors indicated earlier. The reason for only allowing a four-point Likert scale was to get a true understanding of the interviewees’ feelings, perceptions and subsequent reactions. It was purposefully made difficult for respondents to remain neutral. However, if the interviewer perceived respondents to be reluctant to answer any questions they were reminded that the questionnaire was voluntary and as for the questionnaire as a whole, they were free to refrain from answering any particular question. This reluctance to answer particular questions did occur, although only in a few isolated instances. The four-point Likert scale assisted in obtaining a general feel of people’s perceptions as well as the tendencies within the market as respondents had to state why they were representing either side of the scale.

Table 3 also indicates the perceived prominence of the different transaction costs such as information search, uncertainty, risk, and enforcement costs, as measured during the interviews.

4.7 Research bias, limitations and problems foreseen

The researcher’s previous knowledge and result expectations as well as the fact that he sensitised the respondents prior to the interviews, might have had an influence on the information received and resulted in slightly biased findings.

Not all respondents were employed on the same level within their respective companies, making it difficult to compare the results from the different respondents.

No interviewee was denied access to the main body of the questionnaire, as all were qualified for access after answering the administrative questions. Although this could have resulted in respondents being biased to some degree, this interaction and

sensitisation, and personal interaction before the main body of the questionnaire was explored, eliminated the problem of bounded rationality to a certain extent as respondents were familiarised with the necessary concepts and terminology during the first part of the interviews.

Public companies are expected to have privacy concerns with the research, and therefore comprehensive non-disclosure and confidentiality agreements have to be signed. This will result in some details being masked by manipulating numbers, although without distorting the true value thereof or omitting company details.

People not employed in the top management and executive levels of firms, are not expected to have as large an influence on decision-making as people employed in executive or director's roles. However, this might not apply to strong and influential characters on lower levels within companies.

It was not a just matter of convenience that the samples represented equal quotas or subgroups; instead it helped control the convenience factor within the samples to a certain extent as it was difficult to obtain the same sample size for both populations. The fact that the samples were of equal size could prevent the samples from being entirely representative of the wider population, as the total population size for both principals and agents could not be determined.

Chapter 5: Research results

This chapter contains the findings of the twelve interviews that were conducted in the format as described in chapter 4. The presentation, in table format, of the findings for each of the two populations, i.e., the principals and the agents, is set out by first providing a brief synopsis of their respective characteristics for easy reference and understanding. The findings of the in-depth interviews within the two populations are explained in more detail, and the information gathered from the interviews is then categorised around the four research questions and their respective and focused transaction costs.

Table 1: Summary description of companies

<u>Transaction side</u>	<u>Number of interviews</u>	<u>Description of companies</u>
Principal	4	<p>Company 3 is a private company, building water turbine power generation units in Zimbabwe, and selling power to the Zimbabwean government into their domestic grid.</p> <p>Company 5 is a publicly-held SA mining contractor company that provides mining services to other mining clients.</p> <p>Company 11 (respondents 11 and 12) is a publicly-held international mining company that owns and mines reserves in the USA, Australia, Africa and Europe.</p>
Third-party consultants to principals	2	<p>Company 2 is a one-man consultancy firm in SA, assisting mining house principals on commercial and management-related issues.</p> <p>Company 6 is a privately-held SA consultancy that assists mining houses on procurement and contract management issues.</p>
Agent	5	<p>Company 1 is a publicly-held SA contract civil construction company that provides construction services to clients in this industry.</p> <p>Companies 4 (respondents 4 and 7) is a publicly-held international contracting firm that provide both mining and civil construction services to reserve owners in Africa.</p> <p>Company 8 is a publicly-held SA contract mining firm that provides mining services to reserve owners in SA.</p> <p>Company 9 is an international privately-held electrical contracting firm that installs electrical switchgear in many parts of Africa.</p>

Third-party consultant to agents	1	Company 10 is a privately-held international consulting firm that assists agricultural, mining and construction firms to prepare tender bids. It does project execution across several continents.
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Table 2 shows a summary of the different people interviewed.

Table 2: Summary description of people interviewed

<u>Transaction side</u>	<u>Co</u>	<u>Industry</u>	<u>Years experience</u>	<u>Tender exposure</u>	<u>Role in tendering</u>	<u>Ave size tenders</u>	<u>Level in Co</u>
Agent	1	Mining	10	Several per month	Main purpose	35 million ZAR	Executive level
Principal third-party	2	Mining consultancy	22	1 in six months	Supportive role	Several 100 million ZAR	Executive level
Principal	3	Construction	10	1 per annum	Supportive role	<10 million USD	Directors level
Agent	4	Mining	9	Several per month	Main purpose	Several 100 million ZAR	Functional management
Principal	5	Mining	27	1 per month	Supportive role	>10 million ZAR	Functional management
Principal third-party	6	Consultancy	10	Several per month	Main purpose	<50k to >100 million ZAR	Functional management
Agent	7	Mining	20	Several per month	Supportive role	Several 100 million ZAR	Executive level
Agent	8	Mining	5	1 per month	Main purpose	Several 100 million ZAR	Executive level
Agent	9	Construction	8	Several per month	Main purpose	10mil to 100 million ZAR	Directors level

Agent	10	Agricultural, mining & construction consultancy	30	1 in six months	Supportive role	Less than 10 million ZAR	Functional management
Principal	11	Mining procurement/ supply-chain	8	1 in six months	Supportive role	Less than 50 thousand ZAR	Line management
Principal	12	Mining production	15	1 in six months	Supportive role	Several 100 million ZAR	Line management

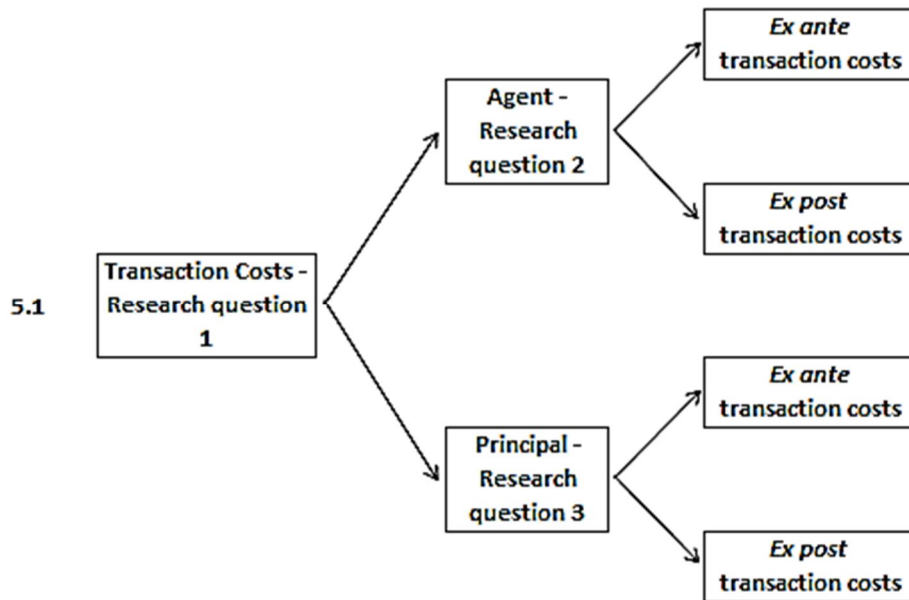
The respondents were numbered 1 to 12 in order of sequence as they were interviewed. Similarly the respective companies were numbered the same as the respondent numbers. Also note that respondents 7 and 8, and also respondents 11 and 12 were respectively from the same companies.

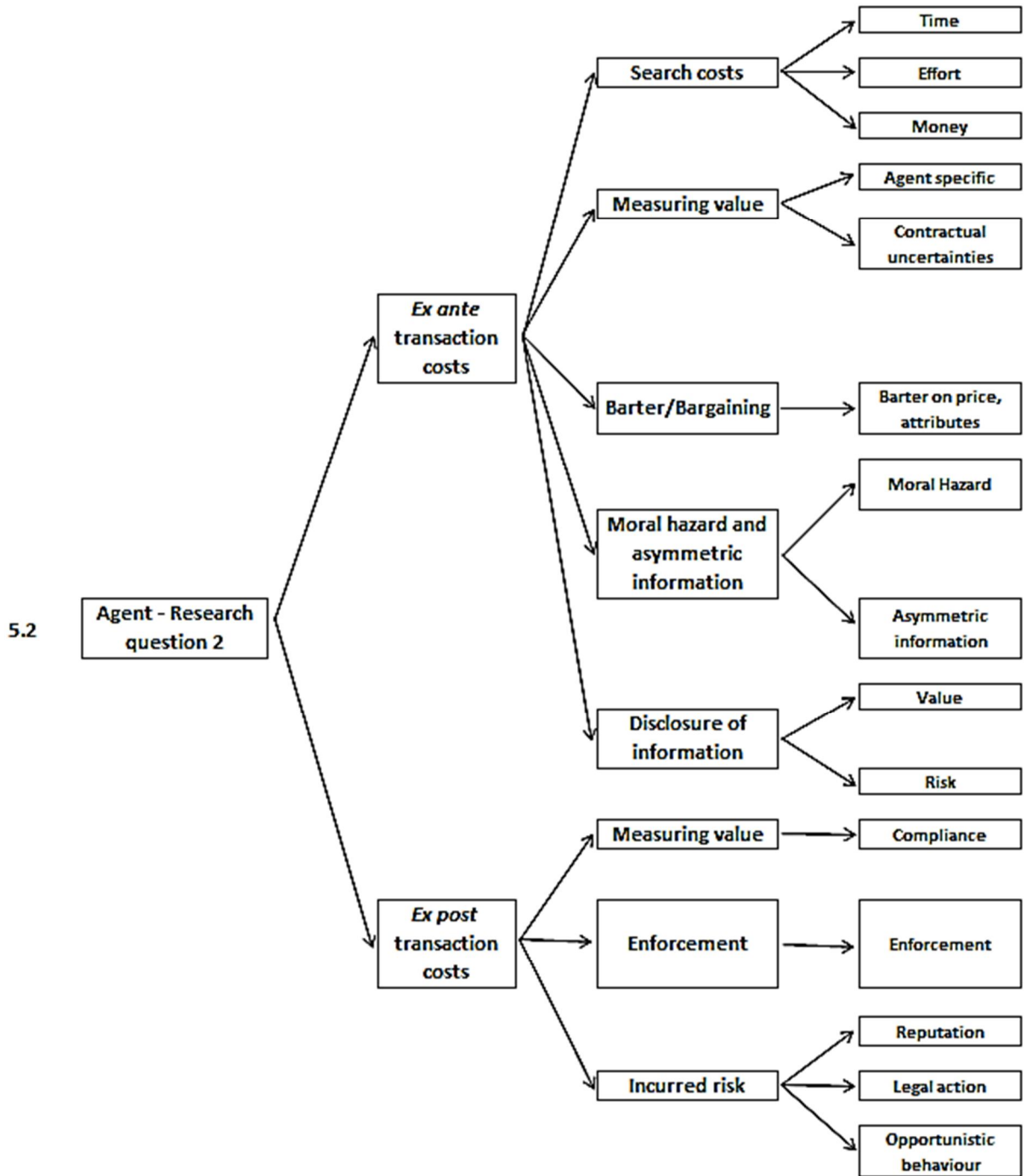
Questions testing and verifying the different transaction costs

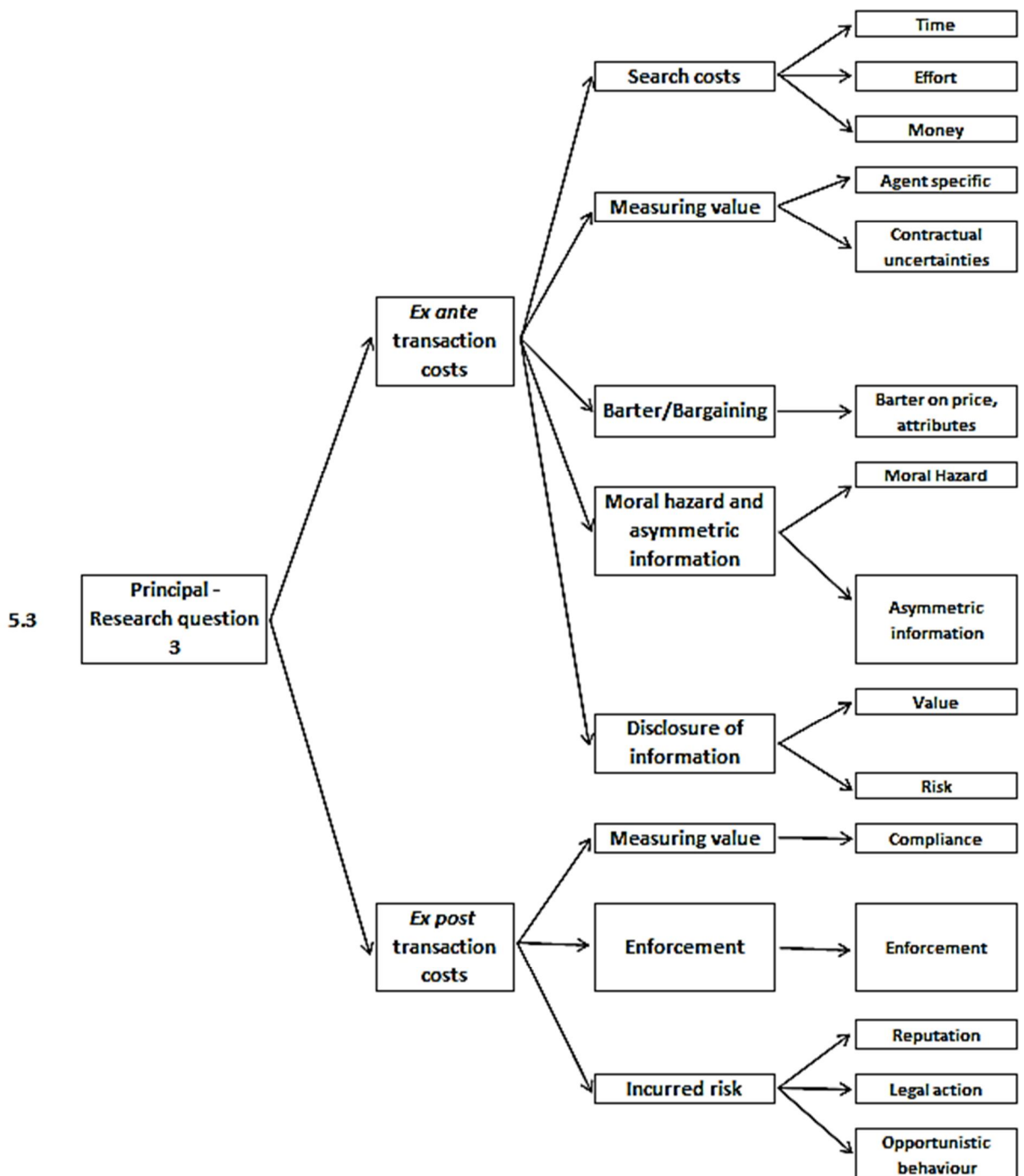
In order to fully explore the TCs experienced by each interviewee, the researcher broadly enquired about different factors that might pose risk or uncertainty to the particular party. Although this list is not exhaustive, it is thorough as it was tested by the researcher in the five pilot interviews. Although the pilot interviews did not succeed in singling out irrelevant factors and questions, they did result in the inclusion of additional criteria to be tested and explored.

Figure 1 diagrammatically presents the structure followed in the evaluation of the research questions. The structure is presented to allow for ease of reading and analysis, and further helps to keep focus on the research questions.

Figure 1: Composition of the findings







Section 5.1 (Figure 1: Composition of the findings) explores the different *ex ante* and *ex post* uncertainties and risks perceived in the tender process. It further shows how these risks can be evaluated and measured, and explains how principals and agents interact and differ around these particular risks. The application of these risks is tested, provides proof of their validity, and focuses on what the most significant transaction costs are that influence both principal and agent perceptions of value,

which directly relates to research question 1. The evidence that supports the affirmation that certain risks are perceived by parties as costs is explored.

Section 5.2 focuses on how the agent can increase the value of his quote by reducing associated transaction costs. This section therefore directly relates to research question 2. In order to evaluate how the agent can increase the value of his bid requires an in-depth assessment of the risks and uncertainties as perceived and experienced by the principal. These risks are then tested to determine whether the agent currently perceives these factors as risks to his welfare, as well as the extent thereof.

Section 5.3 focuses on how the principal can influence tendering agents to perceive less risk, and subsequently reduce the cost of their tender bids. This section therefore directly relates to research question 3. The evaluation of how the principal can reduce the costs associated with the submitted bid requires an in-depth assessment of the risks and uncertainties as perceived and experienced by the agent. Within the world of the principal these risks are then tested to determine whether he currently sees these factors as risks to his welfare, as well as the extent thereof.

Research questions revisited

The research questions are quoted below for ease of reference:

Question 1: What are the most significant transaction costs influencing the principal's and agent's perceptions of value before and during the tendering process?

Question 2: How can the agent increase the value of his quote by reducing the transaction cost associated with his quote, as perceived and experienced by the principal?

Question 3: How can the principal influence all the tendering agents before and during the tender process to perceive and expect lower transaction costs, in order to reduce the cost implication of their submitted quotes?

Question 4: How can both the principal and the agent increase the net benefit associated with their mutual contract?

5.1 Uncertainties/risks experienced in tender process (research question 1)

The framework shown in table 1 was used in the two interview questionnaires and addresses all the transactional cost risks associated with the *ex ante* tendering as well as the *ex post* contract execution stages. These *ex ante* and *ex post* costs were addressed individually and sequentially in the questionnaire, as they would appear in the different phases of the tendering and execution processes.

Table 3: *Ex ante* and *ex post* TC categories addressed in interviews

Ex ante					Ex post		
Search costs (incur costs now in tender preparation)	Experienced uncertainties/risk	Barter/ Bargaining (discounts off initial price)	Moral hazard/ asymmetric info	Disclosing info with	Measuring value	Enforcement	Risk (of incurring cost later)

It was previously indicated that these costs were mainly tested through Likert scale questions. Most of these costs were then further verified through quantifying the extent thereof as proof of their validity. The researcher achieved this by evaluating the perceived risk associated with each possible transaction cost item. This was done by asking respondents to provide specific quantified answers to questions requesting percentages, margins, values, etc.

Addressing these different costs in two different questionnaires one or both of the principals and agents further assisted in explaining how principals and agents interact and differ around these particular risks.

The *ex ante* TC categories addressed in the interviews were search costs, measuring costs, bargaining costs, asymmetric information costs and disclosure costs. The *ex post* TC categories addressed in the interviews were measuring costs, enforcement costs and risk costs.

Each of the above transaction costs were broken down into different categories in order to throw some light on the true nature thereof, as indicated in table 3.

