Critical success factors for an outsourcing strategy in the Mpumalanga coal mining industry

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ABSTRACT

The objective of the research was to explore the reasons why some coal mining companies in South Africa fail to get the benefits of outsourcing. The research aimed to achieve this by first establishing the critical success factors for outsourcing in coal mining and then discovering how well coal mines implement these factors.

Managers from 55 coal mines were requested to rank on a Likert scale the importance of and their performance on these critical factors. The importance and performance on these factors were ranked based on the means and standard deviations of their responses.

Findings include a list of the most critical success factors for outsourcing in coal mining. It was also discovered that the amount of effort going into these factors was disproportional to the level of importance of the factors. Only in 25% of the respondents was outsourcing a success. A framework was recommended to be used by coal mines to improve their outsourcing.

DECLARATION

I declare that this research project is my own work. 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 in any other University.

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Francis Manhombo Khumalo

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LIST OF ABBREVIATIONS

DME-Department of Minerals and Energy

IEA-International Energy Association

WCI-World Coal Institute

BEE-Black Economic Empowerment

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CHAPTER 1 INTRODUCTION

1.1 BACKGROUND TO THE RESEARCH

Energy demand has grown strongly and will continue to increase, particularly in developing countries where energy is needed for economic growth and poverty alleviation. Since coal is the most widely used energy source in electricity generation accounting for 40% of world electricity and is also an essential input to most steel production, accounting for 66% of world steel production, it will play a major role in meeting future energy needs. Because coal reserves are abundant and widely distributed around the world they provide an easily accessible and affordable energy source.

Over the next 25 years global demand for coal is projected to rise by 1.4% a year. India and China are expected to account for two thirds of this increase in world coal demand. Power generation is expected to account for a bulk of this increase in demand.

Coal prices are consistently more stable than oil and gas prices, reflecting coal's widespread availability and its competitive markets. The price for coal is also generally lower than other fuels. It ranges between US$40 and US$45 a ton which is about half the price of gas and ten times less than current prices for oil (IEA, WCI).

Environmental effects of electricity production are a concern because of the dangers of global warming. The challenge is to reduce greenhouse gas and other emissions.

The South African Coal industry

South Africa's indigenous energy resource base is dominated by coal. About 77% of South Africa's primary energy needs are provided by coal. This is unlikely to change significantly in the next two decades owing to the relative lack of suitable alternatives to coal as an energy source. (DME Report-2005)

There are a number of coalfields in the country, many of which can be exploited at extremely favourable costs and, as a result, a large coal-mining industry has developed. There are the traditional Witbank, Ermelo coal fields and Highveld coalfields namely, Waterberg, Soutspanberg, Tuli, Pafuri, SpringbokFlats, Freestate and Limpopo.

The greater part of coal produced is used in the domestic economy. About 28% of production is exported, mainly through the Richards Bay coal terminal, making South Africa the fourth-largest coal exporting country in the world. The export coal is the more lucrative fetching about four times as much revenue per ton from the same input costs as does domestic coal.

The local industry is highly competitive judging from the number of operating collieries which increased to 64 during 2004. Of these, a relatively small number

of large-scale producers supply coal primarily to electricity and synthetic fuel producers.

About 51% of South African coal mining is done underground and about 49% is produced by open-cast methods. The coal-mining industry is highly concentrated with six companies accounting for 85% of saleable coal production. These companies are:

- Ingwe Collieries Limited, a BHPBilliton subsidiary;
- Anglo Coal;
- Sasol;
- Eyesizwe;
- Kumba Resources Limited;
- Xstrata Coal

Production is concentrated in large mines, with 11 mines accounting for 70% of the output. South African coal for local electricity production is among the cheapest in the world. The beneficiation of coal, particularly for export, results in more than 65Mt of coal discards being produced every year. This increases the cost per ton of the final product.

By international standards, South Africa's coal deposits are relatively shallow with thick seams, which make them easier and, usually, cheaper to mine. At the present production rate, there should be more than 50 years of coal supply left.

1.2 IMPORTANCE OF THE RESEARCH

1.2.1 Challenges facing the South African coal industry.

- The industry is fairly hierarchical in its human resource structures and thus less efficient in terms of tons produced per person than its offshore counterparts (*Mining review Africa*).

- The traditional coalfields namely Witbank, Ermelo and Highveld coalfields which are cheaper to mine and are the major suppliers of coal are now mature coalfields and are approaching depletion. It is estimated that the major collieries now operating will be worked out by 2030.

- The remaining nontraditional coalfields have coal that is either of poorer quality or appears in thinner seams that are more difficult and costly to exploit.

- The distance from Richards Bay coal terminal raises rail costs and a sustained high coal price is required to ensure economic viability.

- Environmental concerns pose the main challenge to coal as an energy source. Particulate emissions from household burning of coal and the mining activities to extract coal, impact negatively on the environment. The DME and the coal-mining industry are fostering the introduction of clean coal technologies.

- Coal remains a strategic energy source in this regard with in excess of 95% of South African electrical energy coming from Eskom coal-fired power stations. One of the aims of the South African government is to address the affordability of electricity for low-income consumers.

The future of coal therefore depends on continually searching for cheaper and more efficient ways of mining. Ways of taking a low quality resource and exploiting it in an economically viable way have to be found to achieve a sustainable future in coal mining. The DME emphasizes the need to re-evaluate the national coal resource and reserve base to assist the government in formulating an efficient energy policy with regard to future coal energy supply.

The pressures to remain competitive in export markets and to meet the demands of the government have forced coal operations to be vigilant on all expenditure. Most coal-producing operations in South Africa have undergone restructuring to remain competitive. Because restructuring usually means doing more with smaller staff there is a need to prevent companies and departments from losing core competencies and reducing production disruptions.

Outsourcing is seen as one way of ensuring that organizations or departments remain lean and contribute more value to the organization at the same time (Embleton and Wright, 1998). Linder (2004, p27) describes outsourcing as one effective way to “replace the engine in the airplane while it is in the air”.

Outsourcing has been going on in the coal industry for a number of years. It has since graduated from outsourcing of peripheral activities like cleaning, catering and security to strategic activities like drilling, maintenance, hauling and even mining. Forzando Mining, which is part of Total Exploration South Africa (TESA) has the whole extraction and the processing of its coal being done by contractors. They seem to have grasped the right way to outsource. Other companies like Ingwe are currently considering in-sourcing processes previously outsourced.

According to these writers, (Campbell, 1995; Embleton *et al*, 1998; Zhu, Hsu and Lille, 2001 and Parsa and Lankford, 1999) when used properly, outsourcing can boost performance in the following ways; cost reductions, productivity growth, profitability increase and value improvement.

1.3 RESEARCH PROBLEM AND SUB-PROBLEMS

The research explores the reasons why coal mining companies in South Africa fail to get the expected benefits of outsourcing. It goes further in recommending a model to follow to increase chances of success when outsourcing.

The research will address the following question:

- What are the critical success factors for outsourcing in the coal mining industry and how successful have coal mines been at implementing these factors?

Sub-problems are indicated by the following questions:

- What do managers perceive to be critical success factors?
- How well do coal mines perform regarding these factors?
- What is the level of success of coal mines due to outsourcing?
- What is the future of outsourcing in the coal Industry?

1.4 OUTLINE OF THE REPORT TO FOLLOW

The current chapter sets the context for the research and indicates that a need for the research exists and what the research objectives are. Chapter 2 will shed more light and provide a base for the research from relevant literature. It serves to provide a list of generic critical success factors for outsourcing. Chapter 3 will present the propositions that have been tested to provide answers to the research questions. In Chapter 4 the research methods will be described and defended. Chapter 5 presents the survey results which will be analysed and discussed in Chapter 6. Recommendations on what coal mines need to do to increase outsourcing success will be covered in Chapter 7.

CHAPTER 2 LITERATURE REVIEW

2.1 STRATEGY

2.1.1 Resource based theory

According to Davies (2000), strategy outlines how the company's goals and objectives will be achieved. He positions strategy in a triangle with resources and policy. Policy defines the goals and objectives that help develop and sustain direction. Resources are the material and methods that provide the 'with-what' means for achieving policy. Davies (2000) defines outsourcing as a resource method. Gottschalk and Solli-Sather (2005) also state that according to the resource-based theory of the firm, outsourcing is a strategic decision which can be used to fill gaps in the firm's resources and capabilities. According to this theory outsourcing on its own is not a strategy. It is an abuse of the term strategy to then use it to describe outsourcing. In 'What is strategy'(1996), Porter protests that a number of management tools and techniques, total quality management, benchmarking, time-based competition, outsourcing, partnering, re-engineering and change management have taken the place of strategy.

Outsourcing can be used to support a number of strategies, namely focus, scaling without mass, disruptive innovation and strategic repositioning.

2.1.2 Theory of core competencies

According to Leavy (2004), many companies see outsourcing as a way to hire best-in-class companies to perform routine business functions and then focus corporate resources on key activities in their value chain where the impact will be felt the most by the customer. Gottschalk and Solli-Saether (2005) instead of focus, talk of the theory of core competencies. This theory suggests that activities which are not core-competencies should be considered for outsourcing with the best-in-the-world suppliers.

2.1.3 Scaling without mass

In scaling without mass, outsourcing is said to offer companies the opportunity to grow in market presence without a corresponding expansion in organizational size or bureaucracy. Outsourcing is said to allow firms to retain their entrepreneurial speed and agility, which they would otherwise sacrifice in order to become efficient as they expand.

2.1.4 Disruptive innovation

Outsourcing is a key element in many of the most impressive examples of disruptive innovation to date (Leavy, 2004). It allows the creation of new segments at a price below current markets. These segments would run at lower costs and sell at lower prices and be able to disrupt incumbents.

2.1.5 Neoclassical economic theory

According to the neoclassical theory companies will justify their sourcing strategy based on evaluating possibilities for production cost savings. The question on whether to outsource or not is a question of whether the marketplace can produce products and services at a lower price than through internal production (Gottschalk *et al*, 2005). Low-cost leadership strategy focuses on gaining competitive advantage by having the lowest cost in the industry. In order to achieve a low cost advantage an organization must have a low cost leadership strategy. The organization must be willing to discontinue any activities in which they do not have a cost advantage and should consider outsourcing activities to other organizations with a cost advantage (Allen *et al*, 2006).

2.1.6 Vertical Integration

Historically, in the absence of developed external markets, organizations sourced a wide range of upstream and downstream activities in-house. Developments in the scope of external supply markets continue to challenge the strategy of vertical integration, allowing companies to extend the use of outside supply (Jennings, 2002).

2.2 OUTSOURCING

Franceshini, Galletto, Pignatelli and Varetto (2003) describe outsourcing as a management approach by which an organization delegates some non-core functions to specialized and efficient service providers. Outsourcing is also described as the procurement of products or services from expertise that is

external to the organization (Parsa *et al*, 1999; Embleton *et al*, 1998). Embleton *et al.* (1998) differentiated outsourcing from contacting-out. Contracting-out refers to work assigned to an outside supplier on a job-by-job basis. Outsourcing on the other hand entails a long-term relationship between supplier and beneficiary with a high degree of risk sharing. Zhu *et al.* (2001) describe outsourcing as the process of transferring responsibility for a specific business function from an employee group to a non-employee group.

Outsourcing has seen an evolution from the traditional to the strategic. It is considered traditional if a process not considered critical for the organization e.g cleaning services are outsourced (Franceschini *et al*, 2003). According to them strategic outsourcing is when companies outsource everything except those core activities in which they could achieve a unique competitive edge. Fill and Visser (2000) mention other types of outsourcing, namely capacity and non-capacity outsourcing. Capacity outsourcing refers to those activities being outsourced which are also executed by the client. Non-capacity outsourcing concerns the outsourcing of activities which are no longer pursued by the client. Other researchers refer to outsourcing as a continuum where at one extreme there is selective outsourcing and at the other is full outsourcing. Full outsourcing is when the vendor is in charge of all activities within a process.

In this research the strategic perspective of full outsourcing or non-capacity outsourcing will be considered. It is felt that the maximum benefits will be

achieved if full outsourcing is conducted as opposed to partial outsourcing. Further research is required to verify this supposition.

2.2.1 Strategic benefits of outsourcing

Despite extensive research on the benefits of outsourcing, few companies acquire the potential benefits from outsourcing (The Antidote, 1997). For example, the PA Consulting group did a research study on companies across eight countries and found that 35% had medium benefits from outsourcing. They also found out that only 5% had achieved high benefits and low drawbacks. Researchers have found that many companies are cancelling outsourcing agreements, renegotiating agreements, or hiring their own staff to provide in-house services once again (Jiang *et al,* 2005). Parsa and Lankford (1999) also state that outsourcing's target of a minimum of 15% cost saving is seldom achieved. According to Embleton and Wright (1998) a large proportion of outsourcing clients even find their costs increasing.

It is acknowledged that there is no research that has linked outsourcing with hard results. Subjective soft data such as self report data and perceptual data dominates current outsourcing research literature (Jiang *et al*, 2005). According to Pycraft, Singh and Phihlela (2004) an operation which needs to succeed in the long term has to have an operations advantage which it gains through five basic performance objectives. These five are: doing things right, which gives a **quality** advantage: doing things fast, which gives a **speed** advantage: doing things on time, which gives a **reliability** advantage: ability to change what you do as the

market demands, which gives a **flexibility** advantage: and doing things cheaply, which gives a **cost** advantage. The expected benefits of outsourcing can be classified into these five categories.

Jennings (2002) points to cost reduction, increased quality, improved flexibility, increased focus, leverage and diversification as the benefits of outsourcing. In some cases outsourcing partnerships are used to achieve rapid, sustainable improvement in enterprise level performance. In these cases outsourcing is being used to increase speed. Outsourcing is also used by organizations to remain lean while at the same time increasing in size. Outsourcing allows firms to retain their entrepreneurial speed and agility, which they would otherwise sacrifice in order to become efficient as they expanded (Leavy, 2004). Harland, Knight, Lamming and Walker (2005) summarise the benefits of outsourcing for organizations as follows;

- enable focus on core:
- cost reduction:
- increased flexibility to configure resources:
- increased ability to meet changing market needs:
- provision of benefit through economies of scale and scope:
- ability to access best in class skills and capabilities:
- freeing of constraints of in-house cultures and attitudes:
- provision of fresh ideas and objective creativity:

2.2.2 Drivers of success in outsourcing

Four general themes seem to be dominant outcomes of research on keys to successful outsourcing. These are make-or-buy analysis, selection of right vendor, vendor relationship management and stakeholder management.

2.2.2.1 Make or buy analysis

PA consulting group found out that 60% of respondents believed that they outsourced for strategic reasons. There was however a discrepancy between the senior management's acknowledgement that outsourcing is strategic and their ability to dedicate much of their attention to it. Only 12% were found to outsource for genuinely strategic reasons. They suggested that strategic sourcers are more likely to succeed in enhancing shareholder value. McIvor (2000) proposes a general guideline on the factors that should be considered in making the outsourcing decision. These are cost analysis, associated risks, supplier influences and a strategic perspective. Jennings (2002) suggests that the outsourcing decision varies between firms within industries due to differences in each organization's context. He gives the following contextual factors that have to be considered namely, capability, cost, technology, supply and product market conditions. These conditions will enable a consideration of the outsourcing decision through a focus upon its implications for competitive advantage. Fill and Visser (2000) also stress the importance of paying attention to the context within which outsourcing decisions are made. They state that decisions based on cost are insufficient as are decisions based on cost and strategy alone. They propose

a model consisting of three factors to be used in making the outsourcing decision namely:

- an analysis of contextual factors represented by an organization's particular internal and external conditions:
- the strategic and structural aspects associated with an organization's decision to reconfigure: and
- the transaction costs associated with the process or activity under review.

The outsourcing decision in summary has to consider the following factors:

- **Competitive advantage analysis**
- **Cost analysis**
- **Supply market analysis**
- **Risk analysis**
- **Cultural impact analysis**

2.2.2.1.1 Competitive advantage analysis

According to Jennings (2002) an organisation's sourcing strategy needs to reflect the organisation's own approach to developing competitive advantage and its business context. The strategy needs to be consistent with competitive conditions and the development of competitive advantage. Porter's five-force analysis needs to be employed to determine industry context. Also required under competitive advantage analysis is an analysis of the resources of a company and how these can be renewed or enhanced to enable a company to

respond to shifts in the business environment. According to the resource-based theory of the firm, outsourcing is a strategic decision (Gottschalk *et al*, 2005). The resource-based theory of the firm supposes that resources are determinants of firm performance and that resources must be rare, valuable, difficult to imitate and non-substitutable and that when this happens competitive advantage results (Collins and Montgomery, 2005). It is therefore critical to conduct a resource-based analysis of the competitive position of a firm and have outsourcing cover any gaps identified.

McIvor (2000) insists that outsourcing should be carried out from a strategic perspective and integrated into the overall strategy of the organization. Parsa and Lankford (1999) state that outsourcing works best when it is an outgrowth of re-engineering. They say that when re-engineering looks at who is best suited to performing a particular task, who can do the task with the greatest efficiency and the highest quality and decides that it is not the in-house staff, outsourcing is likely to result. Embleton *et al*. (1998) suggest that a company determine where it will get the best return on investment in outsourcing. He advises that organizations develop a clear understanding and quantification of the type and level of service that will be acceptable in the future. McIvor (2000) suggests that as part of the strategic analysis, core activities be defined based on the value chain. He defines core activities as those activities central to the company successfully serving the needs of potential customers. These are activities that are perceived by customers to add value. Campbell (2005) suggests that companies assess whether business objectives, not only cost cutting, can be

achieved through outsourcing. The goals from these objectives should be explicit. He also proposes that companies assess their readiness to undertake outsourcing.

Critical success factors for competitive advantage analysis are as follows:

- **Ensure that the company's resources and capabilities have gaps that can be filled by vendors' resources.**
- **Ensure that the client has the ability to define outsourced activity requirements and monitor their delivery.**
- **Ensure outsourcing the process/activity will not give away competitive advantage.**

2.2.2.1.2 Cost analysis

According to Embleton *et al.* (1998) a company should have a clear understanding of the type and amount of all costs associated with the function to be outsourced. Both long term and short term costs should be considered because in some cases long term costs could be higher than short term costs, thereby leading to the wrong decision. McIvor (2000) concurs but sticks to cost analysis of core activities. He adds benchmarking of these core activities and not just a comparison between what the vendor offers and what the company can do.

Franceschini and Galleto (2003) suggest that both transactional and production costs be considered in what they refer to as the internal benchmarking analysis of the process to be outsourced. Production costs are those directly linked to the

process while transactional costs include bargaining costs, monitoring costs, contractual opportunism costs, market costs and costs related to managers' negativity towards the outsourcing process. Outsourcing reduces production costs by providing scale economies. When transaction costs are high, outsourcing is deemed to be relatively inefficient compared with internal, hierarchical administration (Gottschalk and Solli-Sather, 2005).

Critical factors are:

- **Internal Benchmarking of production and transactional costs of process to be outsourced.**
- **Ensuring the vendor's production costs are less than the client's costs.**
- **Minimisation of transactional costs to a level below the client's current process administration costs.**

2.2.2.1.3 Supply market influences

Jennings (2002) emphasizes the importance of evaluating the supply market conditions. He says that even if suppliers possess greater efficiency, cost savings may not be obtainable when a few vendors dominate a specialized market. This situation is worsened if developments in the supply market lead to an increase in monopoly power. According to Porter (1980), when there are few suppliers their bargaining power increases, which can result in high costs for the outsourcing company.

2.2.2.1.4 Outsourcing Risk analysis

If the outsourcing contract is not preceded by careful strategic planning and thorough risk assessment, it may result in financial loss, decreased shareholder value, damaged company reputations or even destruction of the business (Jiang *et al*, 2005). They further state that the awareness of possible risks incurred when outsourcing, will enable decision makers and stakeholders to make informed decisions and draw up contingency and mitigation strategies. A holistic approach to outsourcing, one that evaluates both the risks and rewards, is crucial (Frost, 2000). Robust risk management processes are needed to ensure that risks are identified and addressed so that the real opportunities to increase shareholder value provided by outsourcing can be realized (Frost, 2000). According to Frost (2000) the use of outsourcing as a strategic management tool increases operational risk in a number of ways namely:

- Lack of strategic clarity before outsourcing takes place
- Big size of outsourcing transactions with success or failure making a huge difference to an organization's overall financial position
- Initial business disruption during handover of control to a third party and termination
- Service contract becoming outdated and inflexible as strategic direction of an organization changes
- Outsourcing vendor not being more efficient in running a function
- Service responsibilities of the outsourcer and retention of responsibilities by the client not being well-defined and leading to disputes

- Resistance by client's management because of fear of loss of control
- Outsourcer failing to understand adequately the client's business
- Increased risk of access to private and sensitive data
- Failure of outsourcing contracts to transfer liability to the vendor
- Risk of losing critical skills required for future expansion

For success the following risk management measures have to be taken

- **Evaluation of risks of losing critical skills**
- **Evaluation of risk of access to private and sensitive data**
- **Establishment of contingency and mitigation plans for abovementioned risks.**

2.2.2.1.5 Cultural impact analysis

Embleton *et al.* (1998) propose that a company determine whether outsourcing the service will have a negative cultural impact. Other researchers stress the need to consider cultural fit during vendor selection.