Table 4: TCs associated with the entire tendering process

Ex ante										Ex post				
Search costs (incur/add costs now)			Measuring value		Barter/ Bargaining	Moral hazard/ asymmetric info		Disclosure info with		Measuring value	Enforcement	Risk (of incurring cost later)		
Time spent delay	Effort	Money	Contract uncertainties	Agent spec risk	Bargaining on Price/ Attributes/T&C's	Moral Hz	Asym. Info	Value	Risk	Compliance	Enforcement	Reputational	Legal action/costs	Opp behaviour

The TCs experienced by each company were further examined by covering the 19 sub-categories as indicated in table 4, i.e., time-delay costs in searching for information, additional effort and monetary costs in searching for information, inadequate time and information costs, costs associated with contract uncertainties and firm-specific risks, the costs of bargaining over price, product attributes and the terms and conditions, moral hazard and asymmetric information costs, information disclosure costs in bargaining and future tendering, measuring costs of evaluating each party's adherence to the contract, the costs in enforcing contractual obligations, as well as the costs associated with the risk in reputation, opportunistic behaviour and that of possible legal action.

Research question 1 deals with the exploration of the costly experiences of firms within the tender process. However, such measures depend on the structure and process of each firm's respective tendering process, which may differ from one firm to another. These differences are found to occur within the same industry or even within the same firm (respondents 4 and 9). It was therefore necessary to enquire extensively about the interviewee and his/her firm's perceived cost between different transactional risks. A few of these questions are:

Principal questionnaire, question 15:

Rank in order of importance the factors you deem the three most important to evaluate a supplier's ability to fulfill the obligations under the contract.

Agent questionnaire, question 11:

What are the three most important problems experienced when completing tenders?

Agent questionnaire, question 19:

Rank in order of importance, the three factors you deem the most important to evaluate the principal's ability to reliably fulfill obligations and pay for the services rendered.

For ease of understanding and to assist in summarising the information obtained through the interviews, the results were normalised by re-working the answers received. This was done by allocating a mathematical number to the different possible responses received for each question. By doing so, a question regarding a specific transaction cost with equal numbers of positive and negative responses will add up to a value of 0 for that particular TC. The value allocation was done by assigning a positive value to factors which respondents indicated to pose some kind of transactional cost to them. Similarly, a negative value was allocated to factors which respondents perceived to pose no risk, uncertainty or cost.

All the questions were categorised under the different TCs, and the total value for each question added up. When the value of all the questions were added under the TCs they refer to, a larger overall value to a TC would indicate that the specific TCs pose a larger risk to all firms interviewed, and the weight of the value then indicates the importance to the firms interviewed. The combined values were normalised for the number of questions, as not all TCs were represented by the same number of questions.

Table 4 indicates the mean values of the principal and agent firms on each of the TCs indicated above, in which a higher value would indicate a higher perceived risk and TC.

Table 5: Summary description of results from principals and agents

	Ex ante										Ex post				
	Search costs (incur costs now in tender preparation)		Experienced uncertainties/ risk		Barter/ Bargaining (discounts off initial price)	Moral hazard/ asymmetric info		Disclosing info with		Measuring value	Enforcement	Risk (of incurring cost later)			
	Add Time spent/ delay	Add Effort	Contract uncertain- ties	Princip- al spec risk	Terms & conditions	Moral Hz	Asym. Info	Bargainig Value	Future Risk	Value of services	Principal obligations/ payments	Reputa- tional	Legal action/ costs	Opp behaviour	
Total normalised value	19	16	21	32	-6	25	0	4	4	0	13	4	24	25	
No of responses:	5	4	6	7	1	4	0	1	1	0	3	1	5	6	
Ave Value:	4	4	4	5	-6	6	0	4	0	0	4	4	5	4	
Agent Ranking:	3	3	3	2		1		3			3	3	2	3	
Total normalised value	7	22	9	32	-3	5	5	0	3	-9	14	26	31	30	
No of responses:	7	7	4	4	5	5	1	0	1	2	5	5	8	15	
Ave Value:	1	3	0	0	0	1	5	0	3	-5	3	5	4	2	
Principal Ranking:	5	3				5	1		3		3	1	2	4	

Similarly, table 5 indicates the average values of the agent firms on each of the TCs indicated above, in which a higher value would again indicate a higher perceived risk and cost. It is of importance to note in table 5 the difference or agreement between the perception of principals and agents on some of these TCs. For example, it is clear that contract-specific risks as well as party-specific risks play a significant role in the TCs experienced by agents, although for principals this does not pose a material risk with regard to costs

It is also necessary at this point to refer to the explanation earlier in section 4.4 of the different transaction costs in order to facilitate ease of reference and understanding of the following sections.

5.2 The findings on agents explored (research question 2)

To evaluate how the agent can increase the value of his bid required an in-depth evaluation of the risks and uncertainties as perceived and experienced by the principal. These different risks as experienced by principals would determine which agent's prices and qualifications are selected as they are perceived to create the biggest net benefit for the principal. If the agent can have an influence on how the

principal perceives the risks associated with his submission, he can have an influence on whether his tender bid is selected or not.

Table 6 below shows the different TCs tested, the total value allocated by all the different principal firms, as well as the ranking in order of importance due to the magnitude of the value allocated to the particular TC. Only the TCs with the highest numbers were included in the answer when evaluating research question 2. For practical reasons, and to minimise any trivial factors, TCs with very low responses were excluded from the answer.

Table 6: Summary of principal firm TC answers

		Ex ante										Ex post								
		Search costs (incur/add costs now)			Measuring value		Barter/ Bargaining		Moral hazard/ asymmetric info		Disclosure info with		Measuring value		Enforcement			Risk (of incurring cost later)		
		Time spent delay	Effort	Money	Contract uncertainties	Agent spec risk	Bargaining on Price/ Attributes/T&C's		Moral Hz	Asym. Info	Value	Risk	Compliance	Enforcement	Reputational	Legal action/ costs	Opp behaviour			
Value:		1	3	1	0	0	0	1	5	0	3	-5	3	5	4	2				
Ranking:		5	3	5				5	1		3		3	1	2	4				

In order for agents to influence principals to accept their tender submissions and award contracts to them, agents need to address the risks associated with their bids. Minimising these risks means that an agent can influence a principal to award a contract to him, although he might not have submitted the lowest bid. In this way an agent will reduce the elasticity of his submitted price. In other words, an agent might be able to increase the price of his bid without losing the sale or contract. The only way this can be achieved is by increasing the net benefit associated with the bid to the principal. According to the model in chapter 4, an agent can improve the net benefit by reducing the TC associated with his bid.

The methods available to an agent to reduce the TCs associated with his/her tender bid can be translated from the TCs identified above, with high costs to principals.

The true existence of TCs in this sense was tested with question 17 of the principal questionnaire whether they evaluate any factors other than cost in order to determine

the value of price, to which principal respondents had to reply either “yes” or “no”. It was found after evaluation that 100% of all principal respondents, including consultants to principals, responded “yes”, which confirms the existence of transactional costs or risk factors to the principal.

To emphasise this further, a comment is quoted which was made by interviewee 6, who works for a third-party consultant to principal firms: “the more risk you pass on to the agent, the more cost will be incurred [by the principal]”. The same is obviously true for agents. In other words, the more risk an agent poses to a principal, the higher the TC associated with the tender and the less likely the agent is to be awarded the contract, as this translates into a lower net benefit to the principal.

TC in possible moral hazard

Classic proof of the existence of moral hazard resides in quoting principal respondent 3, who reflected on his experiences of moral hazard in the past. He pointed out that some agents would take certain immoral risks, provided that they have the incentive to do so. He cited one particular instance where an agent with monopoly power charges ridiculous margins, thereby ignoring the moral implications of these high margins while trying to do what would benefit him most. He further concluded that in such a case, as the principal they would “disintermediate...to do it ourselves.”

The concept of asymmetric information in the form of moral hazard was tested in the principal questionnaire to determine the true extent of the problem. For this reason principals were asked whether agents usually ask for additional information. To this question 66% of the principals responded positively and the rest negatively. This clearly indicates that more than half of all RFTs do not include sufficient information in order for agents to accurately calculate a tender (principal questionnaire, question 1).

With this in mind, a second question was asked with the purpose of determining whether agents ask for additional information, with the secondary aim of receiving additional time for submission. In question 2 of the principal questionnaire, respondents were asked to comment on whether the request for additional information is usually well-founded and contributes positively to the tendering process. Interestingly, all principal respondents, except one, responded positively, indicating that in their opinion these requests by agents are always well-founded. This tends to

create the impression that agents do not ask for additional information that can later be used against the principal as moral hazard, but do so because they actually need the information. However, this could lead to concern around possible moral hazard to the detriment of the agent if at the time of distributing the request for tender (RFT), the principal was aware of the possible need for additional information but nevertheless decided to refrain from supplying this information.

In order to determine whether the principal does this deliberately to ensure that certain confidential information is only divulged to agents who actually intend submitting a tender, the intentions of the principal needed to be tested further. For this reason, principals were asked an additional question regarding their preparation for tender requests. In question 7 of the principal questionnaire, respondents were asked whether they perform a detailed internal estimation of the likely expected rates/prices before issuing a request for tender (RFT). All the principals but one responded positively that they do perform detailed price estimations similar to those done by the agents.

In question 22 of the principal questionnaire, respondents were asked whether in the case of incomplete information supplied by an agent they request further detailed information or immediately reject the quote. All the principals indicated that they do request more detail, which sheds some light on their intentions.

TC in the *ex ante* searching for information on agents

Most of the respondents interviewed felt that they fall within the category of *experience goods*, which creates a TC in its own right as principals find it difficult to judge the quality of products or services with foresight. The only way to do so is by *searching* for information on the agent's prior work performances.

Respondent 2 made a similar comment when asked about principal risks in general. He found it fairly difficult to make sure the agent has the mid-level skills required to do the required work.

Another possible *information searching* TC experienced by principals is that of finding and supplying all the information requested by agents. Principals might not possess the information requested or might not be willing to share that information. The

responses to question 2 of the principal questionnaire, also quoted above, indicate that the request for information by agents is usually well-founded, because it would reduce the cost of having to search for that information.

It is interesting to note that the request for additional information usually results in the need for additional time to tender, as the additional information has to be evaluated, verified and then used in the tender calculations. The impact of extended time on submission was tested in question 5 of the principal questionnaire, in which principals were asked whether any postponement of the submission date would cause principals to incur additional costs. Every principal who responded to the question clearly indicated that this indeed was the case.

This was further tested with a quantifying question, question 6 of the principal questionnaire, where respondents were asked that in the event that the project schedule should be postponed, what percentage of the total contract value the principal incurs as additional costs over and above the original projects costs, on average. Of the three respondents who answered the question, only one indicated that he does incur an additional 10% cost, whilst the others said they incurred no additional costs. This shows that the cost implication of time can be irrelevant when compared to the cost of searching for information.

An additional search cost that cannot be ignored is that of the tender evaluation stage. In question 11 of the principal questionnaire, respondents were asked to indicate the average number of man-hours needed to evaluate a tender/quote. The answers ranged between 1 and 240 hours, which indicates that the effect on some can be minimal as opposed to others who experienced it as very costly.

While interviewing agents, it transpired that an interesting development was beginning to emerge in the tender submission phase, notably that principals require agents to submit their tenders online; agents expressed their concern that this may lead to significant and unnecessary TCs. This phenomenon was tested in question 12 of the principal questionnaire when principals were asked to respond to the statement that quotes are to be submitted by suppliers online, to which they responded that online submission was not a strict requirement. Nevertheless, this concern was addressed in more detail under research question 3.

In question 14 of the principal questionnaire, principals were asked whether incomplete or late submissions posed the biggest problem, to which 66% of the principals answered that incomplete rather than late submissions are responsible for higher TCs.

In question 22 of the principal questionnaire, the issue of TCs relating to incomplete information supplied to principals was taken a step further, and respondents were asked whether in the case of incomplete information supplied with a tender they would request further detailed information or immediately reject the quote. All the principals responded that they always request further detailed information before considering rejecting a quote.

TC in *ex post* enforcement and legal costs

Principals were asked to respond to the statement whether it is important to request performance guarantees from suppliers. Except for one principal, more than 80% responded positively, whilst more than half responded by saying they “strongly agree”. This most likely indicates that due to prior experience in this regard performance guarantees were indeed required (principal questionnaire, question 19).

Question 19 was followed by a quantifying question, question 20 of the principal questionnaire, that if the principal does require guarantees, what percentage of the total contract value would be required as a performance guarantee. The percentages of total contract value supplied varied between 2% and 30%, whilst the median was 12.5%.

In order to gain a better understanding of the principals’ reasoning and arguments for payment guarantees, they were asked under what conditions the required guarantee could be reduced. This would highlight the conditions that agents should cultivate, and which they should steer away from as they posed higher TCs to the principal (principal questionnaire, question 21). The following responses were noted and are worth mentioning:

Respondent 2 indicated that the decision to reduce the performance guarantee depends on the **contractor’s display of skills in the tender, unless he** [the agent] **can prove the contrary** [emphasis added].

Respondent 5 indicated that a credible **past experience** [emphasis added] can waive a percentage, in which case the performance guarantee would not be seen as negotiable: **not any accreditation of some sort** [emphasis added].

At this point it is necessary to point out the difference in responses between principals and agents to the question as to whether they would allow actual work to commence before the contract has been formally signed. In the case of principals, over 80% were adamant that this would never be allowed; but in the case of agents, 50% indicated that they were not only willing, but were actually allowing work to commence before the contract has been formally signed (principal questionnaire, question 27; agent questionnaire, questions 18 and 33).

Question 29 of the principal questionnaire was asked to determine whether principals have actual enforcement strategies in place to address non-conformance by agents, and whether they actively measure agents for compliance. Respondents were asked the open-ended question how they measure the supplier's contractual performance. A few of the responses received are as follows:

Respondent 2 indicated that agents were measured on an itemised bill, per line item. He added that in the case of large mining or service contracts, agents were measured on their daily and monthly performance.

Respondent 5 clearly distinguished between agents providing services, and agents providing products. In the case of services, he measures on **quality, safety** [emphasis added] and time. In the case of products, he measures “**on-time**” [emphasis added] and quality.

Respondent 6 insisted that performance be measured on **quality and schedule** [emphasis added].

To take the enforcement of the contract to the final level, respondents were questioned regarding the ways in which they enforce existing contracts. Respondents could choose between either withholding payments or taking legal action. It is worth noting that each and every principal responded that they would enforce the contract by withholding payments, instead of taking legal action (principal questionnaire, question 31).

This supports the perception of agents that late payments are the most commonly experienced opportunistic behaviour from principals (agent questionnaire, question 47).

TC in *ex post* risk on reputation and opportunistic behaviour

In question 15 of the principal questionnaire, respondents were asked to rank in order of importance the factors they deem most important to evaluate a supplier's ability to fulfill the obligations under the contract. These obligations would also include the responsibility to uphold the principal's reputation amongst shareholders, and values in the public domain. In their responses, 66% of all interviewees indicated that **past experience** is the most important factor on which to evaluate agents. A further 16% indicated that the agent's **brand reputation** is the most important factor.

The risk associated with an agent's reputation was explained to respondents in detail in order to help them grasp the concept, which then enabled them to contribute through their experiences. Referring to research question 2 and to determine how agents can increase the value of their quotes, principals were asked in question 36 how often in the past they experienced opportunistic behaviour from agents. All principals indicated that they have in the past experienced opportunistic behaviour from agents. More than 66% indicated that this happens often, whilst the remainder indicated that this seldom happens. Additional questions were posed to the respondents to determine the extent of this behaviour, and in question 37 of the principal questionnaire, principals were asked to indicate the most regularly experienced opportunistic behaviour. The following responses were received:

Respondent 2 indicated that agents were regularly **overstating asset performance** [emphasis added].

Respondent 3 pointed out that agents would charge **exceptionally high margins** [emphasis added] when they know they are the preferred suppliers.

Respondent 5 argued that once an agent's **high** [emphasis added] prices are accepted, they will complain and indicate *ex post* that **certain requirements were not** [emphasis added] allowed for **in their initial price** [emphasis added].

Respondent 6 complained that agents were **unethical** [emphasis added] in the **measurement of work done** [emphasis added].

The effect of opportunistic behaviour on principals was further tested in relation to the concept of disputes. In question 32 of the principal questionnaire, respondents were asked how often disputes arise, to which all but one responded that disputes do occur. In a further attempt to understand how principals deal with these disputes, they were asked in question 30 how they manage any disputes resulting from their relationships with suppliers. Again 50% of the respondents indicated that they prefer to address these on an ad hoc basis, whilst the other half said that they primarily address these strictly in accordance with the contract.

A very important part of testing possible sources of opportunistic behaviour is by evaluating the extent of site or project-specific investments and the associated switching costs, as these would determine whether one party is taking advantage of the other. The cost of terminating the contract could prove to be higher than the cost associated with the TCs should one party through opportunistic behaviour wish to extricate himself from the contract.

In question 39, principals were asked to indicate what relationship-specific issues exist on the principal's side of the contract that prevent him from changing suppliers. In question 40, the respondents were then asked to indicate what switching costs the principal would experience when switching from one supplier to another in the event of non-conformance. If the TCs associated with the opportunistic behaviour prove to be less than the switching cost, this would put the agent in a position to exercise opportunistic behaviour. The responses to the two questions are summarised below.

Principal 2 pointed out that there would be no contractor on site during the transfer period since he cannot have both [contractors] working at the same time. He further added that this translates into **significant financial implications** [emphasis added]. He summarised that the most important switching costs would be **underperformance on the product** [emphasis added] as well as negative **reputational damage** [emphasis added] to downstream principals.

Respondent 3 did not comment on any switching costs.

Respondent 5 indicated that the financial switching costs experienced were those of **site de-establishment** [emphasis added] as well as **retrenchments** [emphasis added]. He added that operationally he would incur the costs of **shortage** [emphasis added] or loss **of products** [emphasis added] during the period the previous contractor de-establishes and the new contractor establishes on site. He added that besides the **disruptions in production** [emphasis added] and supply, he would also incur loss of knowledge, experience, and **intellectual experience** [emphasis added].

Respondent 6 indicated that familiarity with the agent's employees and **de-establishment costs** [emphasis added] were switching costs he experienced. He also highlighted the efforts required to enforce retention and performance guarantees.

A follow-up question on the issue of site-specific investments yielded important information as to whether the risk involved in site-specific investments for both parties are negotiated. All principals bar one indicated that this will definitely or most likely be the case (principal questionnaire, question 43).

As to whether principals could expect to pay reduced rates or lower prices in the event of poor quality or performance from the supplier, the responses were diverse and no specific conclusion could be reached (principal questionnaire, question 41).