The critical success factor is to ensure that outsourcing will not have a negative cultural impact.

2.2.2.2 Vendor selection

It is essential that the right vendor or mix of vendors be chosen after the decision to outsource has been reached (Franceschini, Galleto, Pignatelli and Varetto,

2003). They emphasize that time and money has to be spent to ensure the right vendor. They further suggest that an external benchmarking of vendor be conducted. They suggest that a client decide whether to cooperate with a single vendor, multiple vendors or integrated suppliers. Embleton *et al.* (1998) emphasize the importance of similarities in culture as well as ensuring that both client and vendor move in the same strategic direction. They also emphasized the importance of determining the level of interest and capabilities of the vendors.

Campbell (1995) emphasizes the importance of ensuring that unbiased evaluations of vendors are carried out. Embleton *et al.* (1998) further stresses the importance of vendor expertise in the activity being outsourced.

Parsa *et al.* (1999) added the following factors to the planning and conduct of the acquisition process:

- Purchasing representation on the supplier selection team
- Competence factors to use in evaluating suppliers (e.g. flexibility, understanding the company's business, technology leadership). Suppliers with a good understanding and interest in outsourcing firms' business are said to be better positioned to develop mutually beneficial goals
- Bid evaluation procedures to prevent bias

Seydel (2005) suggests a multi-criteria method to bring structure to the decision process. Informal, arbitrary and unstructured methods have been used to award contracts for sole-sourcing. Because of the long term nature and strategic importance of vendor selection it is essential that this procedure be optimized and not be left to arbitrary means. He uses Deming's assertion that businesses ought to end the practice of awarding business on the basis of a price tag and rather focus on minimizing total cost to indicate the importance of considering multiple criteria in addition to initial cost in purchasing decisions.

Averages methods simply take the average of the number of scores for different criteria and the vendor with the highest average is chosen. Multi-criteria approaches on the other hand allow for the ordering of the criteria according to importance, and the assignment of appropriate weights to the criteria, reflecting the relative importance of the different criteria to each other.

Substantial differences were found between results of averaging approaches and multi-criteria techniques, showing the importance of using appropriate weights for the various criteria.

Seydel (2005) further suggests that overall costs, whether tangible or intangible, short or long term, should be reduced as a result of incorporating multiple criteria into the vendor selection decision.

Two success factors result from Seydel's (2005) report:

- Use of various criteria not just price in vendor evaluations
- Use of systematic multi-criteria analysis techniques and not averaging methods to rank the vendors

A different dimension in vendor selection is offered by Dogan and Sahin (2003). They propose activity-based costing in evaluating vendors. They argue that with changes in environmental conditions affecting a company the performance of each vendor according to the criteria must also change with time. Other models assume that the vendor with the best combination at the beginning of the contract will remain the best throughout the term, which is not always true.

Dogan *et al.* (2003) suggest that vendor selection be performed by choosing the supplier who minimizes the present total additional costs associated with the purchase decision.

Seydel (2005) suggests that the criteria be consistent with what he calls the ‘five rights’ of purchasing. These are the right price, right place, right timing, right quality and the right quantity. He proposes additional criteria, namely vendor’s responsiveness, supplier’s technology and level of innovation, vendor’s operational compatibility with the client, vendor’s strategic fit with client, the importance of the client to the vendor and the extent to which the vendor is globalised.

In summary, critical factors to be considered in vendor selection are as follows;

- **Selecting a single vendor to manage the process**
- **Benchmarking of vendor capabilities to ensure technical excellence**
- **External benchmarking of vendor's production costs**
- **Ensuring cultural fit between vendor and client**
- **Ensuring compatibility between vendor and client operations**.
- **Assessment of geographical position of vendor(Local presence)**
- **Ensuring strategic-direction fit between vendor and client**
- **Evaluating vendors by weighting and not averaging various criteria.**
- **Ensuring that the vendor has good understanding of the client's business**
- **Ensuring that the vendor has access to a broad base of experienced and skilled personnel**

2.2.2.3 Vendor relationship management

Outsourcing is said to be an emotional decision, especially for the first time outsourcer, and the success and longevity of an outsourcing arrangement depend greatly on the success of the vendor/client relationship (Webb and Laborde, 2005). Parsa *et al.* (1999) came up with vendor-selection criteria that emphasize, among other things, the need to ensure cultural fit between outsourcer and outsourcee. Parsa *et al.* (1999) propose regular reviews coupled

with close monitoring in managing the contract. They also advocate the involvement of senior management in relationship management.

Parsa *et al.* (1999) offer the following advice on relationship management:

- Match the specific needs of the organization with the supplier's capabilities so as to develop a contract around a shared vision.
- Involve a cross-functional team to assess the company's needs.
- Involve same cross-functional team in managing the contract.
- Evaluate supplier performance on twin dimensions of technical and functional quality.
- A modular, all inclusive contract, focusing on a specific operation is better than a turnkey contract, only focusing on a specific function.

Zhu, Hsu and Lille (2001) suggest the following additional attributes:

- Establishment of measurable goals and objectives
- Ensuring both parties benefit from the relationship
- Maintaining mutual respect and willingness to learn from each other
- Involvement of senior management support
- Continual tracking and measurement

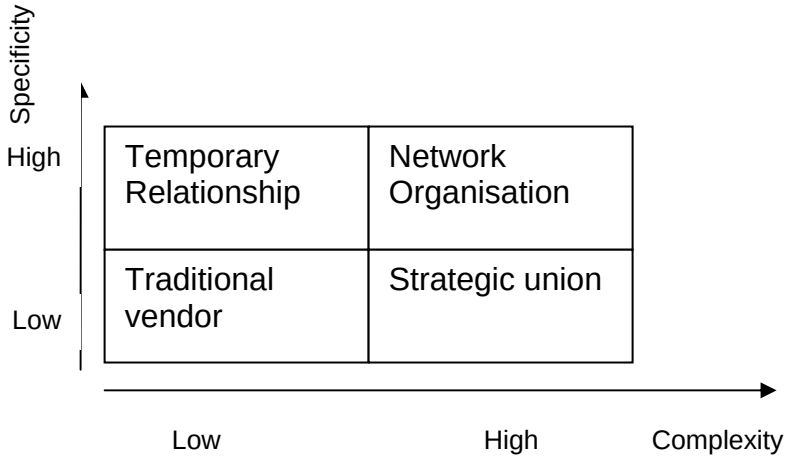
Parsa *et al.* (1999) stress the following:

- A precisely defined scope of work, detailing the nature and extent of collaboration between buyer and supplier.

- Safeguards for performance and cost control.
- Methods and procedures for measuring supplier performance.

McIvor (2000) proposes relationship analysis in the outsourcing decision whereas other researchers stress it under the relationship or contract management theme. Franceschini *et al.* (2003) propose that an organization evaluate the type of relationship it requires based on two main characteristics i.e specificity and complexity of the process to be outsourced. Specificity refers to the level of re-utilization of the considered process for many different uses while complexity refers to the difficulty of monitoring and defining contract terms and conditions of the outsourcing process. A combination of these two characteristics gives rise to four possible types of relationships namely traditional vendor, temporary relationship, strategic union and network organization.

Figure 2.1: Scheme of the four types of outsourced-outsourcer relationships based on different levels of complexity and specificity.



Source:Franceschini *et al.* (2003)

Critical success factors for relationship management are as follows;

- **Establishment of a comprehensive all-inclusive contract**
- **Establishment of measurable goals and objectives**
- **Ensure easiness to monitor vendor performance**
- **Use outcome-based and behaviour-based incentives to prevent opportunistic vendor behaviour**
- **Continual tracking and measurement**
- **Involvement of senior management support**
- **Ensuring a strategic or partnership relationship**

2.2.2.4 Stakeholder management

In addition to ensuring that external processes run smoothly management must address the issue of staff reduction and corporate structure; failure to do so may well negate the value of the whole exercise (Embleton *et al*, 1998). No outsourcing effort can be successful without the full support of affected employees (Zhu *et al*, 2001). According to Embleton *et al.* (1998) providing counseling and outplacement services is an essential component of a successful outsourcing process. They further emphasize the following:

- Management to help those employees having to be laid off by providing them with placement services
- Modification of policies and procedures to ensure surviving employees remain productive

- Development of a policy on how to communicate the outsourcing process during and after the process
- Management must revisit goals, roles, expectations and priorities to prevent wrong behaviors by remaining employees as they attempt to survive
- Gottschalk *et al.* (2005) say that an organization must create efficient and effective communication with and between stakeholders to secure continued support from all stakeholders. They further state that the outsourcing process must balance the interests of all stakeholders so that all stakeholders achieve their goals.

Other general problems thought to be associated with outsourcing in the South African context seem to be mostly related to labor relations. Jordaan (2004) cites labor relations and a number of other potential downsides of most outsourcing in South Africa. These downsides are:

- Failure to contract reputable service providers with a proven track record of compliance and good human resources management
- Dismissal of staff leading to chronic unemployment problem
- Creation of uneasiness and uncertainty among those who remain, in turn causing loss of talented staff
- Onerous provisions of section 197 of the Labor Relations Act
- Failure of enterprises created to outsource non-core functions leading to staff carrying their unhappiness onto the client's premises

- Friction between clients employees and those of the service provider

Another article (www.iol.co.za, 2005) explains why laws have been put in place to prevent labor abuse. Some employers are said to outsource the labor intensive and/or unionized areas of their operations to relieve an operation of the burden of having to manage its industrial relations problems. Unions and employees are said to have become suspicious of outsourcing as it normally means employees becoming redundant.

Coal mining companies have unions who monitor the welfare of employees. Furthermore all the companies are bound by the Labour Relations Act. Failure to abide by this Act during outsourcing might nullify the expected results of outsourcing.

Critical factors are:

- **Continual communication during and after the outsourcing process**
- **Ensuring compliance to the Labour Relations Act during the outsourcing process**
- **Providing counseling to affected employees**
- **Providing performance incentives to remaining employees**

2.2.2.5 Post outsourcing review

An outsourcing effort is not complete until a post-outsourcing review is conducted (Zhu *et al*, 2001). They suggest that the review focus on the accomplishments of the outsourcing process. The review should be conducted to determine if the process is working as planned and to identify areas of improvements or changes.

CHAPTER 3 RESEARCH PROPOSITIONS

3.1 Introduction

There are mixed feelings by managers towards the success of outsourcing in coal mining. Theory however suggests that outsourcing does lead to success in operations.

It is felt that the path to implementing outsourcing will depend on the views of the different managers in coal mining. The factors most likely to lead to this success can be found by testing the validity of some propositions related to the success of outsourcing. These propositions are mentioned below.

3.2 Proposition 1

Managers regard core-competence management, strategic vendor relationship, and communication with affected personnel as the critical success factors.

3.3 Proposition 2

Coal mines perform excellently at vendor selection and poorly at addressing the welfare of employees affected by outsourcing.

3.4 Proposition 3

Outsourcing has a less than 20% success rate in coal mines.

3.5 Proposition 4

There is a negative view towards the future of outsourcing in coal mining.

CHAPTER 4 RESEARCH METHODOLOGY

4.1 RESEARCH APPROACH

According to Welman and Kruger (2001), survey research only deals with the examination of relationships between one or two variables without any planned intervention. The purpose of the research was to identify the critical issues for outsourcing without determining causality between these issues and outsourcing success. A field survey was conducted on coal-mining companies' managers to get their assessment (based on experience) of issues known to be critical to outsourcing. This research approach acknowledges that managers' observations might have been due to other factors as well as outsourcing. It was not the purpose of this research to isolate the pure effects of outsourcing. There was not adequate time to intervene and carry out experimental research. The research also assumes that once the critical factors are applied well then outsourcing works well for coal mining. This might not happen. In addition it does not factor the effects of other programs that companies might be running to improve their operations.

4.2 UNIT OF ANALYSIS

The unit of analysis consisted of heads of departments and, in some cases, the mine managers of the various mines. These were expected to have had a broad experience with outsourcing so as to be able to answer questions that ranged from strategy to operational themes pertaining to outsourcing. These heads of

departments were from various disciplines ranging from human resources to production.

4.3 POPULATION OF RELEVANCE

Since the research was exploratory it was important to include a broad range of organizations in the sample to improve the possible generalization of the findings and reduce the likelihood of company-specific performance effects. All coal mining organisations in South Africa namely Ingwe, Anglocoal, Eyesizwe, Xstrata, were considered. The majority of coal mining head offices and operations belonging to these organizations are located in Mpumalanga. A list of coal mines in Mpumalanga was obtained from the Department of Minerals and Energy. All mine managers and heads of departments of these mines that could be identified and/or accessed were used as the population.

There are 71 registered mining operations in Mpumalanga according to the Department of Minerals and Energy's 2006 list. Some of the operations were managed centrally and this reduced the size of the population of managers significantly. This centralisation combined with low access in some cases resulted in a population of 55 managers.

4.4 SAMPLING METHOD AND SIZE OF SAMPLE

The incidental sampling method was used. According to Welman and Kruger (2005) incidental sampling is the most convenient collection of members of the

population that are near and readily available for research purposes. The total number of managers who could be identified became the sample. These totalled 55. The names of the heads of departments could not be obtained easily since in most cases the general managers wanted to control the process and chose who they wanted to complete the questionnaire. In some cases the managers were never available to give names. There was high dependence on the general managers to increase the number of respondents. There was also a great dependence on networks to identify the heads of departments of the mines. A structured sampling process was therefore not possible. Other managers declined to have a questionnaire completed on their operations even though anonymity was promised.

A sample of 55 managers was considered for the survey but the final sample size consisted of 33 managers. This was a response rate of 60%. This way be lower if the total number of managers in Mpumalanga coal mining is considered. This number was expected to be about 300, which gives a response rate of 11%.

It is felt that even though this is an incidental sample, it represents outsourcing practices for all coal mining companies in the country. All mining organizations were represented at high hierarchical levels. For inclusion in the final study it was determined that a respondent must have worked closely with at least one contract to have adequate knowledge to respond accurately. All 33 respondents had at least two contracts' experience to their name.

4.5 METHOD OF SOURCING DATA

Data collection was done through a close-ended questionnaire. Both survey methods of using either questionnaires or interviews were considered. It was felt that questionnaires would provide the better survey method. It was also felt at the time that even though interviews would give more flexibility, enable open-ended questions to be asked and thus lead to better judgment of responses (Trochim, 2006), they would be more expensive and more time consuming. It was also felt that a questionnaire would allow the managers time to formulate answers at their own convenience without feeling pressurized.

A questionnaire was developed to identify from a number of best practices those issues managers felt were critical to the success of outsourcing. The questionnaire included a cover page explaining the purpose of the survey and asked respondents to select a number of contracts they have been closely associated with as references while answering the survey questions.

The questionnaire was divided into five sections. The first section required respondents to provide personal information which included their job title, function they managed, their organization, and the type and quantity of contracts with which they were associated. The quantity of contracts was required to gauge their level of experience. Job titles were requested to gauge respondents' level of involvement in the management of outsourcing. The types of contracts were

requested to assist in investigating whether there was any relationship between the value chain activity and outsourcing requirements.

The second section applied a 5-point Likert scale to rate from 1(totally unimportant) to 5(extremely important) the importance of 33 factors known to be critical to outsourcing. The factors were defined in simple terms to ensure ease of understanding. Respondents were also requested to add any factors they believed were important.

The third section of the questionnaire also asked respondents to rate how well they implemented the critical factors. A Likert scale from 1(very poor) to 5(excellent) was applied.

The fourth section of the questionnaire requested respondents to rate the effect of outsourcing on their companies' performance (presently and 5 years into the future) over the five dimensions of quality, flexibility, cost, speed and reliability. They were also requested to indicate what they felt the overall contribution of outsourcing was to company success. A Likert scale from 1 (extremely negative) to 5 (very positive) was applied in both cases.

Sections 2 and 3 of the questionnaire were combined to reduce the bulkiness of the document. It was felt that a long questionnaire might discourage potential respondents from completing it.

A pilot test of the questionnaire was carried out before the questionnaire was dispatched. A work colleague assisted with the test. The questionnaire was confirmed to be user friendly and easily understood.

The questionnaire was dispatched to all potential respondents through email, after the majority of respondents had been contacted by telephone. The survey questions were distributed together with a covering letter explaining the purpose of the research and requesting that responses be returned through email. It was felt that the email system would make it easy for the respondents to send back responses.

Respondents were given four weeks to complete the survey and in order to increase the response rate the potential respondents were reminded by telephone as well as by email every Friday during the four weeks.

4.6 ANALYSIS APPROACH

Critical factors for coal mining are those factors that are considered most important and whose level of application/performance has had a positive correlation with overall company performance.

The basic analysis involved the use of means and standard deviations to determine the top ten factors from the ratings by the respondents. Those factors with the highest means on importance ratings were considered to be the most

critical ones to coal mining. Those factors with the same means were ranked based on their standard deviations. Those with lower standard deviations were placed ahead of the ranks.

Performance ratings below 3 were considered low and those at 4 and above were considered high. A high performance was taken to imply that a high effort was applied into implementing that factor and that the task was well done.

Gaps between those regarded as being most critical and the performance thereof were calculated. Factors with huge gaps between importance and performance constituted areas for future improvement.

Ordinal data from the Likert scale was considered to be interval data for the purpose of this analysis and means and standard deviations were calculated without applying a conversion factor. From the open-ended responses, themes and frequencies were drawn up. There were not many new themes raised by the respondents. These themes could also not be tested across the sample. The criticality of the themes could be tested in future research.

On analyzing the success of outsourcing, if the level of impact was 4 and above, then outsourcing was considered to be a success on that performance dimension.

4.7 VALIDITY

The construct validity of the Likert scores is quite high. It is felt that the questionnaire measured the intended constructs and not other irrelevant constructs. Other constructs that might pose a threat in this survey are the respondents' level of understanding of the issues, and the socially desirable responses. It was felt that respondents might provide responses they believed would produce a good impression. The possibility of this happening was however reduced by promising the respondents that their responses would not be published and that there would be no way of tracking down how a particular person had responded.

Another threat to construct validity came from measurement reactivity. Welman *et al.* (2005) stated that participants' awareness that they are completing a questionnaire might affect their responses to it. The fact that both importance and performance measures represent respondents' perceptions, which are subjective, represents a threat to the construct validity of the measures. There is a chance of respondents distorting their responses to create some desired impression.

Criterion related validity was also under threat. According to Welman *et al.* (2005) criterion related validity refers to the degree to which diagnostic and selection tests correctly predict the relevant criterion. There was a chance of the number of constructs of outsourcing success not being wide enough to be representative of

success. To prevent this, a number of critical factors from various researchers, which form a representative sample of outsourcing success were compiled.

4.8 RELIABILITY

According to Welman *et al.*(2005) reliability measures the consistency of rankings irrespective of when the questionnaire was applied, which form of it was used and by whom it was administered. The threat to the reliability of the ratings was reduced by ensuring that the instructions were unambiguous and very simple. There was therefore no chance that the responses would differ on a different occasion. There remained, however, a threat of unreliability due to inconsistent behaviour on the part of the respondents. Some respondents could by their nature be too strict and others too lenient. This threat was reduced by averaging the scores from various respondents.