Research question 2 summarised

Research question 2: "How can the agent increase the value of his quote by reducing the transaction cost associated with his quote, as perceived and experienced by the principal?" This question can be summarised as follows:

Ex ante measures which influence principals to associate a higher value and lower costs with a submitted tender:

1. **Moral hazard:** Agents should request all relevant additional information, as principals expect agents who show a keen interest in the project.
2. **Searching for information:** To reduce the risk and uncertainty associated with past performance, the agent should always provide all relevant information on prior work performance. Proof of mid-level skills and experience must be provided to the principal as it is on this level that most interaction will take place. If possible,

every effort should be made to submit timeously without asking for extension of time.

Ex post measures which influence principals to associate a higher value and lower costs with a submitted tender:

1. **Enforcement and legal costs:** The agent should provide accurate evidence of his abilities, and provide performance guarantees, within reason, whether requested or not. He should not expect any accreditation to prove his reliability to the principal. Any risk the principal may perceive should be mitigated by proving the quality of the product or service and undertaking timeous delivery.
2. **Reputational and opportunistic behaviour costs:** The agent should fulfill his promise to preserve the principal's reputation in the public domain, and earn and maintain his trust. Even if he is a monopoly, he should nevertheless charge fair margins and be clear and frank about what is included or excluded from the price; the principal will in any event discover what margins are the norm.

5.3 The findings on principals explored (research question 3)

The question of how the principal can influence the tendering agents to perceive less risk, and subsequently reduce the cost of their tender bids, directly relates to research question 3. In order to evaluate how the principal can reduce the costs associated with the bids submitted by agents, requires an in-depth evaluation of the risks and uncertainties as perceived and experienced by agents. These different risks as experienced by agents will determine the prices and qualifications they submit to the principal. If the principal can have an influence on these risks, he can have an influence on the prices submitted to him.

Table 7 below shows the different TCs tested, the total value allocated by all agent firms, as well as the ranking in order of importance due to the extent of the value allocated to the particular TC. When evaluating research question 3, only TCs with the highest numbers were incorporated in the answer. For practical reasons, and to minimise all the trivial factors, TCs with very low responses were excluded from the answer.

Table 7: Summary of agent firm TC answers

	Ex ante										Ex post				
	Search costs (Incur costs now in tender preparation)			Experienced uncertainties/risk		Barter/ Bargaining (discounts)	Moral hazard/ asymmetric info		Disclosing info with		Measuring value	Enforcement	Risk (of incurring cost later)		
	Add Time spent/ delay	Add Effort	Add Money spent	Contract uncertainties	Principal spec risk	Terms & conditions	Moral Hz	Asym. Info	Bargaining Value	Future Risk	Value of services	Principal obligations/ payments	Reputational	Legal action/ costs	Opp behaviour
Value:	4	4	0	4	5	-6	6	0	4	0	0	4	4	5	4
Ranking:	3	3		3	2		1		3			3	3	2	3

In order for principals to influence agents to reduce the rates submitted in their tender bids, they need to address the risks identified above as TCs with high costs. The true existence of TCs were evaluated with question 23 of the agent questionnaire whether agents evaluate factors other than cost to determine the value of price, to which respondents had to reply either “yes” or “no”. It was found that 83% of all agents responded “yes”, which confirms the existence of non-monetary costs as risk factors.

The nature and existence of TCs incurred by agents can be seen in a comment made by interviewee 6 who works for a third-party consultant to principal firms. He said that the more risk you pass on to the agent, the more cost will be incurred by the principal. The same person later commented that contract agents, namely third-party consultants who manage the contracts on the principal’s behalf, must **understand the principle of risk, which if they do not, it is to their [the principal’s] own detriment** [emphasis added]. Interviewee 8 also clearly supported the TC concept when he responded to a direct question from the interviewer as to how principals can incur lower rates from agents: he recommended **more detail in the BOQ** [emphasis added].

TC due to insufficient information, or having to search for information in order to tender

In response to a testing question whether the information supplied by principals is usually sufficiently adequate to calculate accurate tenders, without exception all the companies interviewed responded that the information supplied is seldom adequate (agent questionnaire, question 1).

This is supported by a further question posed to agents: “what are the three most important problems experienced when completing tenders?” Half of the agents

responded that inadequate information is the most important problem (agent questionnaire, question 7).

Another aspect of information search that needs to be evaluated is the recent tendency towards online submissions. Although principals indicated that this does not happen, it was tested with agents to determine their sentiments as some of them indicated the opposite. In question 16 of the agent questionnaire, respondents were asked whether they prefer to submit tenders electronically online. Only 33% indicated that they would prefer to submit their tenders online. It is very important to note that 50% of the agents responded quite strongly by stating that they “strongly disagree.” Those agents were asked to elaborate, and respondent 4 was adamant that in the case of online submissions there is no way of emphasising or substantiating certain points and advantages of the submission.

The lack of information is demonstrated clearly by interviewee 1 who stated that the principal does not understand what information the contractor or agent requires, and that the reason is that parties do not meet before the request for tender (RFT) is drafted. He suggested that prior communication could help principals to compile more comprehensive and complete tender documents.

With regard to any additional effort or transaction costs incurred due to incomplete information supplied with tenders, agents were asked how often it is necessary to indicate to principals that non-conformance was a result of the principals’ information being incorrect, inadequate or misleading at the time of tender. More than 80% of the agents responded that this does happen from time to time (agent questionnaire, question 43).

TC in moral hazard

Respondents were asked several different questions that implied the existence of asymmetric information in the form of moral hazard.

In response to question 2 of the agent questionnaire whether in the case where additional information has been requested it is usually adequately supplied, and allows the supplier to accurately calculate the tender, more than 30% of the agents replied negatively.

The answers above had to be interrogated further, and after the pilot interviews the following question was added to the agent questionnaire: “If information is still inadequately supplied [after additional information was initially requested and provided], do you allow for the remaining uncertainties in your tender rates, or do you decide not to tender?”, to which 75% of the respondents indicated that they usually allow for this remaining uncertainty in their tender rates, and would still submit a tender (agent questionnaire, question 3) .

The above questions are supported by question 11 of the agent questionnaire that enquired about the three most important problems experienced when completing tenders. As indicated earlier, 50% of the respondents stated that inadequate information was the most important problem experienced. This further emphasises the uncertainty and risk experienced by agents when insufficient information is provided to them. A third-party consultant to principals, interviewee 6, elaborated on this specific risk of moral hazard that is passed on to agents by principals, and said that the more risk a principal passes on to the agent, the more cost will be incurred. Agents seemed to view this as the intentional withholding of information to use to their disadvantage at a later stage.

Question 20 of the agent questionnaire focused on how agents would hedge themselves against a possible moral hazard phenomenon and how they would compensate or allow for unforeseen problems in fulfilling their obligations during the contract period, to which agents had to respond by giving their “remarks.” Respondent 1 indicated that he would add a percentage-of-risk premium; respondent 7 opted for up-front payments; and respondent 4 said he would specify it in the qualifications letter. All these proposed remedies would result in agents pinning principals down to the assumptions made on the incomplete information supplied at the time of tender submission.

TC in principal-specific risk

The risks associated with a particular principal compared with others in the same industry are critical in terms of the transactional costs incurred. For this reason the TC topic *Principal-specific risks* is one the researcher intended to interrogate thoroughly.

Respondents were firstly asked whether they would start working on a particular project before the contract has been formally signed. This would determine how sensitive and exposed agents in fact are, as the signed contracts should shield them against a degree of exploitation. Half of the agents responded that they would commence the work before the contract has been officially signed. The question was asked twice using slightly different wording in order to eliminate interviewee bias which may result in different answers. Both questions received similar answers indicating the authenticity of the responses (agent questionnaire, questions 18 & 33).

In a quantifying question respondents were asked what percentage of the total contract value of the submission is dependent on the risk associated with a specific principal. The percentages provided differed from 2% and 13% with an average mark-up of just over 6%. All agents responded to the question by providing the interviewer with a percentage, which is taken as proof that that particular TC does in fact exist. It also reinforces the question quoted earlier as to whether agents evaluate any factors other than cost in order to determine the value of the price, to which the responses were overwhelmingly in the affirmative (agent questionnaire, question 22).

A further question focusing on the weighting percentage attached to non-price factors in determining mark-up was quantified in question 23 of the agent questionnaire and it was evident that more than 15% of the total mark-up added by agents was attributable to non-price factors.

Regarding principal-specific risks, an interesting response was received from interviewee 8 when asked how he would measure the principal's participation in the contract. He responded that from past experience it is clear that the relationship with principals is not viewed as a partnership. This validates the fact that TCs associated with specific principals can differ from principal to principal as it is measured through negotiation. Three additional questions were asked to further test the principal-specific risks:

Question 37: Will disputes experienced with a specific principal in the past influence future rates submitted to the same principal by adding an additional premium?

Question 38: When very strict client requirements were experienced with a specific principal in the past (e.g. specific safety requirements), will this influence future rates submitted to the same principal by adding an additional premium?

Question 39: When you add a risk-related premium to your rates attributable to principal-specific concerns, will this be hidden in the rates and not appear as a line item in the bill of quantities (BOQ)?

To the above three questions, 100% percent of the agents that responded, did so positively.

A last question that related to the topic of principal-specific risks was question 43, namely how often it is necessary to indicate to the principal that a form of non-conformance was the result of the principal's information being wrong, inadequate or misleading at the time of tender. All interviewees responded that this does occur from time to time, although not often.

TC in incurring *ex post* legal costs

This category of transaction cost was tested firstly by enquiring about the insurance needed to prevent this action as far as possible. In question 25 of the agent questionnaire, the agents were asked whether they would prefer to provide performance guarantees to the principal. More than 60% of the respondents indicated that they would prefer not to provide performance guarantees, as this would incur additional cost. In an effort to understand these responses, the two interviewees who indicated that they would prefer to provide performance guarantees were further questioned as to why they would prefer to do so. From respondent 7 it was apparent that this was for goodwill purposes and maintaining a trust relationship, and that in any event the associated costs would be recouped elsewhere in the calculations. Respondent 10 was the only agent who gave a clear indication of having previously considered the concept of transaction costs, although he was not familiar with the exact terms. In his response to this question he replied that he would prefer to provide performance guarantees to send a message of commitment, and reduce risk to the principal.

A factor that can reduce the possibility and effect of opportunistic behaviour is *ex post* contract alteration or renegotiation. In question 34 of the agent questionnaire, respondents were asked whether contracts can be altered or renegotiated after adjudication. In response, 50% of the respondents indicated that they agreed that contracts can be renegotiated, whilst 50% disagreed.

In order to gauge the agents' readiness to resort to legal action, they were asked in question 36 of the agent questionnaire how they manage disputes resulting from their relationship with the principal. They were given two options to choose from: either on an ad hoc basis or according to contract only. All the agents responded that they would address the issue at hand on an ad hoc basis instead of contractually. On further questioning in this regard, respondent 10 indicated that only if goodwill fails would the contract option apply.

Respondent 10 also made his reasons clear for not regularly pointing out to the principal that a form of non-conformance was the result of the principal's information being wrong, inadequate or misleading at the time of tender; his argument was in favour of the relationship to continue in good faith. This response as well as the responses to questions 36 and 43 show that agents would try alternative means to resolve issues before opting for legal action regarding contractual matters. The fact that certain matters are described comprehensively in the contract seems to be reason enough for parties not to exploit each other (agent questionnaire, questions 36 and 43).

The matter of disputes becomes relevant under the topic of legal action. In question 42 of the agent questionnaire, the respondents were asked how often disputes arise, to which 33% answered that this happens often, whilst the others said it seldom happens. This suggests that disputes do occur, although not regularly.

TC in inadequate time to accurately calculate tender price

Given that the time available to calculate a tender is a crucial determinant in the accuracy of the calculations, this aspect is fundamental to research question 3.

In response to question 8 of the agent questionnaire whether it is always necessary to request an extension of time for submission as principals always allow too little time,

two-thirds of the respondents indicated that this is correct, and that principals allow too little time.

With a further quantifying question the interviewer attempted to determine to what extent the lack of sufficient time to accurately calculate rates influences agents' tendered rates. By selecting one of several options, the respondents who answered the question indicated that they would either increase their mark-up percentage with a value between 4% and 20%, or they would add an additional risk premium of between 4% and 7% to their rates.

It is of particular interest to note, as shown earlier, that in answering question 13 of the agent questionnaire, namely enquiring on what grounds an agent decides whether or not to submit a tender, none of the respondents indicated that they would decide not to tender on the grounds of insufficient time to calculate an accurate tender.

In the closing question, question 53 of the agent questionnaire, a statement was posed to agents whether principals always allow enough time for proper adjudication, contract negotiations and execution, to which 80% of the agents who answered the question responded that they disagreed with the statement, and 40% indicated that they "strongly disagree" with the statement.

TC in disclosing information with bargaining or future risk

The first question that relates to the TCs associated with information disclosure is question 17 of the agent questionnaire, whether agents would attempt to make contact with the principal and negotiate rates before the submission date. Almost 70% (all but two) of the respondents replied unequivocally that they would "never" attempt to make contact with the principal and negotiate rates before the submission date. Of the remaining two respondents only one indicated that he would "usually" attempt to do so.

Question 39 of the agent's questionnaire also touched on the issue of possible disclosure risk. The respondents were asked if whenever they decided to add a risk-related premium onto their rates, whether this would be hidden in the rates and not appear as a line item in the bill of quantities (BOQ). All the respondents indicated that they would hide this in their rates as they would not want the principal to know the percentage points added to the rates.

TC in *ex post* enforcement of the contract

The uncertainty and risk associated with the *ex post* enforcement of any contract are dependent directly on the completeness of the contract. For this reason it was necessary to determine at least how much work commences outside the lock of contract. Respondents were asked whether they were willing to commence work before a contract has been signed (agent questionnaire, question 18). Surprisingly, 50% of the respondents indicated that they were willing to start work without having an agreed and signed contract in place.

The above assumption is further emphasised by question 19 of the agent's questionnaire, in which agents were asked about the factors they deem most important to evaluate the principal's ability to reliably fulfill obligations, and pay for the services rendered. The responses from 50% of the respondents indicated that past experience was deemed the most important factor to evaluate the principal's ability to reliably fulfill his obligations.

Question 43 of the agent questionnaire underscored an earlier emphasises regarding the regular need for *ex post* enforcement of the contract, when all agents indicated that it is either "often" or "seldom" necessary to indicate to the principal that a form of non-conformance was the result of the principal's information being wrong, inadequate or misleading at the time of tender.

The importance and risk of *ex post* contract enforcement is further highlighted by the responses to question 48 of the agent questionnaire, when agents were asked if a supplier gets the chance to renegotiate the contract, to which more than 80% of all agents responded that they "seldom" or "never" get the chance to do so.

TC incurring *ex post* due to opportunistic behaviour

The most important factor resulting in opportunistic behaviour is the completeness, or lack thereof, of the contract. For this reason it is appropriate to start analysing this TC by looking at respondents' answers to question 18 of the agent questionnaire, asking whether agents are willing to commence work before a contract has been signed. To this question, responses were divided: half of the respondents indicated that they are willing to commence work before a contract has been signed, and the other half stated that they are not willing to do so.

The respondents were asked an open-ended question regarding the ways in which they hedge themselves against possible opportunistic behaviour by the principal (agent questionnaire, question 21). The following responses were received:

Respondent 1 would hedge himself through a **thorough clarification letter** [emphasis added] addressing all necessary issues as well as by **adding a risk premium** [emphasis added] to the rates.

Respondent 4 indicated that he does not want to get involved in these matters, as they are dealt with by his company's commercial director.

Respondent 7 would have the risk priced in the submitted rates through **up-front payments** [emphasis added] and would negotiate **payment terms as short as possible** [emphasis added] – less than 30 days.

Respondent 8 would request a **payment guarantee** [emphasis added] by writing a comprehensive description on each qualification in the contract.

Respondent 9 would ensure that he receives a **payment up front** [emphasis added] as well as proof of payment and proof of receipt from the bank.

Respondent 10, through writing a proper contract with detailed descriptions of the ways of performance measurement, the time of payments as well as specifying the **first payment dates, 50% before site establishment** [emphasis added].

In question 46 of the agent questionnaire, all the respondents were asked how often in the past they experienced opportunistic behaviour from a principal, upon which all of them indicated that it does happen; however, only one indicated that it happens “constantly”; one said it happens “often”, and 66% indicated that it “seldom” happens.

Question 47 of the agent questionnaire quantified the topic of opportunistic behaviour by tapping into the most regularly experienced opportunistic behaviour, to which the following responses were received:

Respondent 1 complained about receiving **unrealistic time constraints** [emphasis added] on expected delivery times, as this is forced upon the agent by making it clear that the tender contract will be awarded if the time schedule is accepted.

Respondent 4 indicated that principals make mistakes, and then ask the agents to make changes at their own cost.

Respondent 7 said that principals regularly provide excuses for **late payments** [emphasis added].

Respondent 8 pointed out that agents' preliminary and general charges are disputed *ex post* by principals when they contend that certain items should have been allowed for in their preliminary and general charges. Principals **look for excuses to reduce unit rates or preliminary and general charges** [emphasis added]. He also said that principals employ consultants, who act on behalf of the principal, to see where they can elicit discount opportunities from the supplier or agent.

Respondent 9 indicated that principals **do not want to assist with exchange rate** [emphasis added] changes.

Respondent 10 mostly complained about intentional **payment postponement** [emphasis added].

Research question 3 summarised

Research question 3: "How can the principal influence all the tendering agents before and during the tender process to perceive and expect lower transaction costs, in order to reduce the cost implication of their submitted quotes?" This can be summarised as follows:

Ex ante measures to influence agents to submit lower rates:

1. **Inadequate information and inflexible processes:** Before the RFT stage all agents should make use of representatives to assist them in compiling the tender information provided to them. An actual internal tender calculation should be done, or a third party used to evaluate the completeness of information. It should not be mandatory for agents to submit tenders online, as this is very strict and rigid in form and layout. BOQs need to be flexible and open for discussion.
2. **Moral hazard:** Principals should not withhold any information requested by agents that can assist in tender calculation, unless explained why it cannot be provided.

2. **Principal specific risk:** Principals need to be frank and open about their particular requirements, which should not change unnecessarily. The responsible person interacting with the agent should not be replaced by another, as parties expect consistency and punctuality on that level of interaction. Agents need to be informed about changing company policy or requirements without delay.
3. **Disclosing agent information:** No attempt should be made to make contact with individual agents before adjudication, unless with several agents together in a formal clarification meeting. There should be no attempt to decipher or request a breakdown of an agent's mark-up percentages.
4. **Inadequate time to calculate:** Ample time must be allowed for agents to calculate, recalculate and submit tenders without time constraints. Sufficient time should be allowed to negotiate the contract and get it signed before starting any party-specific investments.