4.9 LIMITATIONS OF THE RESEARCH

The limitations of the research were as follows:

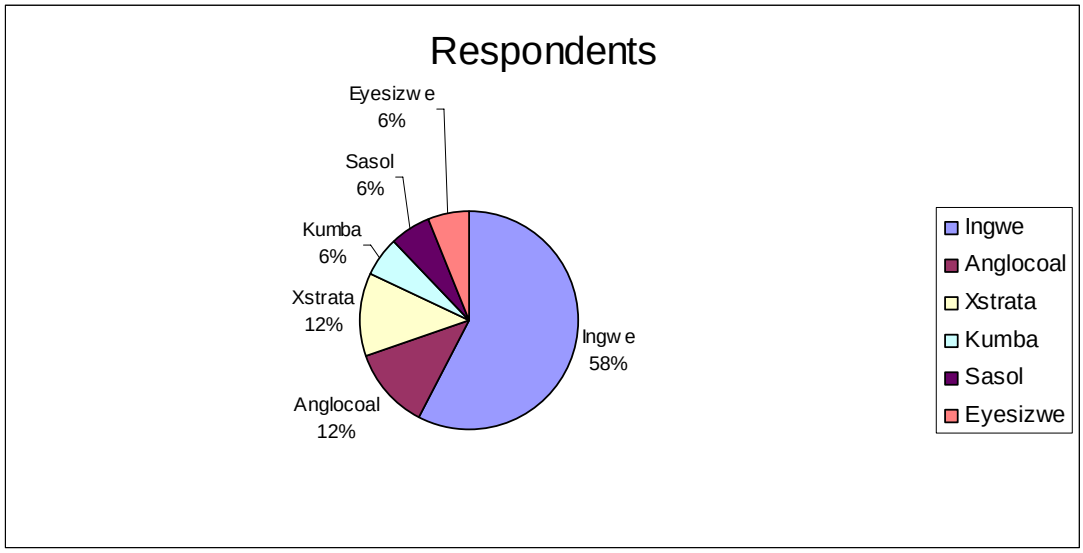
- Observations from incidental sampling are not always typical of the relevant population. Conclusions might have to be treated as hypotheses that need to be examined deductively (Welman *et al,* 2005).
- There was a skewness of the sample towards Ingwe. The findings are therefore more likely to be influenced by the Ingwe way of doing things.
- The calculation of means from unconverted Likert scale ordinal data might not give a true reflection of general perceptions.

- There was not enough time to collect a bigger sample. A bigger sample would have been more representative of the population.

CHAPTER 5 RESULTS

5.1 SAMPLE DISTRIBUTION

Figure 5.1: Percentage representation of the big coal mining organizations in the sample



5.2 IMPORTANCE OF AND PERFORMANCE ON CRITICAL SUCCESS FACTORS

Table 5.1: Percentage split of responses to importance of and performance on critical success factors.

	Factor	No of responses	Importance					Performance				
			1	2	3	4	5	1	2	3	4	5
1	**Ensuring that the process/activity can be outsourced without giving away competitive advantage.**	33	3%	12%	12%	27%	45%	3%	9%	45%	39%	3%
2	**Ensure that the client has the ability to define outsourced process**	33	3%	0%	3%	27%	67%	3%	12%	42%	21%	21%

	requirements and monitor their delivery.											
3	**Ensure that the company's resources and capabilities have gaps that can be filled by outsourcing the process.**	33	0%	6%	15%	48%	30%	0%	9%	48%	30%	12%
4	**Internal benchmarking of production and transactional costs of process to be outsourced.**	33	3%	12%	24%	18%	42%	3%	18%	48%	18%	12%
5	**Ensuring the vendor's production costs are less than the client's costs.**	33	3%	0%	18%	36%	42%	3%	9%	36%	36%	15%
6	**Ensuring that the process transactional (writing, monitoring and enforcing the contract) costs are less than current process-management costs.**	33	3%	0%	21%	45%	30%	3%	21%	33%	30%	12%
7	**Evaluation of risks of losing critical skills**	33	0%	3%	9%	45%	42%	6%	21%	33%	21%	18%
8	**Evaluation of risk of access to private and sensitive data**	33	0%	6%	27%	39%	27%	0%	6%	55%	27%	12%
9	**Establishment**	33	0%	3%	12%	39%	45%	6%	21%	30%	24%	18%

	of contingency and mitigation plans for the risks.											
10	**Ensure that outsourcing will not have a negative cultural impact.**	33	0%	3%	18%	48%	30%	3%	24%	30%	30%	12%
11	**Selecting a single vendor to manage the process**	33	0%	18%	48%	18%	15%	3%	9%	33%	39%	15%
12	**Benchmarking of vendor capabilities to ensure technical excellence.**	33	0%	0%	6%	33%	61%	9%	21%	21%	24%	24%
13	**External benchmarking of vendor's production costs**	33	0%	0%	24%	67%	9%	6%	30%	27%	24%	12%
14	**Ensuring cultural fit between vendor and client**	33	0%	0%	15%	45%	39%	6%	24%	18%	36%	15%
15	**Considering vendor's local presence**.	33	0%	6%	21%	39%	33%	0%	12%	36%	39%	12%
16	**Ensuring strategic-direction fit between vendor and client**	32	0%	3%	13%	41%	44%	0%	9%	56%	13%	22%
17	**Evaluating vendors by weighting and not averaging various criteria.**	32	3%	6%	22%	50%	19%	0%	13%	44%	31%	13%

18	**Ensuring that the vendor has good understanding of the firms business.**	33	0%	6%	3%	45%	45%	0%	24%	21%	42%	12%
19	**Ensuring that the vendor has access to a broad base of experienced and skilled personnel**	33	0%	0%	15%	39%	45%	3%	18%	36%	21%	21%
20	**Ensuring compatibility between vendor and client operations.**	33	0%	3%	24%	48%	24%	0%	12%	36%	30%	21%
21	**Establishment of a comprehensive all-inclusive contract.**	33	0%	0%	18%	42%	39%	0%	18%	48%	18%	15%
22	**Providing a flexible contract that is open to changing market conditions and technologies.**	33	0%	9%	30%	39%	21%	0%	24%	33%	30%	12%
23	**Establishment of measurable goals and objectives.**	33	0%	0%	3%	9%	88%	3%	21%	30%	12%	33%
24	**Instituting penalties for failure to deliver on the part of the vendor if the goals of the outsourcing exercise are not met.**	33	0%	6%	12%	36%	45%	9%	21%	30%	12%	27%

25	**Ensure ease of monitoring vendor performance**	33	0%	0%	6%	45%	48%	3%	9%	39%	30%	18%
26	**Continual tracking and measurement of performance**	33	0%	0%	3%	39%	58%	3%	9%	39%	27%	21%
27	**Use of outcome-based incentives to reduce opportunistic vendor behaviour.**	33	0%	0%	21%	45%	33%	0%	27%	33%	27%	12%
28	**Involvement of senior management in review meetings.**	33	0%	0%	18%	39%	42%	3%	12%	48%	21%	15%
29	**Ensuring a strategic or partnership relationship**	33	0%	3%	18%	39%	39%	0%	18%	39%	24%	18%
30	**Continual communication during and after the outsourcing process**	33	0%	0%	15%	45%	39%	3%	12%	39%	18%	27%
31	**Ensure compliance to Labour Relations Act during the outsourcing process**	33	0%	6%	0%	42%	52%	0%	6%	30%	36%	27%
32	**Providing counseling to affected employees**	32	0%	9%	22%	41%	28%	3%	13%	53%	22%	9%
33	**Providing performance incentives to remaining employees.**	32	3%	9%	34%	34%	19%	3%	35%	32%	19%	10%

	Any other factors?:Please specify											

5.2.1 Additional factors

Table 5.2: Frequency of additional themes raised by respondents

Factor	Frequency
Ensure training to develop the vendors	1
Put quality control measures	1
Give safety incentives to vendor	1
Ensure vendor safety records are good	1
Ensure there is BEE and women in vendor	1
Proper contract proposals-use of professional bodies	1
Do not hire unknowns	1
Do not hire the cheapest vendor	1
Ensure a Long-term contract	1
Add flexibility to vendor	1
Use vendors capital on short term	1