Ex post measures to influence agents to submit lower rates:

1. **Legal costs:** Work should be done strictly in accordance with the contract, or by mutual agreement. Parties should be flexible and open to contract renegotiations, and all reasons and arguments proffered must have substance. Both parties should support actions of goodwill, and agents' attempts to settle disagreements must be acknowledged and problems resolved amicably without legal action.
2. **Opportunistic behaviour:** Payment guarantees and requests for performance guarantees should be offered, without exception. Payment terms should be strictly enforced, and discounts on early payments discussed and negotiated.
3. **Enforcement of contract:** Should be mutually strict but fair. It must be stated early in the tender stage how enforcement will be handled, and agents should not be confronted with harsh enforcements and unrealistic interruptions of their work.

Chapter 6: Research interpretation and discussion of results

As indicated in chapter 5, the parties' understanding of the different TCs is central and a prerequisite to answering the research questions. Through the comprehensive questionnaires these TCs were not only explained but the insight of principals and agents into the subject matter was tested on various levels.

In the light of the findings from the interviews as presented in chapter 5, this chapter endeavours to give insight into whether the perception of the different TC concepts differs between the two parties to the tendering transaction, i.e., the principal and the agent, as well as that of their respective groups of consulting firms. This is done by synergistically combining the results from interviewing the two groups, which in essence provides the answer to the last research question, i.e., research question 4. For clarity research question 4 is quoted here:

Research question 4: "How can both the principal and the agent increase the net benefit associated with their mutual contract?"

The following sections draw both implications and recommendations from the data analysis done in chapter 5. This chapter will consist of the sections set out below:

1. General interpretations and implications.
2. Implications for agents, how they can increase the value of their tenders by reducing the TCs that principals associate with their quotes – research question 2.
3. Implications for principals, how they can influence tendering agents to perceive and expect lower TCs – research question 3.
4. Implications of combining the results of research questions 2 and 3 - to formulate research question 4, to determine how both parties collectively can increase their combined net benefit.
5. Reflecting and reviewing implications on previous literature.
6. Implications on the transactional model quoted in chapter 2.

6.1 General interpretations and implications

All the respondents easily grasped and understood the concept of TC and started to participate actively once the terminology became clear to them. This implies that prior knowledge of the concept might have resulted in substantially different actions in the past, and obviously different actions going forward.

In some instances differences were observed amongst respondents working within the same firm (agent respondents 4 and 9 as well as principal respondents 11 and 12). There were clearly either differences of opinion or attempts by respondents to shy away from the responsibility, or even to conceal the truth. This could imply that these TC concepts and points of importance as tested in chapter 5, are not discussed and communicated well within firms. It can be deduced that this could be the reason for uncoordinated and diluted efforts on the part of firms to address some of these TCs.

Most agents expressed strong criticism that in their opinion principals are generally inflexible, (agent questionnaire, question 48). Principals are perceived to be unwilling to actively participate in the entire tender process, and that they favour certain agents who receive preferential treatment (agent questionnaire, question 35 and other general comments). This was found to create additional TCs for agents who address these inflexibilities by submitting increased risk margins and subsequent increased rates.

Most principals suggested that agents charge excessively high rates and therefore perceived agents as opportunistic by nature. Very few were prepared to concede that the actions of agents are in response to the way in which principals handle the tender process. This in turn implies that principals were either unaware of the effect of their actions, or they simply denied that their actions had any effect on the rates submitted by agents.

Many agents seemed unconvinced that there may be a net benefit to both parties if better coordination could be facilitated. Generally agents are under the impression that principals are not only higher up in the vertical chain but that they also receive excessive returns on their investments. This could imply that agents are quite comfortable when taking advantage of situations through opportunistic behaviour. Many agents are of the opinion that any attempts by principals to incur lower cost, in practice result in higher cost to the agent.

6.2 Implications for agents, how they can increase the value of their tenders by reducing the TCs that principals associate with their quotes – research question 2

When evaluating the responses received from principals, it is possible to determine the most beneficial actions agents can exercise in order to reduce the TCs experienced by

principals. This reduces the risk and uncertainty associated with their tender submissions. In doing so they increase the likelihood of their submissions being successful, and also the possibility of being awarded a particular contract.

Moral hazard and asymmetric information

Respondents are unfamiliar with the terminology *moral hazard* or *asymmetric information*, but are well aware that the possession of information has large monetary value, and is seen as a basis of *power*. Both parties were perceived to be competing to obtain information and maintain a position where they possess information that is unavailable to the other.

When evaluating the evidence in chapter 5, agents in general seemed inclined to conceal information regarding prior work histories if they thought it to be questionable in any way. They seemed unaware that incomplete information in any form increases TCs to the principal, and reduces their chances of winning the bid. They also seemed unaware that principals are searching for information that could give them peace of mind and confidence in an agent's ability. They all seemed inclined that the main reason they lose tenders are due to their tendered price being too high (agent questionnaire, question 12). This implies that agents will omit information from their tender submission to the detriment of their own bid, whilst being unaware of the implications.

Agents seemed reluctant to provide information regarding the skills level of their mid-level employees, and were not inclined to guarantee that certain employees will be dedicated to the work being tendered on. This is perceived by principals as a lack of availability of *qualified* skills. The reason for agents to withhold information seems to stem from their need for flexibility, and the ability to move employees between different operations and operational sites as the need for different levels of expertise and supervision arises. The implication of the above is that agents in general are seen as employers of *poorly qualified* but *highly experienced* employees. Principals further incur increased TCs due to the regular movement and inter-firm transfers of employees by agents from one site to another, and they believe that agents can greatly reduce the TCs linked to inter-firm transfers and the risk associated with poorly qualified employees. They argued that agents can do so by clearly disclosing their

employees' experience and qualifications during the *ex ante* tendering stage, and also to indicate their need for quick inter-firm transfers in the *ex post* execution phase. It is important that agents provide schedules covering these possibilities in their tender bids in order to keep the principal apprised of possible transfers. Principals need to be sensitised to the possibility of transfers, and this should be communicated before the work commences.

Time delays

Most principals expressed their concern regarding time and schedule constraints (principal questionnaire, questions 3, 4, 5 and 6). Agents are perceived by principals to deliberately delay the tender process, which implies that the request for time extensions are very seldom well-explained or justified by agents. Some agents indicated their strong impression that principals do not allow them enough time to accurately calculate and timeously submit tender bids. Agents can reduce the TCs associated with a schedule extension by clearly indicating their reasoning. The uncertainty as well as the principal's impression of the agent's motive is most important as the principals in general indicated that the time delay caused by a normal extension of approximately seven days does not incur undue additional cost. It is important to note that of all the principals, only one indicated that a principal incurs additional costs due to late submissions. The responses from all principals were that they always request further detailed information before rejecting an incomplete tender bid (principal questionnaire, question 22). This should prevent the TCs of possible incomplete submission to agents to some extent, and proves that principals do not use this asymmetric information to their advantage. However, principals experience very high TCs in incomplete tenders in the form of searching costs.

This shows that the cost implication of time can be irrelevant when compared to the cost of searching for information. It is therefore important that agents understand to what extent the lack of all-inclusive information can impact on TCs as opposed to mere time delays. It is advisable that agents request additional time in order to prepare a more comprehensive and competitive bid instead of submitting an incomplete tender on time.

More than 80% of principals were adamant that they never allow agents to start work

before the contract has been signed (principal questionnaire, question 27). However, 50% of all agents indicated that they are not only willing to do so, but are actually allowing work to start before the contract has been signed (agent questionnaire, question 33). This could either indicate that principals do not want to concede that this was happening, or agents were encouraging this practice to reduce the project schedule, with the incentive of securing the contract for themselves. The fact that most principals are corporate entities may suggest that principals shy away from admitting that this is happening due to corporate governance concerns. However, this seems to be a determining factor for agents to secure a contract.

Search for and disclosure of information

Principals seem to purposefully supply insufficient information. This conclusion is implied by the fact that most agents agree that the initial information supplied by principals with their RFTs is seldom adequate to accurately tender (agent questionnaire, question 1). Having said that, almost 70% either *agree* or *strongly agree* that whenever additional information is requested, it is adequately supplied (agent questionnaire, question 2). More than 80% of Principals indicated that they do perform internal estimations of the expected rates from agents (principal questionnaire, question 7), which should make them aware of the information that is actually needed in the RFTs. It therefore seems that they are fully aware of what information agents require, but nevertheless refrain from supplying the required information in the first round of handing out the RFTs. Conversely, agents always respond to requests for additional information, as these are seen as valid requests that could add value. Principals concede that they do not reject an agent's tender even though it may be unclear; instead they always ask for clarification of the bid (principal questionnaire, question 22). It seems that principals deliberately provide too little information, but once agents seem likely to submit their tenders, their requests for additional information are responded to without prejudice. In order for agents to reduce the risk associated with their submissions, these additional requests for information should prove their earnest and honest intentions to tender and increase their chances of being awarded a contract. Agents should always request missing information and ask for clarification, as this is an indication of their competence and commitment.

The true cost associated with the search for information seems to reside in the cost

associated with the lack of information. Most of the respondents interviewed felt that they fall in the category of *experience goods*, which in itself creates TCs as principals find it very difficult to judge the quality of products or services with foresight. The only way to do so is by *searching* for information on the agent's prior work performances. It can therefore be assumed that any information that the agent can make available without the principal having to search for it, would to a large extent reduce the principal's risk associated with the particular agent.

When questioned by a principal regarding performance guarantees, it is important for agents to note that accreditation is of very little value to the principal, and can therefore be seen as a tender *qualifier*, and not a tender *winner*. Although it might qualify an agent to tender, an accreditation will not necessarily persuade the principal to award the tender contract. It is interesting to note the erroneous impression associated with accreditations amongst agents. These accreditations are obtained at huge costs with the sole intention of reducing TCs to the contracting partner firm. The money spent is necessary but the intention is unfounded as, according to principals, this does not reduce TCs.

Reputational and opportunistic behaviour costs

The TCs incurred by firms in terms of reputation become more costly as the value attached to the brand of such a firm increases. As more goodwill and value are attached to a brand, the possible risk of a poor reputation becomes increasingly damaging and costly. This risk of reputational harm, associated with each different contract, adds to the TC of such a transaction. It is also necessary to note that the risk of reputational harm for listed companies in the public domain can be much higher than for those in the private sector that are less dependent on shareholder perceptions and share-price evaluations. With this risk in mind, principal respondents indicated that *past experience* is the most important factor to evaluate the ability of agents to fulfill the obligations of the contract, and indicated that the agent's *brand reputation* is the second most important factor (principal questionnaire, question 18).

It is important to note that a principal's reputation can be harmed by an agent through *opportunistic behaviour* and *poor safety performance* exercised by the agent, thus bringing the principal into disrepute with other clients, government organisations and the general public. This type of reputational harm in the public domain can have

severe reputational and financial repercussions for principals. This influences the TCs incurred by principals with regard to a specific agent and reduces his chances of being awarded a contract. For this reason, it is in the best interest of the agent to do everything possible in his sphere of influence to uphold the contracted principal's reputation in the public domain. This can firstly be done by accepting nothing but the best in safety standards, and to maintain this throughout the contract period. They should further ensure that all legislation is adhered to, and all statutory requirements are fulfilled without delay. This is supported by responses from two respondents (respondents 4 and 9) from the same agent firm, who indicated that their good safety reputation in the market allows them to increase their rates without reducing their chances of being awarded contracts.

An important question that also influences the principal's perception of opportunistic behaviour is the handling of site-specific investments by the agent. It became clear that principals become dependent on an agent, the moment they get locked into the contract. The extent of the *lock-in* depends on the financial implications of possible switching costs. The responses received from principals when asked questions relating to switching costs (principal questionnaire, question 39, 40 and 43), led to the conclusion that the site-specific investments and subsequent switching costs are perceived by principals to be *negotiable*. Although principals are aware of these TCs they perceive them to be negotiable, and that they therefore do not pose a large cost as it becomes a calculated risk after negotiation. Switching costs associated with the site investment by principals include the site disestablishment of an agent, and all the TCs relating to concluding a new contract with a different agent.

Enforcement and legal costs

In question 19 of the principal questionnaire, principals were asked whether they perceive it as important to request performance guarantees from suppliers, to which all but one responded positively, indicating that it is important. This is reinforced when half of all the principal respondents indicated that they *strongly agree*. This indicates that principals expect performance to be substandard at some stage in the contract, most probably necessitating legal action.

When testing the occurrence of disputes in the tender relationship, principal respondents were asked how they enforce the existing contract with the supplier

(principal questionnaire, question 31). In response all but one (over 80%), indicated that they do so by withholding payments instead of taking legal action. This implies that principals would not resort to legal action as a first line of action to address disagreements. It would be beneficial for agents to take note that any withholding of payments by principals might be the first sign of a disagreement.

It is of interest to note that this behaviour of principals is not an exception as almost 70% of all agents also indicated in agent questionnaire, question 41 that they prefer to enforce the existing contract by withholding service or products instead of going to court. The withholding of payments on the part of principals, and the withholding of service or products on the part of agents should be seen as a signal, indicating the possibility of legal action.

6.3 Implications for principals, how they can influence tendering agents to perceive and expect lower TCs – research question 3

When evaluating the responses received from agents, it is possible to determine the most beneficial actions a principal can take in order to reduce the TCs experienced by agents in preparing and submitting their tender bids. In doing so they reduce the cost expected by agents in performing the contract and therefore the value of the submitted tender bids.

Moral hazard and asymmetric information

It is evident that principals are aware of the fact that they supply too little information when providing RFTs to prospective tenderers. Principals also indicated that they usually do the calculations themselves before handing out RFTs. The fact that they still provide too little information, knowing what the agents need (agent questionnaire, question 28), creates a dilemma. The reason can be twofold:

Firstly, this can be due to moral hazard reasons, whereby agents are lured into supplying inaccurate submissions, in which case they will be held liable to perform at the rates as calculated.

Secondly, the reason can simply be a means of minimising the risk of asymmetric information, whereby agents with no real intention of tendering, or possible competition to the principal, may not obtain sensitive information regarding the project about to be

adjudicated.

This causes significant TCs for agents. By meeting with potential agents and screening for bona fide agents before handing out the RFT, principals will be able to prevent these TCs for agents and remove their own moral hazard risk. The first RFT to agents must contain all the information needed to calculate an accurate tender bid, as this will greatly reduce agents' tendered rates.

In question 20 of the agent questionnaire, respondents were asked to indicate how they hedge themselves against the possible moral hazard phenomenon. Their responses in no uncertain terms indicated that they would add a percentage-of-risk premium, or request up-front payments or even tighten qualification specifications. This would result in agents pinning principals down to the assumptions made on the incomplete information supplied, by specifying it in the qualifications letter supplied with the tender submission. The principal then adds to his own risk by providing insufficient information that leaves the agent wanting. These qualifications will certainly prolong the contracts negotiation phase, and burden the measurement of performance in the *ex ante* stage of the project. Principals should therefore steer away from withholding any kind of information, whatever the reason.

Search for and disclosure of information

The overall impression from agent firms indicate that quantity surveyors or individuals forming part of the tender preparation and submission process have a much larger influence and role to play in the actual prices submitted in the tender bids than those who will *ex post* manage the contract. It is evident that the majority of work done, and time spent on tenders, involves work and calculations prior to any contracts being signed. The tender preparation and calculation part of the tender process solely depends on the information supplied by the principal, as the quality and thoroughness of the submission depends mostly on how detailed and complete the information is that is provided to agents. It is therefore important that principals understand the implications of providing insufficient information to agents.

Respondents were requested to indicate how adequate and complete the information is that is supplied by principals in the RFT (agent questionnaire, questions 1 and 11). Of all categories of TCs tested, the cost that agents most clearly highlighted as posing

a material transactional cost, pertains to the additional effort required in searching for information during the *ex ante* tender preparation stage. Although this was not calculated to be one of the most expensive transaction costs, principals might benefit from taking heed that it was regularly spoken about by all respondents, without exception.

A number of agents claimed that they were not supplied with the necessary information required despite their requests (agent questionnaire, question 2), and 75% stated that even after having received the requested additional information, they would still have to allow for this uncertainty in the rate and submit a tender (agent questionnaire, question 3). The fact that agents would submit their tenders despite sketchy and inadequate information might create a false sense of complacency on the part of principals that agents are unaware of certain requirements or threats pertaining to the work to be carried out, and make themselves guilty of opportunistic behaviour. Principals should understand that by not providing sufficient information, they load several percentage points on to the rates submitted in the form of a risk-related premium.

Most agents felt that it is often necessary to indicate to a principal that non-conformance on their part was the result of the principal's information being wrong, inadequate or misleading at the time of tender (agent questionnaire, question 43).

The assumption can therefore be made that when additional information is requested by the agent to enable him/her to accurately calculate a tender submission, the principal might still withhold that information which he/she could later use as a moral hazard against the agent. Although this might not be deliberate on the part of the principal, the absence of information still poses a risk to the agent, which could have been eliminated if the principal had addressed the request for information in the first instance. It is important to note that this might not necessarily seem to be directly to the principal's detriment. Indirectly this will result in substantial TC to the agent and subsequent higher rates to the principal. It can therefore be summarised that the amount and detail of information supplied to agents remain questionable, and need to be addressed by principals.

It is interesting to note that no agent responded to the question as to the grounds on

which they might decide not to submit a tender (agent questionnaire, question 13), that *information*, or the lack thereof, might be the reason. This reinforces an observation made earlier that agents do not refrain from submitting tenders when information is wanting. Principals therefore might see this as a loophole for opportunistic behaviour to present asymmetric information, whilst they will pay the price in higher rates which will be submitted in the tender in question. It is for this reason that it is suggested that principals should resist the need to provide agents with insufficient information. This action seems to be an attempt by principals to lure agents into tendering rates in which the actual operational or production costs are undervalued. In response to question 22 of the agent questionnaire whether agents evaluate any factors other than cost in order to determine the value of price, an overwhelmingly positive response was received. It is evident that the majority of agents evaluate factors other than their cost alone. If it holds true that agents incorporate the cost of risk and uncertainties associated with their submission into their rates, any attempt by principals to lure agents into submitting lower rates would only accrue exponentially higher rates. The reason being that rates can be calculated fairly accurately based on known information, whilst in the absence thereof the true cost is unknown and a premium over and above expected costs has to be added to allow for misinterpreted or underestimated costs. The only possible advice to principals in this regard is that all relevant information that might assist in removing risk or uncertainty should not only be made available to agents, but should also be provided before requests are received, to negate any perception of opportunistic behaviour through asymmetric information, and thereby removing the overall risk associated with a specific principal. It was found that the principal-specific risk in any contract forms a key component of the margins required in order to make a project profitable.