5.2.2 Means of the responses

Figure 5.2: Importance of make-or-buy-decision constructs

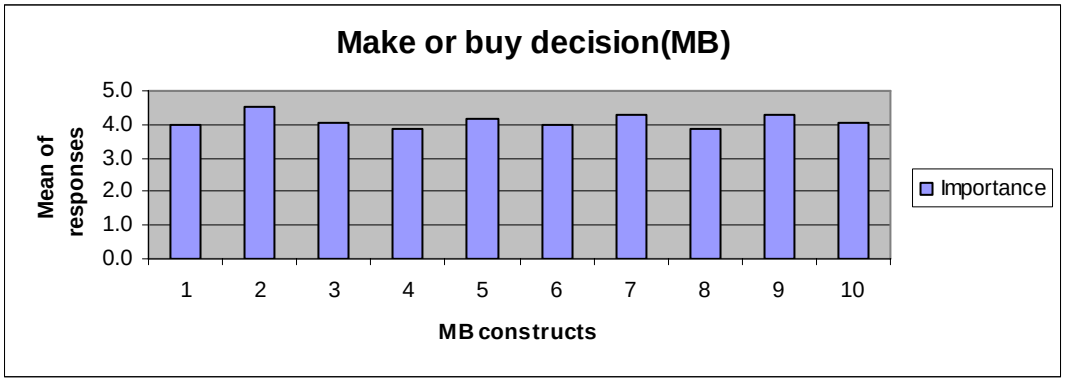


Figure 5.3: Importance of vendor selection constructs

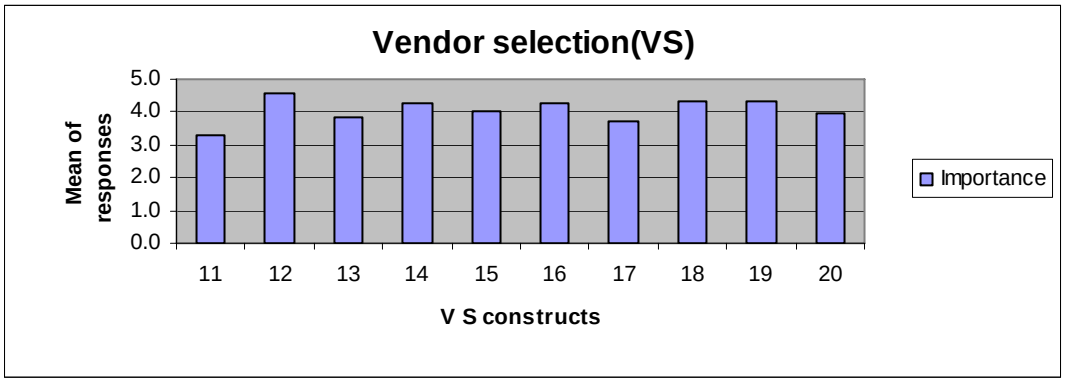


Figure 5.4: Importance of relationship management constructs

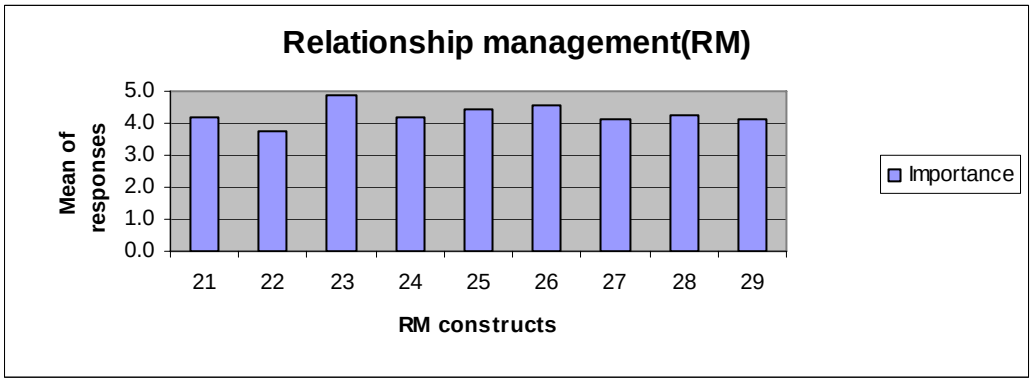


Figure 5.5: Importance of Stakeholder management constructs

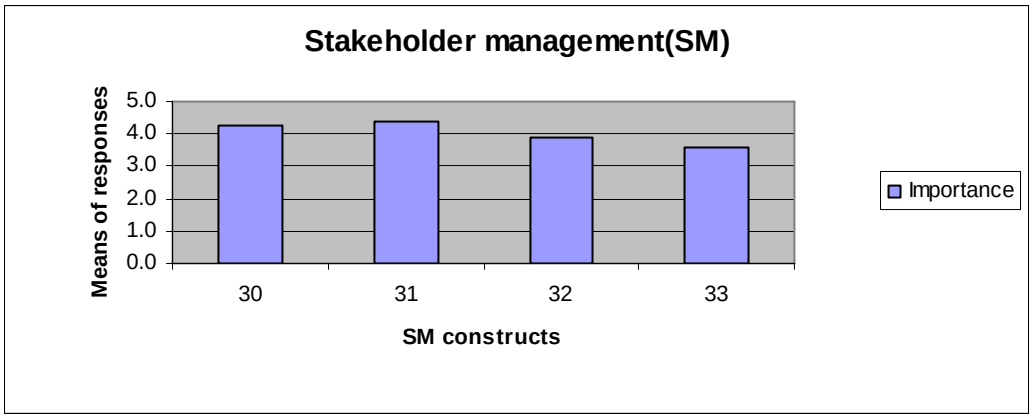


Figure 5.6: Performance on make or buy decision constructs

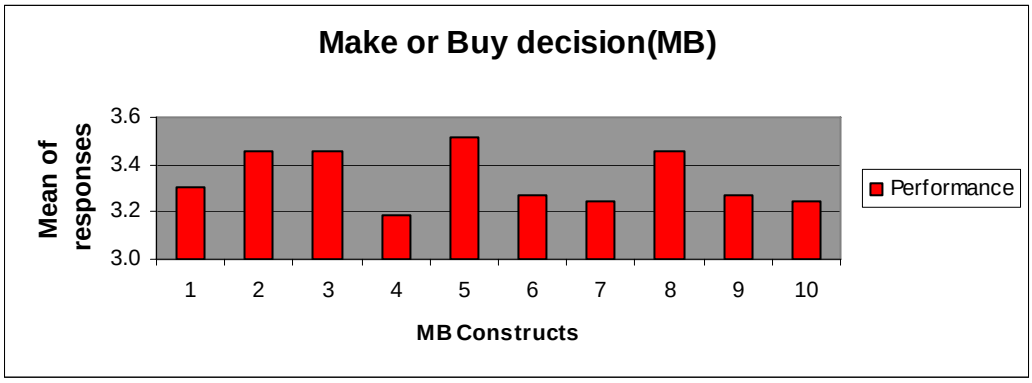


Figure 5.7: Performance on vendor selection constructs

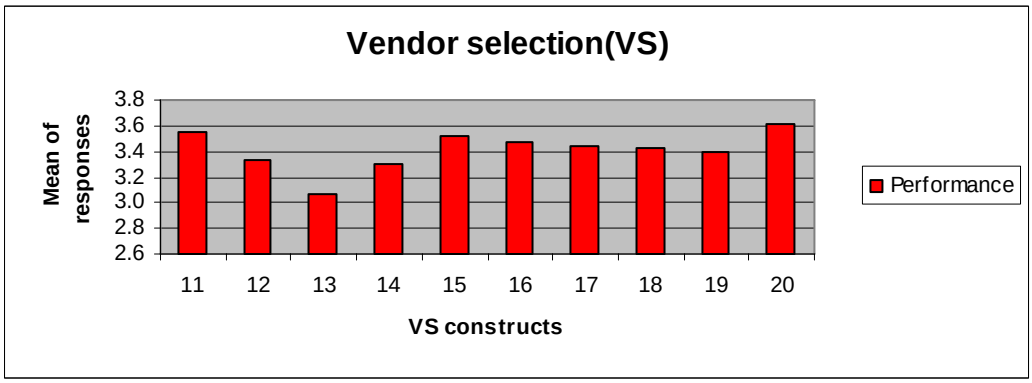


Figure 5.8: Performance on relationship management constructs

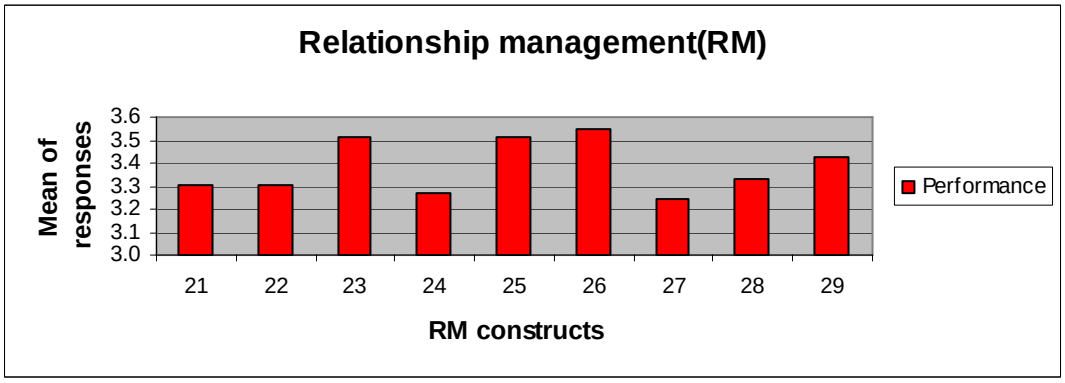
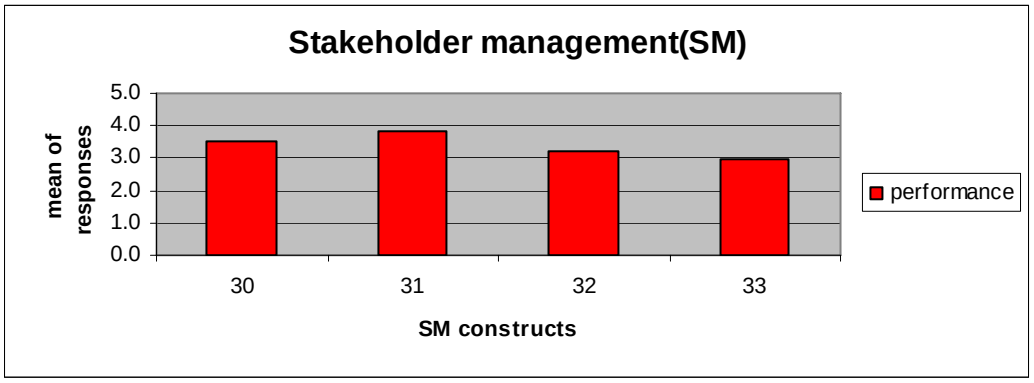


Figure 5.9: Performance on stakeholder management constructs



5.3 SUCCESS AND PROSPECTS OF OUTSOURCING

The results of the survey on the current level of success of outsourcing as well as its future prospects are indicated in the table below.

Table 5.3: Percentage split of responses on outsourcing success

Performance measure	No of responses	Present					5 yrs from now				
		1	2	3	4	5	1	2	3	4	5
Quality	28	4%	14%	50%	29%	4%	4%	4%	29%	54%	11%
Flexibility	27	4%	19%	19%	48%	11%	0%	11%	22%	37%	30%
Speed	28	7%	4%	39%	39%	11%	0%	0%	36%	32%	32%
Cost	28	7%	32%	29%	29%	4%	4%	21%	36%	32%	7%
Reliability	28	4%	21%	43%	29%	4%	0%	4%	32%	46%	18%
Overall contribution to company success	28	4%	11%	61%	21%	4%	0%	11%	29%	46%	14%