It is possible that principals might intentionally be withholding information, but if so, they are not sufficiently aware of the extent of the possible consequences, as they never seem to compare the true risk and reward of providing information that they deem appropriate. Agents seem to view the withholding of information by principals as intentional to use against them at a later stage.

In question 17 of the agent questionnaire, agents were asked whether they prefer to make contact with principals before the submission dates in order to negotiate rates. Almost 70% of the respondents (all but two) replied in the negative, indicating that they would never attempt to do so from their position as agent. It is necessary to observe

that in contrast, in question 30 of the same questionnaire, all the agents indicated that they would prefer to meet with a principal as a shortlisted supplier to negotiate before adjudication. The difference lies in the fact that in question 17, they were asked whether they would attempt to make contact from their side, whereas in question 30, they were requested to meet by the principal, in which case they all were perceived to be eager to meet.

This firstly implies, in agent questionnaire, question 17, that agents do not want to create the impression of an opportunistic or unethical attempt to seek an opportunity to negotiate *ex ante* with the principal. They seem concerned that this might reduce their chances of being awarded the contract in question. This also provided substantial proof that agents might be concerned about information disclosure, until such time as the actual submissions took place and the non-disclosure gentleman's agreement takes effect.

On the other hand, question 30 in the agent questionnaire implies that when given the chance by the principal, agents do not seem to steer away from *ex ante* bargaining. When initiated by the principal, this isn't perceived as unethical. Agents would prefer to meet with principals to negotiate rates which indicate that they perceive an *ex ante* interaction to improve their chances of being awarded a tender. Principals should initiate these without exception, as this allows agents to provide clear and concise information to support their tender. This could substantially reduce TCs to principals and is not perceived as unethical by agents when initiated by the principal.

The risk that materialises when disclosing information post submission was expected to be perceived by agents as a threat, especially those that are publicly listed. However, the responses proved otherwise and it seems that the non-disclosure agreements currently utilised in tendering processes are sufficiently adequate to ensure that agents perceive little risk, even though this agreement might be informal.

All the agent respondents indicated that they would conceal risk-related premiums in their rates as they would not want the principal to know the percentage points added to the rates (agent questionnaire, question 39). It is therefore clear that agents seem threatened by the disclosure of information that might put them in a difficult position to renegotiate rates. It is of interest to note that agents do not seem concerned about

disclosing information that might have an influence on future risk (agent questionnaire, question 39).

It is further important that any extension of existing contracts, or requesting quotes for work from agents with whom the principal has had a prior work relationship, may prove to be problematic. The reason lies in the fact that the principal's and the agent's *operational personnel* cultivate a working relationship over time, which the tender preparation or procurement teams of both firms have not done. During the tender stage of a new contract or current contract extension, the interaction is initiated by the procurement or tendering teams from both firms to address the tender submission and evaluation. This process usually gives very little effect to the existing relationship. It is in the principal's best interest to ensure that any continuation of current contracts be handled in such a way that the line personnel involved in the day-to-day execution of the work and maintenance of the relationship continue to be involved in the decision-making process before adjudication.

Reputational and opportunistic behaviour costs

When enquiring how often agents have experienced opportunistic behaviour from principals in the past, they all indicated that it seldom happens (agent questionnaire, question 46). Although different parties to the contract perceive different things as opportunistic behaviour, the responses received make it difficult to believe that opportunistic behaviour is the exception rather than the norm.

In response to question 47 in the agent questionnaire, which asks what opportunistic behaviour agents experience most often, it became evident that the most prevalent opportunistic behaviour exercised by principals is late payments or the postponement of payments due to a number of corporate bureaucratic reasons within the principal's firm. Principals can greatly reduce the TCs perceived by agents *ex ante* by committing to reliable payment terms, and more specifically, adhering to this without delay.

When asked what factors they considered most important to evaluate a principal's ability to reliably fulfill obligations and pay for the services rendered (agent questionnaire, question 19), 50% of the respondents indicated that *past experience* with a specific principal was believed to be the most important factor to evaluate a principal's ability to reliably fulfill his obligations and pay for the services rendered.

Agents clearly know that *ex post* adherence to the contract by a specific principal will hold true for future contracts. The costs associated with the *ex post* enforcement of the contract will therefore remain the same for a specific principal. It is important to note that the other half of the respondents indicated that a principal's *financial health* was the most important factor to evaluate a principal's ability to reliably fulfill his obligations and pay the agent for services rendered. This reinforces the concern with a principal's payment terms and underlines the necessity of principals to create the *ex ante* assurance with potential agents that they pay timeously without delay.

It is worth noting that almost all principals, all except one, would enforce the contract by withholding payments (principal questionnaire, question 31), instead of taking legal action. This supports the perception of agents that late payments are the most commonly experienced opportunistic behaviour on the part of principals. It further signals a red flag in that agents possibly perceive the enforcing of contracts by principals as opportunistic behaviour. On the other hand, principals are using this only in an attempt to solve some material issues on an ad hoc basis through a relational attempt to show goodwill towards the agent. However, without exception, it is necessary for principals to understand that the act of withholding payments in an attempt to enforce the contract is interpreted by all agents as opportunistic behaviour. On the other hand, it is necessary that agents understand that principals experience the need to exercise their rights as principals to receive contractually-agreed products or service. They also attempt to do so while avoiding any legal action. It is therefore clear that an alternative measure should be put in place to address disagreements or assist principals with addressing the risk for principals associated with non-conformance on the part of agents. A good example was given by respondent 10 (agent questionnaire, question 25), who indicated clearly that he would *prefer* to provide *ex ante* performance guarantees to principals. His reason being that he attempts to reduce the risk for principals, and assures them of his commitment to meet the requirements of the contract.

The responses from all agents were consistent in that they perceive payments due to them to be non-negotiable and payable without delay or prejudice. However, there is a mutual misperception between the two parties to the contract as to what the principal's rights are in terms of payments due to the agent, as well as the delaying thereof. The ability of principals to fulfill the obligations of the contract was evaluated by agents as

to depend to a large extent on their past experience of poor or late payments from that principal (agent questionnaire, question 19). Principals are also unaware of the harm that is done to their public image and reputation through regular payment delays. Agents indicated that in some instances principals would receive exceptionally high tender bids in future, due to this behavior (agent questionnaire, question 24). Principals should do everything in their power to release payments without delay, and address issues contractually instead of withholding payments.

In question 18 of the agent questionnaire, agents were asked whether they would commence work before the contract has been signed, to which 50% indicated that they were willing to start work without an agreed and signed contract in place. It is assumed that the reason is mainly to accommodate the principal and to ensure that they are awarded the contract. However, this increases the risk inherent in that specific contract and if this should become a regular requirement by a specific principal, it will in future be added to all their prices in tenders for work to that particular principal. The discussion on questions 37 and 38 in the agent questionnaire clearly shows that risks and problems experienced with a particular principal in the past will translate into a risk premium being charged for future work to the same principal.

Inflexible process

Besides poor payment terms, it was found that a principal's reputation can be harmed through his own rigid and inflexible contract execution procedure. One agent clearly indicated that the BOQ supplied in the RFT regularly needs modification and changes in order to suite their pricing strategy and method of operation (agent questionnaire, question 11). Half of all the principals were adamant that the BAQ is inflexible and no changes can be effected (principal questionnaire, question 10). This increases the value of the tendered rates through added risk in the form of a premium. It is therefore important that principals remain flexible in order to at least attract all possible options from the agents in providing the product or service.

Agent respondents touched upon the electronic or online system of submitting tenders, and the influence this has on the rigidity of tenders (agent questionnaire, question 16). Although a number of firms have introduced this system, none of the principals interviewed indicated that they are using this method of tender submission (principal

questionnaire, question 12). However, agents stressed in no uncertain terms that this is happening, although still on a small scale. This method is extremely rigid and allows little or no adaption or suggestions for changes to the BOQ. Agents indicated that they dislike this method as they are unable to submit additional supporting information in order to suggest possible changes to the scope of the contract, and thus possibly reduce the total contract value. As mentioned above, these factors not only add to the rigidity of the tender process but also add risk for the agent and reduce the possible outcome of the agent's attempts to reduce the TC to the principal.

Question 13 of the agent questionnaire focused on the reasons why agents would refrain from submitting tenders. All the respondents indicated that the predominant reason for not submitting a tender would be due to insufficient time to accurately calculate tender rates and prepare the tender submission. This implies that the inflexibility in not allowing agents sufficient time could result in under- or over-estimates, which in turn would result in higher rates and lead to the inclusion of risk premiums. This is further supported by question 53 in the agent questionnaire, where agents were asked whether principals always allow enough time for proper adjudication, contract negotiations and execution. In response all but one of the agents that responded to the question indicated that principals do not always allow enough time.

Enforcement and legal costs

When testing the occurrence of disputes in the tender relationship (agent questionnaire, question 42), all the agents responded positively by indicating that it either happens often or seldom. This proves the undisputed existence of principal-specific risks, and raises the need for a principal to reduce the transaction cost for agents receiving RFTs. Any attempt to reduce TCs for the other contracting party will reduce the cost associated with their contracts, whilst it can be addressed with very little effort (agent questionnaire, questions 37, 38 and 39).

The TCs associated with legal action can take many different forms such as searching costs, legal costs, management time, etc. It is necessary to note that by the time agents consider legal action as an option, the relationship between principal and agent is usually already permanently damaged, and the chances of amicably executing future contracts in a collaborative manner become limited. At this point the

harm to the agent must be severe enough to the extent that salvaging lost profits is more worthwhile than the returns from possible future work to the same principal. This poses a real threat to future work between the contracting parties. Both parties should therefore steer away from allowing disputes to escalate to the extent that legal action becomes the only option. When disputes are resolved timeously and amicably, it very seldom escalates to come to the attention of top management.

When asked whether contracts can be altered or renegotiated after adjudication, at least half of the principal respondents indicated that they agree that contracts can be renegotiated, whilst 50% disagreed. When comparing this to the responses of agents to the same question (agent questionnaire, question 34), very similar responses were received. This highlights the fact that not all principals are willing to see the contract as a renegotiable part of the work, even under adverse or unforeseen circumstances. If a principal has been known to be unapproachable with regard to any contract renegotiations, this adds to the risks associated with the principal in future tenders.

The fact that agents do not resort to legal action as a first option (agent questionnaire, question 41), seems to be perceived by some principals as a lack of legal knowledge, and in some instances this increases the possibility of opportunistic behaviour. Principals might have to take cognisance of the fact that some agents would instead attempt to withhold services or products, which in turn results in the withholding of payments by the principal. Any possible means to solve issues in good faith for the purpose of a future relationship then becomes slim.

In response to question 36 of the agent questionnaire whether agents would prefer to either resolve disagreements on an ad hoc basis or only in accordance with the contract, most indicated that they would do so on an ad hoc basis. This implies that agents might try and salvage whatever they can of the relationship before resorting to legal action or even withholding services or products. This also seems to be tacitly expected of a party that is not the leading firm or principal to a contract. The principal party to any contract should be aware of this and utilise this as a means to minimise conflict and resolve contractual disagreements on a mid-management level, and prevent disputes from escalating to a level where harm to the contractual relationship becomes inevitable.

6.4 Implications of combining the results of research questions 2 and 3 - to formulate research question 4, to determine how both parties collectively can increase their combined net benefit

Search for and disclosure of information

Although principals seem to deliberately provide too little information at the RFT stage (principal questionnaire, question 1), any requests for additional information by agents are responded to without prejudice (agent questionnaire, question 2). Principals seem willing to reveal any information once agents seem likely to submit their tenders. Principals should refrain from this practice, and create an open line for enquiries through a central person as contact, with whom agents can constantly liaise. This person should assist and constantly search for opportunities to supply more detailed and additional information to assist agents in tendering. This is seen as one of the most important factors whereby principals can influence the rates submitted to them by agents. All additional information requested from agents should immediately be made available to other tendering agents as well. This allows agents to calculate and submit the lowest possible rates.

In order for agents to reduce the risk associated with their submissions, these additional requests for information should prove their earnest and honest intentions to tender and increase their chances of being awarded a contract. Agents should always request missing information and ask for clarification, as this is an indication of their competence and commitment.

Agents should not submit tenders prematurely without having first calculated their rates to their desired level of accuracy. This results in unnecessary high rates and increases TCs associated with the specific agent, and might result in him/her being omitted from future RFTs.

Moral hazard and asymmetric information

Both parties need to realise that any attempt to obtain information unavailable or superior to the other, only adds to the TCs in terms of risk and suspicion of the other party, which in turn may result in distrust or even higher rates to the other party.

Principals need to make every attempt possible to provide all the information agents might need to tender accurately. If a concern of moral hazard exists with certain agents, they should be omitted from the initial RFT list. A lack of any information is perceived by agents as opportunistic behaviour. As indicated above, an open line for enquiries, in terms of a central person as contact, should be made available to agents to constantly search for additional information to assist agents in tendering. This is seen as one of the most important factors whereby principals can influence the rates submitted to them. All additional information requested from agents should immediately be made available to other tendering agents as well. This will not only remove any asymmetric information concerns but will also allow all agents to calculate the lowest possible rates. Principals need to understand that in conditions of perfect competition, prices are forced down by competing suppliers.

Agents should refrain from any attempts to conceal information regarding prior work histories, even if they thought it to be questionable in any way. If they do not make this information available, principals will definitely suspect this to be the situation. Agents should especially provide information regarding the skills level of their mid-level employees, and where possible explain clearly why the presence of certain employees cannot be guaranteed or dedicated to a specific contract. Principals should understand the different needs of agents for flexibility and internal transfers. However, principals should clarify any unclear situations or concerns regarding skills timeously.

Time delays

Most principals expressed their concern regarding time and schedule constraints. Agents should therefore very clearly explain requests for time extensions when requested. Agents should ensure these attempts are not perceived as deliberate delays of the tender process as these will add to the TCs associated with the particular agent.

Even though it may not have been initially indicated, principals should allow for a seven-day (or less) extension when requested without incurring additional costs, as this would create the impression of flexibility and participation. However, it is of the utmost importance that principals overcome corporate inertia, and start the tendering process well in advance of reaching critical time constraints. Projects with fewer critical

overall timeframes attract substantially lower rates than projects that are clearly perceived by agents to be under pressure for fast-tracked completion. Agents will inevitably charge higher rates for projects under constant time pressure, as these will have much higher TCs associated with them throughout the *ex post* execution phase.

Both parties should refrain from allowing any work or services to start before contracts have been agreed and signed. This results in a large proportion of disputes and subsequent legal action. Agents should not encourage this practice in the hope of securing contracts. This just increases the possibility of *ex post* legal action, and has a negative effect on a principal's opinion of an agent's corporate governance structures.

Reputational and opportunistic behavioural costs

It is in the best interest of an agent to uphold the contracting principal's reputation in the public domain. This can firstly be done by accepting nothing but the best in safety standards, and to maintain this throughout the contract period. They should further ensure that all legislation is adhered to, and all statutory requirements are fulfilled without delay. Agents who are perceived to cause reputational harm to the principal will pose a very substantial TC in future contracts.

The extent of contractual *lock-in* depends on the financial implications of possible switching costs. Site-specific investments and subsequent switching costs are perceived by principals to be *negotiable*, and not to pose a large TC. Both parties should ensure that these costs are adequately covered in the contract and agreed upon *ex ante*.

Inflexible process

Principals are rigid with regard to the structure of BOQs in that they are inflexible and no changes can be effected. This makes the calculation and comparison of tenders easier and more convenient. Agents should assist principals in keeping to BOQ outlays to assist with the calculation thereof. Having said that, principals should be flexible to take heed from agents regarding ways to better structure the project costing as agents indicate that they can add substantial value by making structural changes in the early stages of the BOQ outlay. It is therefore important that principals remain flexible in order to at least attract all possible options from the agents in providing the

product or service.

Principals should therefore also stay clear of any attempts to force tender submission to happen online via the Internet. This results in agents being unable to substantiate their submissions in their own format and make changes to the BOQ structures. Agent respondents clearly see this as a contributing factor to TC as this allows them very little space to substantiate their tender and distinguish their submission from others. Any method of submission should at least allow agents freedom to initiate changes that can possibly reduce the total contract value to both parties.

Enforcement and legal costs

Agents should take cognisance that accreditation of any kind is only seen by principals as a qualification to tender. An accreditation is not sufficient grounds on which to be awarded a tender when compared against another agent that has similar accreditation and work qualities but lower rates. Performance guarantees, however, reduces the TCs associated with an agent, and agents should propose these even if not requested by principals. Only under conditions of long-standing relationships between a particular agent and principal can these be negotiated if substantial proof can be provided of an agent's constant good performance.

During the process of legal action, the contracting relationship between principal and agent is usually permanently damaged, and the chances of amicably executing future contracts in a collaborative manner become limited. At this point the harm to one of the parties must be severe enough to the extent that salvaging lost profits is more worthwhile than the returns from future contracts. This poses a real threat to future work between the contracting parties. Both parties should therefore steer away from allowing disputes to escalate to the extent that legal action becomes the only option. Disputes should be resolved timeously and amicably to prevent escalation to the level of top management, after which the future of the contract becomes threatened. Both parties should encourage lower-level line personnel in the hierarchical structure of management to resolve issues.

Both parties should be approachable with regard to any contract renegotiations, as this removes the risks associated with future tenders.

Both parties should refrain from withholding work or payments as this has a negative effect on the remuneration of the other party, and creates a condition where disagreements are diluted to issues of a trivial nature and having no real relation to the initial reason for disagreements. Any possible means to solve issues in good faith for the purpose of a future relationship then becomes slim.

6.5 Reflecting and reviewing implications on previous literature

One of the suggestions that stems from the first phase of several discussions held with agents, is that principals should involve agents before the actual request for proposal (RFP) is handed out through an integrated RFP. This supports research by Wang et al. (2013) who mentioned that in order for both the principal and the agent to reduce uncertainty and exploit information visibility, the two firms have to engage in sufficiently coordinated efforts.

Hart and Moore (2008) reasoned that neither party to the contract feels entitled to outcomes outside the contract. In response to question 50 of the agent questionnaire, this was found not to be the case in that at least 50% of agents indicated that they would expect to receive improved rates in the event that they perform better than expected, even though this might be outside contract expectations. Similarly, in reply to question 41 of the principal questionnaire, 50% of the principal respondents indicated that they would expect to pay reduced rates in the event of poor performance from the agent. However, this might be seen as purely opportunistic behaviour on the part of the principal. When asked in question 35 of the principal questionnaire whether they would expect to pay less if the agent incurs lower costs due to external changing conditions after the work has commenced, all principal respondents indicated that they strongly agree.

(Hart & Moore, 2008) indicated that if a party does not receive what he feels he is entitled to he becomes aggrieved and subsequently provides perfunctory rather than consummate performance. This was found to be the case when five out of six principal respondents indicated that they would prefer to withhold payments, rather than enforce the contract (principal questionnaire, question 31), whilst several agent respondents indicated this as regularly experienced opportunistic behaviour (agent questionnaire, question 47).

This important point is made by Li et al. (2013) when they point out that TCs borne by the principal can be minimised if the principal minimises the uncertainties inherent in, and associated with, the transaction environment. This was found to be a fundamental part of the answer to research questions 2, 3 and 4. In order for parties to reduce their costs, they should reduce the TCs experienced by the other party. Uncertainty has been found to contribute largely to the risk perceived by both parties, but especially by the agent. His/her perceived risk is eventually passed on to the principal in the form of risk premiums and higher rates.

Interestingly, Thomas and Ellis (2007) pointed out that many small and medium-sized agents or suppliers carry out a less than adequate task of operational planning. This, one can assume, will inevitably lead to extensive TCs for both parties. Their research also concludes that better pre-bid plans will reduce the costs and shorten the schedules of the proposed work under the contract (Thomas & Ellis, 2007). This supports the finding that better information and a more flexible process from the principal will result in a higher net benefit to both parties as agents will charge lower premiums, and subsequently principals will attract lower rates (agent questionnaire, question 23).

In support of Fehr et al (2011) and based on the comments of particularly respondent 7, the researcher came to the conclusion that mining contracts in particular are very flexible in nature due to uncertain geological factors, and the possible effect of environmental changes on the contract. It was also observed that principals, and this was confirmed by principal 6, are responsible and accountable by law for certain fair outcomes and remain in control of their contracts. Conversely, in civil contracts a third-party engineer is appointed to remain in control of supervising the agent's work.

Lonsdale (2005) examined the problem of asymmetric lock-in, which occurs when one party becomes dependent on the other. This results in an empowered position for the latter, which causes this party to engage on terms of its own choosing. He points out that in the case where the empowered party is the agent, he can pass some of the initial contractual risks back to the principal. Evidence in this research shows that the longer a contractual relationship continues, e.g., due to contract extensions or renewals, the more likely it becomes that the agent assumes control. This assumption is supported by the fact that principals resort to the withholding of payments (principal questionnaire, question 31)

Egwunatum et al (2012) also evaluated the incomplete contract from the perspectives of both the transaction participants. He suggests that for a once-off market transaction it may be true that it is only the buyer that needs to worry about opportunism. However, he adds that for a set of transactions bound in a long-term outsourcing contract, which is termed *relational contracting*, both the principal and the agent will be confronted with possible opportunism. As indicated above, this research indicates that the longer a contractual relationship continues, the more likely it becomes that the agent assumes control.

Williamson (1988) contends that an agent's reputation acts as a safeguard against the possible exploitation of power by the agent to the detriment of the principal. This research indicated that the agent is less sensitive to reputational harm than the principal, implying that the agent might resort to the exploitation of his relational power, especially in longer-stretching relationships where contracts were renewed. In contrast with Williamson, Lonsdale (2005) views any *ex ante* power imbalance as a threat to the efficient *ex post* exchange, which was strongly supported by this research, in that parties to the contract revert to the withholding of payment or service instead of exercising legal action.

6.6 Transactional model revisited

The TCs identified through chapters 5 and 6, as experienced by principals and agents in specific contractual uncertainties, were mathematically reformulated. This allows for the application and comparison against the work of Lee et al (**2009**) as indicated in chapter 2.

Lee et al (**2009**) indicated and formulated the TCs experienced in the transaction between a contractor and a subcontractor in the construction industry. These differ substantially from the TCs identified during this research. In his research Lee et al (**2009**) identified the most relevant TCs in the transaction between contractors and subcontractors to be shirking costs, management costs and coordination costs.

In this research, the most prevalent TCs identified within the relationship between principals and agents were found to be:

Searching costs, relevant to both principals and agents.

Flexibility costs, relevant to agents.

Reputational costs, relevant to principals.

Opportunistic behaviour costs, relevant to both principals and agents.

Asymmetric information costs, relevant to both principals and agents, as well as

Enforcement costs, relevant to both principals and agents.

The TC model with reference to the TCs indicated by Lee et al. (2009) is revisited here for ease of reference:

Agent surplus $(S_A) = \text{Selling Price } (P_s) - \text{Costs } (C_A)$

Thus Agent profit $(\Pi_A) = P_s(q) - C_A(c, S, M, K)$

Principal surplus $(S_P) = \text{Principal received value } (V_P) - \text{Costs } (C_P)$

Thus principal profit $(\Pi_P) = V_P(q) - P_s(q) - C_P(S, M, K)$

And the Total Net Benefit then becomes

$$(\Pi_B) = \text{Principal surplus } (S_P) + \text{Agent surplus } (S_A)$$

Value generated from the contract

The value generated for the principal V_p can be shown as $V(q)$ which consists of the unit value the principal derives from one unit v of the product or service, duplicated by the quantity of the contracted work q .

Therefore $V(q) = vq$ (Lee et al 2009, p. 1235)

The agent on the other hand accumulates value from the transaction by selling units at the selling price as tendered in his initial bid at their unit cost of c , which translates in a total production cost also duplicated by the quantity of contracted work q .

Therefore the agent's production cost becomes cq (Lee et al 2009, p. 1235).

In comparison to the TCs of Shirking-, Management- and Coordination costs suggested in the model proposed by Lee et al. (Lee et al., 2009) this research revealed the following relevant TCs:

Searching costs

The agent searches for information allowing him to tender accurately and reduces the risk associated with any tender calculation made, based on assumptions, unclear information or even information available that is vague and possibly perceived as misleading.

Likewise, this cost is incurred by the principal as he/she searches for information or related goods, and translating it into intellectual value. The principal searches for information to ascertain and confirm measures that indicate the agent's conformance to the contractually agreed variables such as volumes, qualities etc.

This cost for both parties increases as the cost incurred in reaching the desired level of information i increases. This cost further increases directly as the quantity of contracted work q increases, and similarly as the proportion of information needed by each party μ increases, relevant to the information already known to them.

Therefore, the **searching cost** is represented by

$$S(i,q) = \mu iq, \text{ where}$$

μ = the proportion of information ($0 < \mu < 1$), needed by either the principal or the agent, relative to the information already known to them; i = the additional cost per unit incurred by the above party in reaching the desired level of information; while again q = the quantity of the contracted work.

Flexibility costs

The flexibility cost is incurred by the agent generally as a result of the principal being rigid and inflexible regarding the tender process and structure, the BOQ structure and outlay as well as being open to suggestions and receiving tender submission online.

This flexibility cost increases as the measure of the principal's flexibility S decreases. The flexibility cost is further directly proportional to the additional cost incurred by the agent due to the inflexibility of the principal f , as well as the level of flexibility required by the agent a , to effectively and accurately calculate and execute the contract.

The **flexibility cost** is therefore shown as

$$F(a,q) = (1-S)faq, \text{ where}$$

S = the level of flexibility of the principal, where $(0 < S < 1)$; f = level of flexibility $(0 < f < 1)$ required by the agent; a = the additional cost per unit incurred by the agent due to the inflexibility of the principal; and q = the quantity of the contracted work.

Enforcement costs

The enforcement cost is incurred by principals and agents as a result of the other contracting party providing substandard work or services or defaulting on payments due. Principals need to take precautionary measures such as investments in insurance, and to require performance guarantees from agents. Agents on the other hand need to request up-front payments or payment guarantees. These incur the bearer additional costs, even if the guarantee hasn't been actuated.

This cost is further directly dependent on the cost e , of enforcing the contract as well as α , the proportion of substandard work or payment relative to the total work or payment due. These costs can include the enforcement through legal action and related measures.

The **enforcement cost** can therefore be shown as

$$E(e,q) = \alpha eq, \text{ where}$$

α = the proportion of substandard work ($0 < \alpha < 1$), delivered by the agent relative to the total contract work delivered, or the proportion of short or default payments ($0 < \alpha < 1$), relative to the total payments due by the principal; e = the additional cost per unit of enforcing the contract for the particular substandard work; and q = the quantity of the contracted work.

Reputational costs

Reputational cost is incurred by the principal as a result of the agents, which in turn impacts negatively on the general public opinion held about the principal. This can have a substantially detrimental effect if the principal is a listed company and commands a high value in the general public opinion, which is important for share-price demand.

The actions of the agent leading to a poor reputation for the principal can stem from a poor safety standard or even a disregard for government legislation or institutional requirements. The reputational cost incurred is therefore dependent on the level of performance of the agent, which will include the standard and quality of performance.

The **reputational cost** is therefore shown as

$$R(P, q) = [(1 - P/P)]hrq, \text{ where}$$

P = the level of performance of the agent relative to the standard required by law and public opinion, where ($0 < P < 1$); h = the level of performance required by the principal relative to the requirement by law and public opinion, where the principal requires a zero tolerance then ($h=1$), and it is therefore expected under normal conditions that h would disappear from the equation; r = the additional cost per unit incurred by the principal due to its declined reputation; and q = the quantity of the contracted work.

Opportunistic behaviour costs

Opportunistic behaviour cost is incurred by either the principal or the agent as a result of the other party taking advantage of a specific situation for their own benefit, but to the detriment of the other.

This opportunistic behaviour cost increases for one party as it loses value due to the actions, or lack thereof, of the other party.

The **opportunistic behaviour cost** is therefore shown as

$$O(d,q) = \sigma dq, \text{ where}$$

σ = the proportion of the contract work ($0 < \sigma < 1$) exposed to a level of opportunistic behavior relative to the total contract work; d = the additional cost per unit incurred by one party due to the opportunistic behaviour of the other; and q = the quantity of the contracted work.

Asymmetric information costs

An asymmetric information cost is incurred by either the principal or the agent as a result of the other party possessing information and utilising such information for his/her own benefit and to the detriment of the other. The value of the cost is mostly dependent on the value of the opportunity lost by one party. The value is not dependent on the potential value generated for the other party if it is not to its own detriment.

This asymmetric information cost increases as the proportion of information unknown to either party β increases in relation to the total information. It is also dependent on the value of the opportunity lost c .

The **asymmetric information cost** is therefore

$$A(c,q) = \beta cq, \text{ where}$$

β = the proportion of information ($0 < \beta < 1$) available to one party, but unknown to the other, in relation to the total collective body of information available; c = the value per unit, of the opportunity lost due to the lack of information; and q = the quantity of the contracted work.

Total net benefit relooked

Total Net Benefit (T_B) = Principal surplus (S_P) + Agent surplus (S_A)

$$\begin{aligned}
&= vq - cq - (C_P(S,E,R,O,M) + C_A(S,F,E,O,M)) \\
&= vq - cq - [(S_P(i,q)+E_P(e,q)+R_P(P,q)+O_P(d,q)+A_P(c,q)) + \\
&\quad (S_A(i,q)+E_A(e,q)+F_A(a,q)+O_A(d,q)+A_A(c,q))] \\
&= vq - cq - [(\mu iq + \alpha eq + [(1-P/P]rq + \sigma dq + \beta cq) + \\
&\quad (\mu iq + \alpha eq + (1-S)faq + \sigma dq + \beta cq)]
\end{aligned}$$

Therefore the Total Net Benefit (T_B)

$$\begin{aligned}
&= vq - cq - (TC_{\text{principal}} + TC_{\text{agent}}) \\
&= vq - cq - (\text{Total TC})
\end{aligned}$$

Chapter 7: Shortcomings and possible future research

7.1 Shortcomings in this research

All research is susceptible to error. In qualitative research specifically, the *symptom* can be difficult to separate from the *condition*, and even the question to the respondent may not be well defined. In such an uncertain and flexible situation, identifying reliable information can be both confusing and even contradictory. Making assumptions and deriving implications can therefore be extremely difficult.

Nevertheless, all researchers, including qualitative researchers, are only human. The most responsible researcher is susceptible to making honest mistakes in the design of a research subject, the accumulation of respondent responses as well as the interpretation and formulation of findings.

Despite this difficult setting, the researcher attempted to be accurate in executing the above task.

Personal bias

A biased sample is one which contains characteristics that differ from those of the population. This bias may happen by chance, but is usually due to selection criteria. Selection bias occurs when participants are selected in a way that increases the probability of acquiring a biased sample. For example, if a researcher recruits participants from a gym, they are likely to be healthier and fitter than the rest of the general public.

The researcher is well aware of his commitment and preference to the subject and possible biased interpretation of the research findings. The researcher might even exercise his personal bias by unintentionally trying to clarify concepts and explaining definitions to respondents. Therefore, in attempting to remove interviewee bias, the interviewer might inadvertently exercise bias.

It is also possible that the researcher could over-emphasise matters confirming his preferred findings and underestimating the facts, and in the process contradicting his expected outcome. It is for this reason that the researcher ensured that he invested

time in properly interrogating facts that concerned him and seemed to be contrary to his expected research findings.

The researcher is well aware that he has previous experience regarding the concept, and although currently exposed to the tendering context of principals, all previous exposure was in the context of agents. This could result in the researcher being biased towards over-emphasising or exaggerating the responses from agents.

The researcher also has 14 years' exposure in the mining industry and therefore made a conscious attempt to also interview respondents from different industries and contexts.

Confounding

In order to rule out the possibility that a relationship between two decisions, variables or perceptions has been distorted by other external factors, it is necessary to control the extent of confounding. Confounding factors are therefore possibly the reason why we see specific outcomes which may have nothing to do with what is being determined or tested.

In order to rule out confounding, additional information must be gathered and analysed regarding the context and surroundings that could possibly influence outcomes. When evaluating the responses to research, it is necessary to determine whether the research may have coincided with any external factors influencing the response of respondents.

In the case of this research, which was conducted across several different industries ranging from agriculture to mining and consulting, this becomes unlikely unless responses are influenced by large macro-economic factors acting across industries. No micro-economic legislative or regulatory changes have been observed across industries over this time period.

In order to prevent a biased interpretation of the research results, the exaggeration of findings is purposefully addressed, although this cannot be altogether eliminated. The researcher inevitably becomes attached to the research results over time, and might to some extent be subject to bias, even when determining the extent of confounding.

Respondent distribution

Two-thirds of the respondents were from a mining environment, and eight of the 12 respondents were from a similar background. This could possibly result in over-emphasising concepts prevalent in this context. It is also unfortunate that only one female respondent was interviewed.

The distribution of respondents was such that respondents from ten different firms were interviewed and only in the case of two firms, more than one interviewee was interviewed.

The distribution of respondents in relation to years of experience ranged from eight to 30 years. The size of tender respondents were exposed to a range from 50 thousand to several 100 million ZAR. The level of authority of respondents ranged from line management to directors level, although all respondents were required to be actively contributing to the tendering exercise, either as his/her sole responsibility or in a supportive role.

The spread of respondents was seen as contributing to a wide range of views which should lead to a balanced sample.

Research relevance revisited

Did the research address an existing need? The research was found to address an economically relevant concept in an environment of tendering which has previously received very little attention from TC researchers. This holds true specifically in the very recent context of tender developments.

The outcomes as outlined in chapter 6 are certainly well-aligned with current opinion in TC economics. The outcomes are relevant to the groups interviewed, and the research took place in a setting where tender exposure is exceptionally relevant.

Research effectiveness

The research did achieve the initial intention of determining factors that could reduce TCs to both parties to the tender process. The research findings were even more relevant as only one respondent was familiar with the concept of TC, although not the

terminology. The findings therefore were tested in a context where the concept was not previously utilised.

Research sustainability

The fact that the concept of TC has only been developed in the last few decades makes it difficult to make any assumptions regarding the possible future intervention and implementation of the consequences of the concept. There is proof, however, that economic theory has experienced substantial attention since the inception of TCE, but the future implementation or replacement by contradicting research is difficult to judge.

7.2 Possible future research

Due to the shortcoming of this research, with 67% of the respondents working in the mining industry, a more widely representative sample would add to an improved quota spread and subsequent more reliable findings.

The researcher has not prepared his research questionnaires with the initial intent to fully investigate proof of any relational power-base changes in the contractual relationship between the principal and agent. It can therefore be assumed that for the context of this research, the power base within the contract remained static from the stage of signing the contract until final execution and closure.

This could only be implied from assumptions made on questions asked with a different intent. It is suggested that future research be conducted to test the ability of either party to influence and control the contract. The further testing of the change in controlling power developing over time, would add to the understanding and preparation for expected TC developing. The changes in control during the life-cycle of the contractual relationship will contribute to the literature in the current context.

Future research could further be focused more specifically on the effect of prior contractual exposure between two parties and their future relationship. As indicated in chapter 6, any extension of existing contracts, or the request for quotes for work from agents with which the principal has a prior work relationship, proves to be problematic. These TCs could be addressed, or even overcome, if proper research could be done to reveal the nature thereof as well as reasons for these phenomena.

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Appendices

Appendix 1: Letter of consent

Informed consent letter

This letter serves to obtain the consent or disapproval of a third party to participate in an interview used in research conducted in the process of fulfilling the requirements for a Master's degree at the University of Pretoria's Gordon Institute of Business Science.

I am conducting research on tendering processes, and am attempting to determine more about the true reason for costs reflected in tenders. I am determining what the true costs are of transacting or doing business. More specifically I want to determine what the costs are implied by, and associated with, the tendering process from both the client and the supplier's point of view.

Our interview is expected to last approximately one hour, and will help to understand how Principals can reduce their Supplier's expectation of production and other related costs as a result of the tender process. This will further assist in understanding how Suppliers can increase the value associated with their tender submissions to Principals.

Your participation is voluntary and you can withdraw at any time without penalty.

Please note that all data will be kept confidential. If you have any concerns, after the interview took place, please feel free to contact either myself or my research supervisor. Our details are provided below:

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Signature of participant: _____.

Date: _____.

Signature of researcher: _____.

Date: _____.

Appendix 2: Detailed description of the pilot interviews conducted

The initial intention was to limit the number of questions in the questionnaires to between thirty and forty. However, during the pilot interviews it was observed that the questions were too brief and not sufficiently self-explanatory. Additional questions had to be included, which increased the number of questions to 44 and 53 for principals and agents respectively. During the first interview it became apparent that as the discussion progressed and questions were put to respondents, the interviewer had to complete each questionnaire himself.

Target questions used in both the principal and agent questionnaires were expected to change during the course of the research. The reason for this is that the level of knowledge and understanding of the micro-economic concepts as well as the specific research method used could be familiar to the respondents to varying degrees because of previous experience. It was expected that respondents might use different terminology for different concepts and processes utilised in their respective tendering procedures.