Figure 5.10: Current impact of outsourcing on coal mining

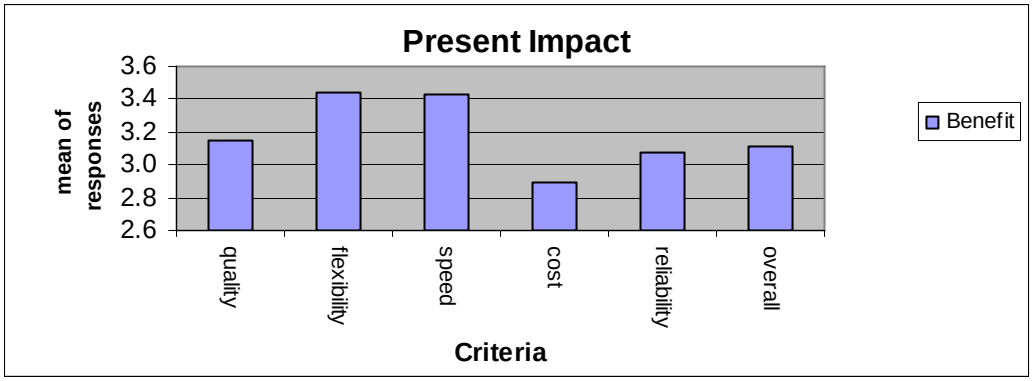


Figure 5.11: Future prospects of outsourcing in coal mining**.**

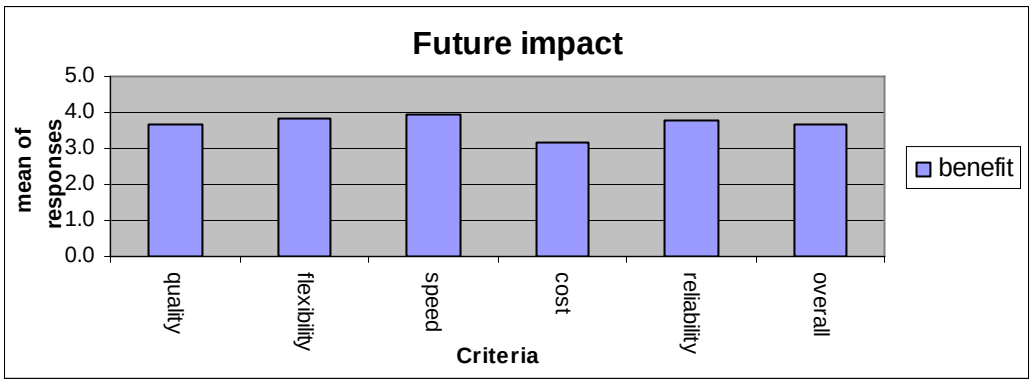


Figure 5.12: Rank order of critical success factors showing the top ten most important factors

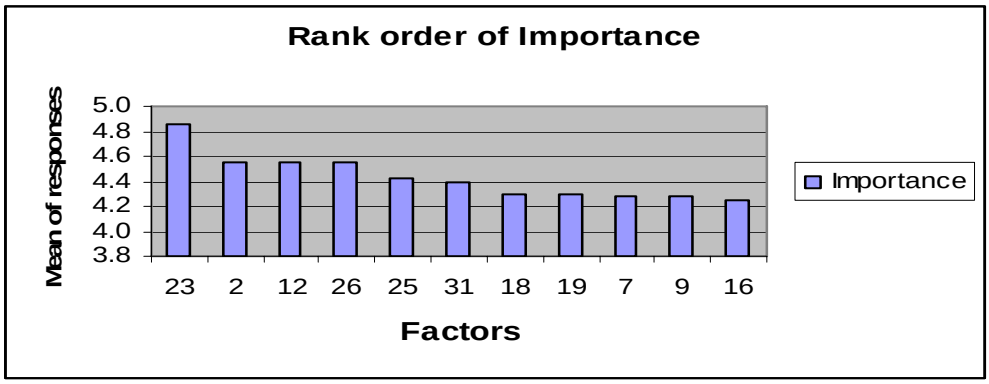


Figure 5.13: Gap between importance of and performance on make-or-buy decision constructs

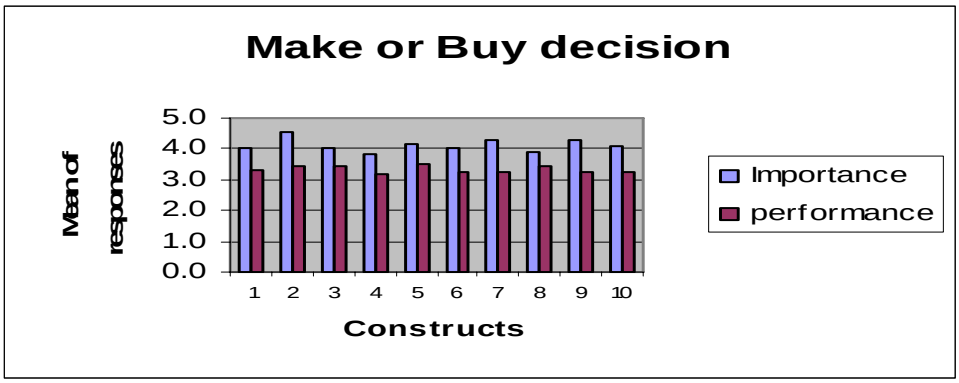


Figure 5.14: Gap between importance of and performance on vendor selection constructs

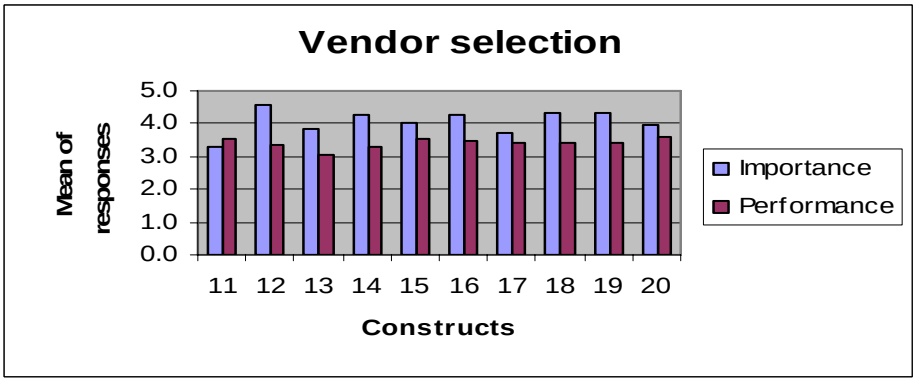


Figure 5.15: Gap between importance of and performance on relationship management constructs

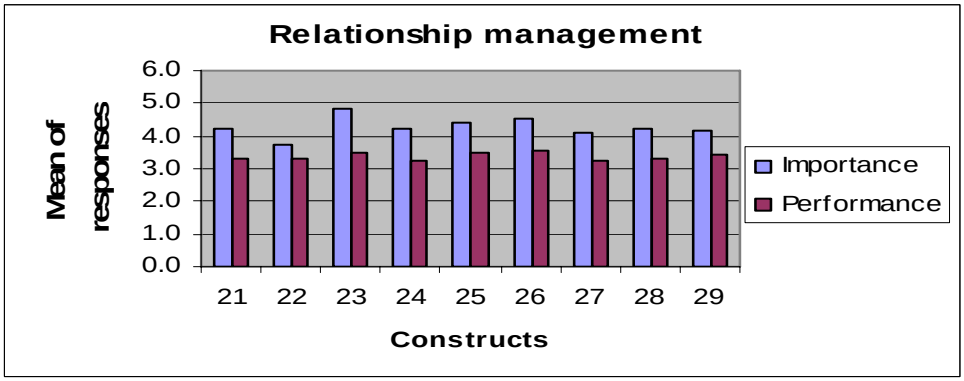


Figure 5.16: Gap between importance of and performance on stakeholder management constructs

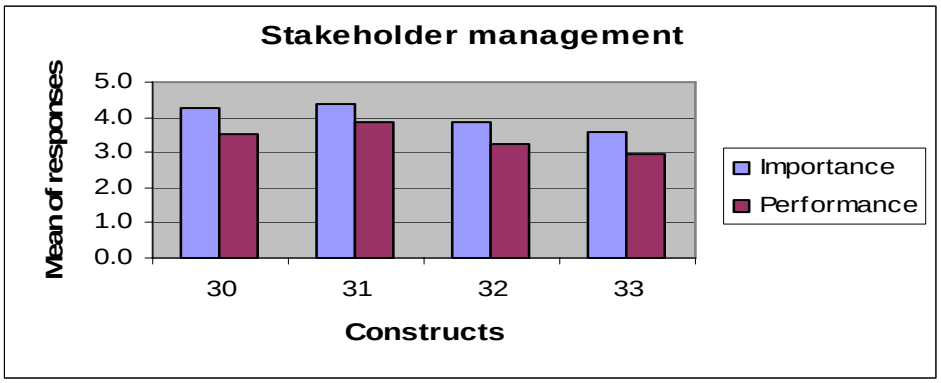
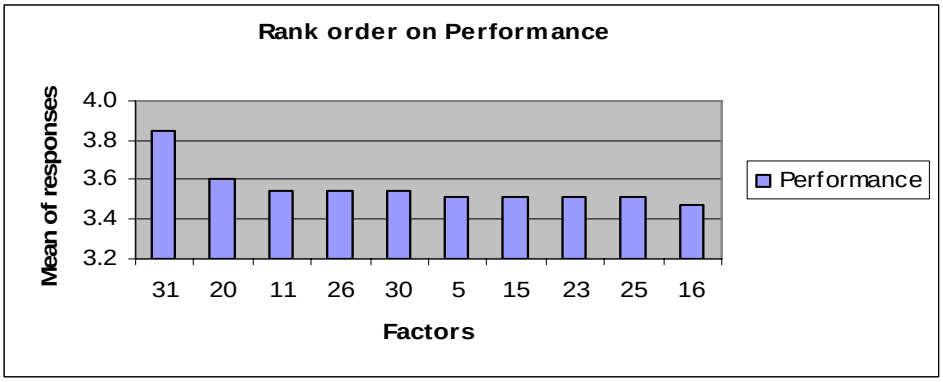


Figure 5.17: Rank order of performance on all factors showing where the most effort was spent.



CHAPTER 6 DISCUSSION OF RESULTS

6.1 SUMMARY OF FINDINGS

Table 6.1: Summary of importance ranking

Rank	Critical success factor	Score	Stdev	Theory
1	Establishment of measurable goals and objectives	4.85	0.44	Relationship management
2	Continual tracking and measurement of performance	4.55	0.56	Relationship management
3	Benchmarking of vendor capabilities	4.55	0.62	Resource-based theory
4	Ability to define and monitor delivery of outsourced process	4.55	0.83	Core competency
5	Ensure ease of monitoring vendor performance	4.42	0.61	Relationship Management-Agency theory
6	Compliance with Labour Relations Act	4.39	0.79	Stakeholder Management
7	Vendors access to a broad base of experienced and skilled workers	4.30	0.73	Resource-based theory
8	Vendors understanding of client's business	4.30	0.81	Vendor selection.
9	Risk of losing critical skills	4.27	0.76	Risk management
10	Contingency and mitigation plans	4.27	0.80	Risk management

Table 6.2: Summary of best performed factors

The standard deviations of the scores have been included to show that factors with low standard deviations have been placed above those with high standard deviations whenever the means are the same.