For this reason three pilot interviews were initially conducted with one agent respondent and two principal respondents. The two questionnaires differed in a number of ways. Firstly, it was found that an initial concern that respondents would not be familiar with the terminology of *principals* and *agents* was unfounded as respondents quickly grasped the concepts once explained, and were comfortable using the terminology once they became accustomed to the questionnaires throughout the questionnaires. However, it was found that the concept of suppliers and buyers was more regularly used in the market, and therefore the headings of both questionnaires were left as *buyers* and *suppliers* as opposed to *principals* and *agents*. Secondly, a few questions were rephrased to clarify their meaning and assist in the understanding and interpretation of the questions. Lastly, a number of questions were added where information was found to be lacking in terms of understanding the full extent of the transaction costs tested. For example, principals were asked whether agents usually ask for extensions to the tender submission dates (principal questionnaire, question 3). As the pilot interviews progressed, respondents volunteered more details regarding specific issues in this regard. Three follow-up questions were asked to determine what period of time a principal would allow, and whether an extension would result in additional costs to the principal, and what the

extent and value of these costs would be. These questions facilitated greater in-depth interrogation into a particular matter, and assisted in understanding the reasoning behind and consequences of time constraints in the tendering process.

Similarly, questions were added to the agent questionnaire addressing principal-specific risk and opportunistic behaviour in more detail.

Thereafter the revised questionnaires were tested again in a second pilot study that consisted of a further two interviews, one each with a principal and an agent respectively. These questionnaires resulted in further changes in the wording of some of the questions as well as a number of cosmetic changes.

It was foreseen that this approach would facilitate the gradual elimination of factors which would have little or no significant impact on the successful adjudication and net benefit of the inter-firm contract. Unfortunately, it did not lead to the elimination of questions, but instead led to additional questions in order to quantify certain proportions in additional transaction costs identified. This created a robust framework that addressed only the relevant factors in the contract/transaction cost picture.

As indicated earlier, an exception to the norm in terms of the sample was one of the first few interviewees, namely a consultant contracting directly for a principal firm. This qualified him for the principal questionnaire simply by virtue of the nature of his work, although he could be seen as an agent.

The pilot studies allowed the questions to be adapted in such a way as to make them applicable to both consultants as principals and agents. For ease of reference, all changes and additional questions were highlighted in red in the questionnaires as depicted in appendices 3 and 6.

Appendix 3: Collation of the interview results for questions that required Likert scale responses, conducted with agent respondents

The questionnaire below is consistently referred to as the *agent questionnaire* throughout the research paper.

Below are the collated results from all the questions that required only Likert scale responses. The results were received during interviews held with agent respondents only, which were the respondent numbers as depicted below.

All questions, or portions thereof, highlighted in red, indicated wording that was added to the questionnaire, subsequent to the five pilot interviews, to add clarity as well as additional required information.

Part B - Only applicable to respondents working for a 'Supplier'

Respondents' responses					
1	4	7	8	9	10

Supplier Questions	Scale
--------------------	-------

1

Is the information supplied **by Principals** with tenders, **usually** adequate to calculate an accurate tender?

Always
Usually

Seldom
Never

3	3	3	3	3	3
---	---	---	---	---	---

2

In the case where additional information have been requested, it is usually then adequately supplied **and allow the supplier to accurately calculate the tender.**

1	2	3	4
---	---	---	---

3	2	1	1	3	2
---	---	---	---	---	---

3

If information is still inadequately supplied, do you allow for the remaining uncertainties in your tender rates, or do you decide not to tender?

Allow for in the rates

Do not tender

	1	2	1	1
--	---	---	---	---

4

To what extent does the inadequacy of any information influence your tendered rates ie. Select one of the following and indicate to what extent it is altered

Increase markup Percentage by %
 Add an additional risk premium to rates by %
 Ask for extension of project termination date by Days
 Increase Preliminary and General charges by %

	5	20
	5	10

5	It is necessary to keep a good relationship with a Principal, in order to get invited to tender.	1	2	3	4	3	2	1	1	1	2
6	Principals put tenders together, with the Supplier in mind.	1	2	3	4		2	2	3	2	2

7	How often is it evident that a proper structure have been followed to put the tender documents together with maybe the help of parties or consultants etc.?	Always	<input type="checkbox"/>	Seldom	<input type="checkbox"/>		3	2	3	3	3
		Usually	<input type="checkbox"/>	Never	<input type="checkbox"/>						

8	It is always necessary to request for an extension of time to submission, as Principals always allow too little time.	1	2	3	4	3	2	3	1	2	2
---	-----------------------------------------------------------------------------------------------------------------------	---	---	---	---	---	---	---	---	---	---

9	In the case where additional time have been requested, it is usually allowed by the principal by postponing the submission date.	1	2	3	4			2		2	2
---	-----------------------------------------------------------------------------------------------------------------------------------------	---	---	---	---	--	--	---	--	---	---

10 **To what extend does the inadequacy of time to accuretly calculate the rates, influence your tendered rates ie. Select one of the following and indicate to what extend it is altered**

Increase markup Percentage	by	<input type="checkbox"/>	%		4		20
Add an additional risk premium to rates	by	<input type="checkbox"/>	%		4		7
Ask for extension of project termination date	by	<input type="checkbox"/>	Days				
Increase Preliminary and General charges	by	<input type="checkbox"/>	%				

11 What are the **three** most important problems experienced when completing tenders?

Inadequate information	<input type="checkbox"/>	1	1	3	5	4	1
Inadequate time	<input type="checkbox"/>						
Principal's minimum requirements	<input type="checkbox"/>						
Bill of Quantity (BOQ) outlay	<input type="checkbox"/>						
Principal's disregard for technical limitations	<input type="checkbox"/>						

12 In your opinion, what are the main reason, why you lose most of the tenders that you submit and aren't successful?

Price	<input type="checkbox"/>	2	1	1	1	1	1
Misunderstanding Principal's information	<input type="checkbox"/>						
Information misunderstood by	<input type="checkbox"/>						

Principal
 Too low BEE rating
 Not being familiar with anybody
 working for Principal

13 On what grounds do you decide not to submit a tender or not?

Comment:

14 Suppliers regularly need to request an alteration to the layout of the Principal's Bill of Quantity (BOQ).

1	2	3	4
---	---	---	---

3	2	3	1	1	2
---	---	---	---	---	---

15 Indicate the amount of man-hours needed to properly calculate and submit a tender on average.

hours

16 You prefer to submit tenders electronically on-line

1	2	3	4
---	---	---	---

85	120	350	104	100	160
1	4	3	4	2	4

17 Do you attempt to make contact with the Principal and negotiate rates before the submission date?

Always Seldom
 Usually Never

3	4	4	4	4	1
---	---	---	---	---	---

18 Are you willing to commence work before a contract is signed?

Yes No

1	2	1	1	2	2
---	---	---	---	---	---

19 Rank in order of importance, the **3 factors** you deem the most important to evaluate the Principal's ability to reliably fulfil obligations and pay for the services rendered.

Brand reputation
 Past experience
 Personal relationships
 Financial health
 Amount of Corporate bureaucracy

2	4	4	2	4	2
---	---	---	---	---	---

20 How do you compensate or allow for unforeseen problems in fulfilling your obligations during the contract period?

Comment:

21 How do you hedge yourself against possible opportunistic behaviour by the principal?

Comment:

22 What percentage (%) of the total contract value **of your submission**, is dependent on the risk associated with the Principal?

Percent (%)

2	2	4	8	10	13
---	---	---	---	----	----

23 Do you evaluate any factors other than 'cost' in order to determine the value of your price?

Yes No

1	2	1	1	1	1
---	---	---	---	---	---

24 If any, indicate what % weighting do you attach to non-'price' factors in evaluating the markup on your price.

Principal payment terms risk
 Project schedule
 Fuel associated risk
 Labour associated risk
 Safety requirements risk
 Principal opportunistic behaviour risk

50	5	1	5	20	12
		1			5
			5	5	
3					
20	3			1	12
		1	5		

25 You prefer to provide performance guarantees to the Principal.

1	2	3	4
---	---	---	---

3	4	2	4	3	2
---	---	---	---	---	---

26 If you do provide guarantees, indicate what % of the total contract value you prefer to provide as a performance guarantee?

Percent (%)

10	2	2	2	10	5
----	---	---	---	----	---

27 Under what conditions would you attempt to negotiate the above required guarantee to be reduced?

Comment:

28 In the case of incomplete information supplied with a tender, do you request further detailed information or do you decide not to tender?

Not submit Request further detail

2	2	2	2	2	2
---	---	---	---	---	---

29 Do you sometimes decide not to tender?

Sometimes Never

1	1	1	1	1	1
---	---	---	---	---	---

30 Do you prefer to meet with a Principal as a shortlisted suppliers to negotiate before adjudication?

Yes No

1	2	3	4
---	---	---	---

1	1	1	1	1	1
3	2	2	1	1	3

31 These negotiations usually result in lower rates for tendered work.

32 Do you allow for these early discounts to be given in the first round of negotiations, by adding it into your **initial tendered** rates?

Yes No

1	1	2	1	1	2
---	---	---	---	---	---

33 Do you start actual work to commence before the contract is formally signed?

Yes No

1	2	1	1	2	2
---	---	---	---	---	---

34 Contracts can to a large extent be altered or re-negotiated after adjudication.

1	2	3	4
---	---	---	---

2	2	4	3	2	3
---	---	---	---	---	---

35 How do you measure the Principal's participation in the contract?
 Comment:

36 How do you manage disputes resulting from your relationship with the Principal?
 Ad-hoc According to contract only

37 **Disputes experienced with a specific Principal in the past, will influence future rates submitted to the same principal, by adding an additional premium.**

1	2	3	4
---	---	---	---

2	1	2	1	1	2
		2		2	1

38 **Very strict client requirements experienced with a specific Principal in the past, (ie. Specific safety requirements) will influence future rates submitted to the same principal by adding an additional premium.**

1	2	3	4
---	---	---	---

		2		2	1
--	--	---	--	---	---

39 **When you add a risk related premium into you rates, attributable to Principal specific concerns, this will be hidden in the rates and not appear as a line item in the Bill of Quantities (BOQ).**

1	2	3	4
---	---	---	---

		1		2	2
--	--	---	--	---	---

40 **In the case where you've added a risk related premium into your rates, attributable to Principal specific concerns, what average percentage of the total contract value did this relate to?**
 Percent (%)

	1	10	10
--	---	----	----

41 How do you enforce the existing contract?
 By withholding service/products By going to Court

42 How often do disputes arise?
 Always Often Seldom Never

43 How often is it necessary to indicate to the Principal that a form of non conformance was the result of the Principal's information being wrong, inadequate or misleading at the time of tender?
 Always Often Seldom Never

44 What external factors can lead to changes in the terms and conditions of the contract, including the price, after the contract was signed and the work commenced?
 Comment:

45 If the Principal incurs lower costs due to changes in **your product/ service**, or external conditions, after the work commenced, would you expect to share in the benefit?

Yes No

1	2	1	1	1	1
---	---	---	---	---	---

46 How often have you experienced opportunistic behaviour from a Principal before?

Constantly Seldom
Often Never

3	3	3	2	1	3
---	---	---	---	---	---

47 Indicate the most regular experienced opportunistic behaviour.

Comment:

48 Does a Supplier get the chance to renegotiate the contract?

Constantly Seldom
Often Never

1	3	4	3	3	3
---	---	---	---	---	---

49 Indicate what relationship specific issues exist on the Supplier's side of the contract, that prevent him from changing between principals

Comment:

50 Do you expect to receive improved rates (higher price), in the event of better quality or performance for the Principal?

Definitely Unlikely
Most likely Never

4	2	3	1	1	3
---	---	---	---	---	---

51 Indicate what switching costs the Supplier would experience when switching to a new Principal, in the event of non-payments by the Principal

Comment:

51 Have the Principal made site/project specific investments, designed for the purpose of the contract?

Definitely Unlikely
Most likely Never

4	2	1	1	3	2
---	---	---	---	---	---

52 Do the risk involved in site specific investments for both parties get negotiated?

Definitely Unlikely
Most likely Never

4	4	4	2	2	2
---	---	---	---	---	---

53 **Principals always allow enough time for proper adjudication, contract negotiations and execution.**

1	2	3	4
---	---	---	---

3	2	4	4	3
---	---	---	---	---

Appendix 4: Table of normalised interview results from agent questionnaires

Respondent's number:	Responses						Reworked/normalised values					
	1	4	7	8	9	10	1	4	7	8	9	10
Question number:												
1	3	3	3	3	3	3	1	1	1	1	1	1
2	3	2	1	1	3	2	1	0	-1	-1	1	0
3	n/a	n/a	1	2	1	1	0	0	2	0	2	2
5	3	2	1	1	1	2	-1	1	2	2	2	1
6	n/a	2	2	3	2	2	0	-1	-1	1	-1	-1
7	n/a	3	2	3	3	3	0	1	-1	1	1	1
8	3	2	3	1	2	2	-1	1	-1	2	1	1
9	n/a		2	n/a	2	2	0	0	-1	0	-1	-1
14	3	2	3	1	1	2	-1	1	-1	2	2	1
16	1	4	3	4	2	4	-2	2	1	2	-1	2
17	3	4	4	4	4	1	-1	-2	-2	-2	-2	2
18	1	2	1	1	2	2	2	0	2	2	0	0
23	1	2	1	1	1	1	1	2	1	1	1	1
25	3	4	2	4	3	2	1	2	-1	2	1	-1
28	2	2	2	2	2	2	1	1	1	1	1	1
29	1	1	1	1	1	1	1	1	1	1	1	1
30	1	1	1	1	1	1	-1	-1	-1	-1	-1	-1
31	3	2	2	1	1	3	-1	1	1	2	2	-1
32	1	1	2	1	1	2	1	1	2	1	1	2
33	1	2	1	1	2	2	2	0	2	2	0	0
34	2	2	4	3	2	3	1	1	-2	-1	1	-1
36	2	1	2	1	1	2	2	1	2	1	1	2
37	n/a	n/a	2	n/a	2	1	0	0	1	0	1	2
38	n/a	n/a	2	n/a	2	1	0	0	1	0	1	2
39	n/a	n/a	1	n/a	2	2	0	0	2	0	1	1
41	2	1	2	1	1	1	3	2	3	2	2	2
42	2	3	3	2	3	3	1	-1	-1	1	-1	-1
43	3	3	3	3	2	3	0	0	0	0	1	0
45	1	2	1	1	1	1	2	1	2	2	2	2
46	3	3	3	2	1	3	1	1	1	2	3	1
48	1	3	4	3	3	3	-2	1	2	1	1	1
50	4	2	3	1	1	3	-2	1	-1	2	2	-1
51	4	2	1	1	3	2	-2	1	2	2	-1	1
52	4	4	4	2	2	2	2	2	2	-1	-1	-1
53	n/a	3	2	4	4	3	0	1	-1	2	2	1

Appendix 5: Collation of the interview responses for questions that required remarks in its responses, as conducted with agent respondents

The remarks below were made by agent respondents in their respective interviews in response to questions that required remarks or discussions to clarify or explain details regarding certain transaction costs.

It was identified that respondents usually responded by indicating that they either *strongly agreed* or *strongly disagreed* with an argument or statement, in cases where their rationale and thinking were shaped by prior experience regarding the subject under discussion. For this reason, respondents were sometimes requested to *clarify*, *explain* or to *discuss in more detail*, any response to other Likert scale questions, whenever the interviewer sensed that the question evoked a drastic response or when the respondent related to prior experiences with either good or bad memories. Therefore, some questions with Likert scale answers will be listed below with the details given by the respondents when the questions were further discussed.

Only the questions (which will also be reflected in the agent questionnaire, appendix 3) will be given, together with the responses of all the agents. The probing questions asked by the interviewer will not be listed here, and the assumption was made that the questions quoted from the questionnaire were sufficiently detailed to clarify and understand the different responses.

Question 13. On what grounds do you decide not to submit a tender?

Respondent 1: *Project size and length.*

Respondent 4: *If it's a budget price only or we are not competent enough for it.*

Respondent 7: *When the project time frame is too short or the job is too small or too big. When the effort is not worth the tender value, or we don't have enough machines available.*

Respondent 8: *If the experience or security of the small junior miner clients makes it risky, in which case we will request a payment guarantees in any case. If the client has a bad paying reputation.*

Respondent 9: *If the technical requirements of the work is out of our scope, or if the client doesn't understand our solution, or if the client doesn't want to engage to understand.*

Respondent 10: *If the principal provide inadequate information or unrealistic completion time or date.*

Question 20: How do you compensate or allow for unforeseen problems in fulfilling your obligations during the contract period?

Respondent 1: *Add a percentage of risk premium, Is the condition of contract clear or not? Does it differ?*

Respondent 4: *Specify it in the qualification letter.*

Respondent 7: *The risk will be priced in as well as up front payments.*

Respondent 8: *At the tender stage, give the tender a comfort rating; if its area or client specific. Qualify it out in the submission or request an extension of time.*

Respondent 9: *Qualify...the same penalty to apply to the principal as the agent. In quality control plan...the principal has to check compliance and complain within three days.*

Respondent 10: *Build in additional time for completion. Ensure timeous communication with the principal.*

Question 21: How do you hedge yourself against possible opportunistic behaviour by the principal?

Respondent 1: *Through the clarification letter and risk premiums.*

Respondent 4: *Our commercial director to take responsibility for this.*

Respondent 7: *Through the risk priced in, and up-front payments. Negotiate the payment terms as short as possible ie. equal or less than 30 days.*

Respondent 8: *Request a payment guarantee. Write an essay on each qualification and contract item. Also only apply best practise.*

Respondent 9: *Payments up-front; Need proof of payments and proof of receipt from bank before we start or If it's big...50 percent payment up-front and 50 percent on submission of lading at the border.*

Respondent 10: *Hedge by a proper contract. Properly explain ways of measurement, time to payment and first payment dates, ie. at least 50 percent before site establishment.*

Question 27: Under what conditions would you attempt to negotiate the above required guarantee to be reduced?

Respondent 1: *If it is prescribed in the conditions of contract. You must always ask to review! Prefer five percent.*

Respondent 4: *If it is ten percent of the contract value, it is unreasonable.*

Respondent 7: *A contract that will not be stopped or long term relationships. If we know we will stay there for long.*

Respondent 8: *The client's track record and past experience. Leverage of other projects for the same client. I don't think it is necessary in the mining environment – there it is just a governance tool.*

Respondent 9: *In a long standing relationship, past experience, or the amount of orders received from the same client before.*

Respondent 10: *If there is a time restriction to the completion date.*

Question 35: How do you measure the Principal's participation in the contract?

Respondent 1: *It's meeting participation, showing it's committed to the project.*

Respondent 4: *Body language, is he receptive to our suggestions as well as the questions he asks.*

Respondent 7: *By looking at the quality of the scope of work and the detail supplied.*

Respondent 8: *I disagree! It cannot be viewed as a partnership. Evaluate his past experience and his attitude. Listen to word of mouth.*

Respondent 9: *Large principals delay the finalisation and signing of the contract. They refuse to negotiate contracts, and force their usual standard terms down on the agent.*

Respondent 10: *Site meetings on a regular basis as well as their understanding and ease of getting to agreements.*

Question 44: What external factors can lead to changes in the terms and conditions of the contract, including the price, after the contract was signed and the work commenced?

Respondent 1: *Consequential rain delays. A lack of initial information. The construction plan sometimes waives after the starting date...then its late.*

Respondent 4: *Macro economic factors – factors not covered by the escalation formula [as written in the contract]. Force majeure factors and strike actions.*

Respondent 7: *Geological changes [in mining related tenders - changes to geological information supplied at tender stage and used to calculate tender rates].*

Respondent 8: *Technical information such as geology and rain. Legislative changes ie. the mining charter [changes to]. Social changes to social and labour plan (SLP) [changes to the principal's (SLP)] you have to ask for money only afterwards, which is not mentioned at tender stage! These should not be the supplier's obligation.*

Respondent 9: *Economic changes such as substantial changes to the exchange rate, for which you have to re-negotiate.*

Respondent 10: *Adverse weather conditions ie. rain.*

Question 47: Indicate the most regular experienced opportunistic behaviour.

Respondent 1: *Unrealistic time constraints...if you accept the time limit, you get the tender.*

Respondent 4: *They [the principal] make mistakes [in their tender information initially supplied] and ask you to make changes to your own cost [in order to accommodate the changes].*

Respondent 7: *Excuses for late payments.*

Respondent 8: *P&G's [the fixed monthly preliminary and general charges in the contract rates], This or that should have been in your P&G's...then they look for excuses to reduce your unit rates or you P&G rate. I know that they [consultants hired by principals] work to see where they can create a discount opportunity from the supplier.*

Respondent 9: *[The principal]...not willing to assist with the exchange rate...[unforeseen changes].*

Respondent 10: *Payment postponement on purpose.*

Question 49: Indicate what relationship specific issues exist on the Supplier's side of the contract, that prevent him from changing between Principals.

Respondent 1: Not answered.

Respondent 4: *Damage to their reputation, as well as de-establishment costs [not being paid].*

Respondent 7: *The contract as well as the logistics and positioning [geographical position] will incur costs to change. For example to move equipment out of the Congo! The geographic location to move away from.*

Respondent 8: *The contract locked into. The expectations of the new principal in terms of payments [they might be slow to pay statements].*

Respondent 9: *Some products that were customised to an extend [in order to fulfil the specific need of the principal – might not be the requirement for the next client/principal].*

Respondent 10: *The time spent on tenders as well as the establishment costs already spent.*

Question 51: Indicate what switching costs the Supplier would experience when switching to a new Principal, in the event of non-payments by the Principal.

Respondent 1: *Loss of P7G's and de-establishment costs and overall loss of revenue.*

Respondent 4: *De-establishment costs. Disruption in production to their [the principal's] clients. They [the principal] may not pay 'work in progress' [work done but not paid for yet].*

Respondent 7: *De-establishment cost, as well as the last outstanding payments! Legal costs [to recover all unpaid outstanding payments] and the need for future contracts to replace the existing. When the principal has to pay out all outstanding [payments] it results in a legal fight!*

Respondent 8: Not answered.

Respondent 9: Not answered.

Respondent 10: Not answered.

Appendix 6: Collation of the interview results for questions that required Likert scale responses, conducted with principal respondents

The questionnaire below is consistently referred to as the *principal questionnaire* throughout the research paper.

Below are the collated results from all the questions that required only Likert scale responses. The following results were received during interviews held with principal respondents only, which were the respondent numbers as depicted below.

All questions, or portions thereof, highlighted in red, indicated wording that was added to the questionnaire, subsequent to the five pilot interviews, to add clarity as well as additional required information.

Part B - Only applicable to respondents working for a 'Principal' or 'Buyer'

Principal/Buyer Questions		Scale				Respondents responses					
						2	3	5	6	11	12
1	When Requests for Quotes (RFQ's) are provided to respective Suppliers, they usually ask for more additional information .	1	2	3	4	1	2	3	3	1	1
2	When additional information is requested, it is usually well founded and contributes positively to the tendering process.	1	2	3	4	1	2	2	2	1	3
3	Suppliers usually don't ask for any extension of time to tender submission dates.	1	2	3	4	2	2	1	3	3	1
4	In the case where additional time is allowed for submissions, how many days of extension do they receive on average? <input type="text"/> days					7		7	7		0
5	Does this postponement of the submission date incur the Principal any additional costs? Yes <input type="text"/> No <input type="text"/>					1		1	2		2
6	In the case where the project schedule do gets postponed, what percentage (%) of the total contract value do the Principal incur as additional costs over and above the original projects costs, on average? <input type="text"/> Percent (%)					10		0			0
7	As a Principal, you perform a detailed internal estimation of the likely expected rates/prices before issuing a Request for Quote (RFQ).	1	2	3	4	1	2	2	1	3	2
8	The above calculations is usually done by third party experts or consultants.	1	2	3	4	3	3	2	3	1	1
9	As a Principal, you supply a detailed template for the Bills of Quantities (BOQ's) on which Agents should submit their rates.	1	2	3	4	1	2	1	1	3	1

10 Your Bill of Quantities (BOQ) is flexible and suppliers can adapt it to better suite their submission needs.

1	2	3	4
---	---	---	---

4	2	2	4	2	4
---	---	---	---	---	---

11 Indicate the average amount of man-hours needed to evaluate a tender/quote.

hours

48	10	1	240		90
----	----	---	-----	--	----

12 The quotes you require are submitted by suppliers on-line.

1	2	3	4
---	---	---	---

4	3	3	3	4	4
---	---	---	---	---	---

13 Indicate the percentage (%) of tenders that do not comply to tender instructions, or that are incomplete submissions.

Percent (%)

25	50	15	0	10	50
----	----	----	---	----	----

14 Which of the following is a bigger problem associated with suppliers?

Late submission Incomplete submission

2	2	1	2	1	2
---	---	---	---	---	---

15 Rank in order of importance, the factors you deem the 3 most important, to evaluate a supplier's ability to fulfill in the obligations under the contract.

Brand reputation	<input style="width: 50px; height: 20px;" type="text"/>
Past experience	<input style="width: 50px; height: 20px;" type="text"/>
Safety record	<input style="width: 50px; height: 20px;" type="text"/>
BEE status	<input style="width: 50px; height: 20px;" type="text"/>
Workforce stability	<input style="width: 50px; height: 20px;" type="text"/>
Other	<input style="width: 50px; height: 20px;" type="text"/>

2	2	6	1	2	2
---	---	---	---	---	---

If 'Other' please explain

:

--

16 Indicate as a percentage (%), how important is 'price' in assessing the value of a tender, compared to other factors.

Percent (%) out of 100%

30	75	80	80	90	50
----	----	----	----	----	----

17 Do you evaluate any factors other than 'price' in order to determine the value of a quote?

Yes No

1	1	1	1	1	1
---	---	---	---	---	---

18 If any, indicate what % weighting do you attach to non-'price' factors in evaluating the value of a supplier's quote.

Brand reputation	<input style="width: 50px; height: 20px;" type="text"/>
Past experience	<input style="width: 50px; height: 20px;" type="text"/>
Safety record	<input style="width: 50px; height: 20px;" type="text"/>
BEE status	<input style="width: 50px; height: 20px;" type="text"/>
Workforce stability	<input style="width: 50px; height: 20px;" type="text"/>

2	2	6	2	2	2
---	---	---	---	---	---

1

2

3

Other

If "Other" please explain :

19 It is important to request performance guarantees from suppliers.

1	2	3	4
---	---	---	---

1	2	2	1	4	1
---	---	---	---	---	---

20 If you do require guarantees, indicate what % of the total contract value do you require as a performance guarantee? Percent (%)

10	10	30	2		10
----	----	----	---	--	----

21 Under what conditions could the above required guarantee be reduced?
Comment:

22 In the case of incomplete information supplied with a tender, do you request further detailed information or do you immediately reject the quote?
Reject Request more detail

2	2	2	2	2	2
---	---	---	---	---	---

23 Do you select only one quote for Adjudication or do you compile a shortlist for further negotiations?
Select only one Create a shortlist

2	1	2	2	2	2
---	---	---	---	---	---

24 Do you feel that Principals should meet with shortlisted Suppliers to negotiate before adjudication?
Yes No

2	2	1	1	1	1
---	---	---	---	---	---

25 These negotiations result in lower rates for tendered work.

1	2	3	4
---	---	---	---

1	1	2	3	3
---	---	---	---	---

26 Do you perceive any discounts given in the first round of negotiations to be allowed for in the Supplier's initial rates submission?
Yes No

2	2	1	1	1	2
---	---	---	---	---	---

27 Do you allow actual work to commence before the contract is formally signed?
Yes No

2	2	2	2	2	1
---	---	---	---	---	---

28 Contracts can to a large extent be altered or renegotiated after adjudication .

1	2	3	4
---	---	---	---

4	2	2	3	2	2
---	---	---	---	---	---

29 How do you measure the supplier's contractual performance?
Comment:

30 How do you manage any disputes resulting from your relationship with the supplier?
Ad-hoc Address according to contract

2	1	1	2	1	2
---	---	---	---	---	---

- 31 How do you enforce the existing contract?
 By withholding payments By taking legal action
- 32 How often do disputes arise?
 Always Seldom
 Often Never
- 33 How often does the Supplier justify his non conformance by stating that the Principal's initial information at the tender stage were wrong, inadequate or misleading?
 Always Seldom
 Often Never
- 34 What external factors can lead to changes in the terms and conditions of the contract, including the price, after the contract was signed and the work commenced?
 Comment:
- 35 If the Supplier incurs lower costs due to changing external conditions, after the work commenced, would you expect to also pay less?
 Yes No
- 36 How often have you experienced opportunistic behaviour from an Supplier before?
 Always Seldom
 Often Never
- 37 Indicate the most regularly experienced opportunistic behaviour.
 Comment:
- 38 Does a Supplier get the chance to renegotiate the contract?
 Always Seldom
 Often Never
- 39 Indicate what relationship specific issues exist on the Principal's side of the contract, that prevent him from changing between Suppliers.
 Comment:
- 40 Indicate what switching costs the Principal would experience when switching to a new Supplier, in the event of non-conformance by the Supplier.
 Comment:

1	1	1	1	1	2
---	---	---	---	---	---

3	3	1	3	3	4
---	---	---	---	---	---

3	3	3	3	2	4
---	---	---	---	---	---

1	1	1	1	1	1
---	---	---	---	---	---

3	2	2	3	2	2
---	---	---	---	---	---

4	3	2	4	4	2
---	---	---	---	---	---

- _____
- 41 Do you expect to pay reduced rates (lower price), in the event of poor quality or performance from the Supplier?
- | | | | | |
|-------------|--|----------|--|-------------|
| Definitely | | Unlikely | | 1 2 3 4 1 3 |
| Most likely | | Never | | |
- 42 Do **Suppliers** have to make site/project specific investments, **designed for the purpose of the contract?**
- | | | | | |
|-------------|--|----------|--|---------|
| Definitely | | Unlikely | | 1 3 1 3 |
| Most likely | | Never | | |
- 43 Does the risk involved in site specific investments for both parties get negotiated?
- | | | | | |
|-------------|--|----------|--|-------------|
| Definitely | | Unlikely | | 1 2 1 2 2 4 |
| Most likely | | Never | | |
- 44 **You always allow enough time for proper adjudication-, contract negotiation- and project execution stages of all projects.**
- | | | | | |
|---|---|---|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | 2 | 3 | 4 | <div style="display: flex; align-items: center; justify-content: space-around;"> <div style="width: 10%; background-color: #cccccc; height: 20px;"></div> 2 3 3 2 4 </div> |
|---|---|---|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Appendix 7: Table of normalised interview results from principal questionnaires

Respondent's number:	Responses						Reworked/ normalised values					
	2	3	5	6	11	12	2	3	5	6	11	12
Question number:												
1	1	2	3	3	1	1	2	1	-1	-1	2	2
2	1	2	2	2	1	3	2	1	1	1	2	-1
3	2	2	1	3	3	1	-1	-1	-2	1	1	-2
5	n/a	1	n/a	1	2	2	0	2	0	2	-2	-2
7	1	2	2	1	3	2	-2	-1	-1	-2	1	-1
8	3	3	2	3	1	1	1	1	-1	1	-2	-2
9	1	2	1	1	3	1	2	1	2	2	-1	2
10	4	2	2	4	2	4	2	-1	-1	2	-1	2
12	4	3	3	3	4	4	-2	-1	-1	-1	-2	-2
17	1	1	1	1	1	1	2	2	2	2	2	2
19	1	2	2	1	4	1	2	1	1	2	-2	2
22	2	2	2	2	2	2	2	2	2	2	2	2
23	2	1	2	2	2	2	2	-1	2	2	2	2
24	2	2	1	1	1	1	2	2	-1	-1	-1	-1
25	1	n/a	1	2	3	3	2	0	2	1	-1	-1
26	2	2	1	1	1	2	2	2	-1	-1	-1	2
27	2	2	2	2	2	1	-1	-1	-1	-1	-1	2
28	4	2	2	3	2	2	2	-1	-1	1	-1	-1
30	2	1	1	2	1	2	2	-1	-1	2	-1	2
31	1	1	1	1	1	2	2	2	2	2	2	2
32	3	3	1	3	3	4	-1	-1	2	-1	-1	-2
33	3	3	3	3	2	4	-1	-1	-1	-1	1	-2
35	1	1	1	1	1	1	2	2	2	2	2	2
36	3	2	2	3	2	2	-1	1	1	-1	1	1
38	4	3	2	4	4	2	2	1	-1	2	2	-1
41	1	2	3	4	1	3	2	1	-1	-2	2	-1
42	1	n/a	n/a	3	1	3	2	0	0	-1	2	-1
43	1	2	1	2	2	4	-2	-1	-2	-1	-1	2
44	n/a	2	3	3	2	4	0	-1	1	1	-1	2

Appendix 8: Collation of the interview results for questions that required remarks in its responses, conducted with principal respondents

The remarks below were made by principal respondents in their respective interviews in response to questions that required remarks or discussions to clarify or explain some details regarding certain transaction costs.

It was identified that respondents usually responded by indicating that they either *strongly agreed* or *strongly disagreed* with an argument or statement, in cases where their rationale and thinking were shaped by prior experience regarding the subject under discussion. For this reason, respondents were sometimes requested to *clarify*, *explain* or to *discuss in more detail*, any response to other Likert scale questions, whenever the interviewer sensed that the question evoked a drastic response or when the respondent related to prior experiences with either good or bad memories. Therefore, some questions with Likert scale answers will be listed below with the details given by the respondents when the question was further discussed.

Only the questions (which will also be reflected in the principal questionnaire, appendix 6) will be given, together with the responses of all the principals. The probing questions asked by the interviewer will not be listed here, and the assumption was made that the questions quoted from the questionnaire were sufficiently detailed to clarify and understand the different responses.

Question 19: Under what conditions could the above required [performance] guarantee be reduced?

Respondent 2: *Unless he* [the agent] *can proof the contrary* [that the guarantee is not needed ie. he poses no risk to the performance quality etc.]

Respondent 3: Not answered.

Respondent 5: *Past experience, can waiver a percentage. **Not any accreditation of some sort!*** [emphasis added].

Respondent 6: *No, the principal legal department determines it [and therefore cannot be negotiated].*

Respondent 11: *Not applicable [it is assumed that this cannot be negotiated].*

Respondent 12: *If it is a reputable supplier it can be 0%.*

Question 29: How do you measure the supplier's contractual performance?

Respondent 2: *On the itemised bill – per line item. On the mining contract – his daily and monthly performance.*

Respondent 3: Not answered.

Respondent 5: *For Products – whether it is ‘on time’ and it’s quality. For Services – whether it is of good quality, ‘safe’ and ‘time’ [whether it is done within the required time frame].*

Respondent 6: *In mining contracts, measure his production performance. In civil contracts, measure his quality and schedule [‘on time’ delivery].*

Respondent 11: Not answered.

Respondent 12: *By means of targets and actuals [by comparing actual performance against the required targets].*

Question 34: What external factors can lead to changes in the terms and conditions of the contract, including the price, after the contract was signed and the work commenced?

Respondent 2: *External issue, legislative issues with financial implications.*

Respondent 3: *Factors outside the control of the contractor [agent].*

Respondent 5: *For Products – raw material availability and labour action. Macroeconomic forces, and not the exchange rate, as they [the agent that submitted the quote] should hedge themselves against for the period of the quote validity. For Services – weather and industrial action.*

Respondent 6: *Safety, such as Fatal Risk Protocols required later on, as well as Ikaya bonuses* [prescribed by the principal to be paid by the agent to his employees].

Respondent 11: *Additional scope* [additional items added to the original scope tendered on] *or scope changes*.

Respondent 12: *Rain, weather conditions, geological conditions and a change of scope*.

Question 37: Indicate the most regularly experienced opportunistic behaviour.

Respondent 2: *Overstating asset performance*.

Respondent 3: Not answered.

Respondent 5: *After their high price has been accepted – they state what was not in the initial price*.

Respondent 6: *The measurement of work done* [alter the values measured to the detriment of the principal].

Respondent 11: *Additional scope* [When additional work is requested that was not in the original tender, the agent is opportunistic and charge extreme high rates, as he has an artificial monopoly because he is already on site].

Respondent 12: *Creating shorter hauling distances than the contracted distances paid for* [the distance over which material is transported is reduced below the original distances tendered on], *Higher machine utilisations and lower diesel costs*.

Question 39: Indicate what relationship specific issues exist on the Principal's side of the contract, that prevent him from changing between Suppliers.

Respondent 2: *The transfer period* [period being without a contractor, when one leaves site and the other still needs to fully establish] *can't have both agents in the same place* [at the same time]. *Translate into significant financial implications*.

Respondent 3: Not answered.

Respondent 5: *Financial – de-establishment costs and retrenchments. Pay for losses made by the contractor. Shortage of the product or the service.*

Respondent 6: *Familiarity [and relationship amongst people is lost]. De-establishment costs.*

Respondent 11: *New contractors on site – COF's [inspecting all the new agent's machines for compliance and issuing certificates of fitness (COF's) when they comply].*

Respondent 12: *The cost involved – time to do medicals [checks for medical fitness on new contractor], project deadline [being postponed].*

Question 40: Indicate what switching costs the Principal would experience when switching to a new Supplier, in the event of non-conformance by the Supplier.

Respondent 2: *Underperformance on the product. Reputational damage to detriment of the principal.*

Respondent 3: Not answered.

Respondent 5: Not answered.

Respondent 6: *Disruption in production. Performance retention and guarantees.*

Respondent 11: *Contractors pack [takes time to get new agent compliant], safety, training and induction.*

Respondent 12: *Establishment of and machines. Production losses and a delay in the project.*