Rank	Factor	Score	Stdev	Theory
1	Compliance with Labour Relations Act	3.85	0.91	Stakeholder management
2	Compatibility between vendor and clients operations	3.61	0.97	Vendor selection-Resource based theory

3	Selection of single vendor	3.55	0.97	Vendor selection
4	Continual tracking and measurement of performance	3.55	1.03	Relationship management
5	Continual communication with stakeholders	3.55	1.12	Stakeholder management
6	Considering local vendors	3.52	0.87	Vendor selection
7	Ensuring vendors production costs are less than clients	3.52	0.97	Vendor selection-neoclassical theory
8	Ensure ease of monitoring vendor performance	3.52	1.00	Relationship management
9	Establish measurable goals and objectives	3.52	1.25	Relationship management
10	Ensure strategic fit between vendor and client	3.47	0.95	Vendor selection-Resource based theory

6.2 RESEARCH PROPOSITION 1-IMPORTANCE

Proposition 1 states that managers regard core competence management, strategic vendor relationship, and communication with affected personnel as the critical success factors.

Core competence management revealed mixed feelings. The practice of deciding which processes to outsource based on whether or not they are core, was not regarded as highly important. This practice failed to make it into the top ten important factors. 45% of respondents felt it was extremely important while 15% felt it was not that important. This could stem from the fact that some operations even outsource all traditional core mining activities like drilling, blasting and even

processing the ore. According to Gottschalk *et al*, (2005) core equals key or critical or fundamental. They also say that 'core' delivers competitive advantage. These mining activities mentioned above have since become commodities and hence the low importance rating on the need to decide which processes to outsource based on whether they are core or not.

However the theory of core competencies still seems to apply. The new competence seems to be the ability to define mining activity requirements and to monitor their delivery by vendors. The ability to manage vendors featured as the fourth most important driver of outsourcing. Sixty-seven per cent of responses rated the need to ensure that the client has the ability to define outsourced process requirements and monitor their delivery, as extremely important to the success of outsourcing. This confirms Gottschalk *et al.* (2005) finding that the core competence necessary to succeed in an outsourcing arrangement, where most processes have become commodities, is the ability to define and manage services from the vendor.

Strategic relationship between vendor and client is regarded as important but it is however not one of the critical success factors, as it failed to make it onto the top ten list. Coal mining sits in between the traditional vendor relationship (Franceschini *et al,* 2003) where the activity to be outsourced can be clearly defined and the contract terms and conditions are simple, and the strategic relationship. This is suggested by the high importance placed on both ensuring

strategic relationship between vendor and client and the need to ensure that the vendor can be easily monitored. Seventy-eight per cent of respondents regard very highly the importance of ensuring a strategic or partnership relationship. Only one respondent felt strongly against a strategic relationship. Ninety-three per cent of respondents rated the importance of ease of monitoring vendors very highly. It is therefore evident that coal mining favours the temporary relationship which is a mixture of customer/supplier relationship and a strategic union.

The importance of continual communication with stakeholders was rated highly by most respondents but it was also not one of the top ten critical success factors. Eighty-four per cent of respondents rated the importance of continual communication during and after the outsourcing process somewhere between very high and extremely high. Thirty-nine per cent of respondents felt it was extremely important.

The most critical success factor as shown in Figure 5.12 was the establishment of measurable goals and objectives for the vendor. There was strong agreement among the respondents over its importance and 88% of the respondents felt the establishment of goals and objectives was extremely important to outsourcing success. The level of agreement was so high that all respondents rated this factor higher than average. In total 97% of respondents rated the importance to be between very important and extremely important. It appears like coal mining's focus is on monitoring and control. The emphasis on control is substantiated by

the importance placed on continual tracking and measurement of performance. This factor was second in importance. Fifty-eight per cent of respondents rated the importance of the factor to be extremely important. In total 97% of respondents rated the importance between very important and extremely important. No respondents rated this factor below average. Even if traditional core activities get outsourced it follows that the focus should be on controlling the vendors managing those activities. Coal mining managers also want it to be easy to monitor this performance. This is indicated by the importance placed on ensuring ease of monitoring vendor performance. This factor was overall fifth in importance.

The benchmarking of vendor capabilities to ensure technical excellence is deemed to be just as important as continual tracking and measurement of performance and 94% of respondents rated the importance between very highly important and extremely important. Sixty-one per cent felt this factor was extremely important. This resonates well with Franceschini *et al.* (2003) model for management of outsourcing processes, which stresses the importance of external benchmarking. These researchers consider external benchmarking as the tool to monitor service levels offered by the vendor. This supports the 'monitoring and control' focus that seems to be a predominant feature of coal mining outsourcing.

The importance of labour law in the coal mining industry was highlighted by the high rating given to ensuring compliance to the Labour Relations Act during the outsourcing process. It was rated as one of the most critical success factors behind ensuring ease of monitoring vendor performance. Only 2 respondents felt it was not important compared to 94% who felt this factor was very important while 52% rated it extremely important.

The shortage of skills in the coal mining industry was highlighted by the importance placed on ensuring that the vendor has access to a broad base of experienced and skilled personnel. This factor was the seventh most important factor and 84% of respondents rated it between very important and extremely important. This factor was followed in importance by the vendors understanding of the clients' business. It follows that the client should require vendors with specific experience and skills relevant to the clients business. The importance placed on vendors' understanding of clients business is consistent with findings by Parsa *et al.* (1999) and Embleton *et al.* (1998). They found that suppliers with a good understanding and interest in outsourcing firm's business are better positioned to develop mutually beneficial goals.

Risk management followed vendor's competence in importance. The assessment of outsourcing risks together with the establishment of mitigation plans for those risks were considered very important and 87% felt it was critical to evaluate the risks of losing critical skills before outsourcing. Forty-two per cent of these felt it

was extremely important to evaluate this risk. Franceschini *et al.* (2003) confirm that if outsourcing is improperly used it might lead to companies losing their skills and knowledge, which are difficult to recover. Eighty-four per cent of respondents placed high importance on the establishment of necessary mitigation plans for these risks. It is common knowledge that the mining industry is faced with a skills shortage crisis. This finding seems to be consistent with the industry's fear of losing skills through outsourcing.

Cost reduction did not feature as one of the most critical success factors for outsourcing in coal. This seems to contradict Franceschini *et al.* (2003) and their assertion that cost efficiency is one of the most important drivers for outsourcing choices. Cost efficiency is not one of the most important considerations in coal mining. One respondent felt cost is totally unimportant while 78% rated cost's importance between very important and extremely important.

The least important factors were the selection of a single vendor to manage the outsourced process and providing incentives to remaining employees.

It has been shown that core competency management is one of the critical success factors. It's important to note though that 'core' no longer rests on the mining processes but on the way these processes are managed. It has also been shown that a vendor relationship between a vendor and a client is important but

not critical. Communication with affected employees is also considered important but not critical to outsourcing success. Proposition 1 is thus partially supported.

6.3 RESEARCH PROPOSITION 2-PERFORMANCE

Proposition 2 states that coal mines perform excellently at vendor selection and poorly at addressing the welfare of employees affected by outsourcing. Figures 5.13, 5.14, 5.15, 5.16 indicate that the general performance of respondents on all the critical success factors was just above average; a mean of 3 is average performance. There were no major performance differences among the factors. It suggests that the managers were not sure which areas to focus on.

Under vendor selection the most effort was applied on ensuring compatibility between vendor and client operations: 51% of respondents rated their performance between very good and excellent: 21% rated themselves excellent. Overall it was a good performance.

Performance on the other vendor selection factors was just above average as shown in figure 5.6. Overall the performance on vendor selection is good. There are no constructs of vendor selection whose performance was below average.

Featuring in the top ten performances are the selection of a single vendor, ensuring vendor's local presence and ensuring strategic fit between vendor and client. The majority of respondents (54%) ensured in most cases that they

selected a single vendor while 12% performed poorly on this factor. On ensuring vendor's local presence 41% of respondents performed well. The majority of respondents felt their performance on ensuring strategic fit with the vendor was average while 35% felt it was above average. The general performance is thus slightly above average.

With regard to taking care of employees affected by outsourcing, mines' performance was slightly above average. The majority of respondents (53%) had average performances on providing counselling to employees affected by outsourcing. There was an almost 52/48 split between those who performed above average and those below average. Only 9% performed excellently in this regard. On providing performance incentives to remaining employees the majority of respondents (70%) either did not provide any incentives or provided minimal incentives. The overall performance of the mines was slightly below average. Even though the mines failed to provide incentives, they did ensure a high compliance with the Labour Relations Act. The majority of the respondents, 63%, ensured high compliance. This suggests that it is fear of the law rather than a willingness to care for affected employees that drive mines in this regard. The majority of respondents, 45%, also did well on ensuring continual communication during and after the outsourcing process. It appears then that the affected employees were not neglected even though they might not have been given incentives.

Overall, mines put the least effort into providing performance incentives to remaining employees. This could be because this factor was also considered to be one of the least important with a mean of 3.4 as shown in figure 5.5.

Factors that received the greatest attention were the continual tracking and measurement of performance, cost reduction, ease of monitoring of vendor and the establishment of measurable goals and objectives. Performance on continual tracking and measurement of performance was third in overall performance ranking. This is one factor the importance of which closely equates to the effort put into it: 48% of respondents performed well in this regard while 21% feel they do an excellent job in this area.

Ease of monitoring vendor performance and the establishment of measurable goals and objectives received almost similar levels of attention. They were ranked 8th and 9th respectively.

More effort was put into cost reduction than was put into monitoring actions mentioned above. Performance on ensuring that vendor's production costs are less than the client's costs was 7th in the performance rank. The majority of respondents, 51%, put a high effort into this measure while 12% did not put much effort into this factor.

These findings clearly refute the proposition. It is clear that there is just an above average performance on vendor selection and the same level of performance in addressing the welfare of employees affected by outsourcing. Coal mines perform better at addressing the welfare of employees affected by outsourcing than is expected. They also perform worse at vendor selection than is expected of them.

6.4 RESEARCH PROPOSITION 3-OUTSOURCING SUCCESS

According to Proposition 3, outsourcing has a less than 20% success rate in coal mines. According to table 5.3, outsourcing was a success for 25% of the respondents. This finding supports Zineldin and Bredenlow (2003) who projected the failure rate of outsourcing to be as high as 70 percent. Sixty-one per cent felt outsourcing did not change the outsourced processes while 14% felt it negatively affected the performance of the outsourced processes. In this research the failure is above 70%.

Outsourcing had the most positive effect on flexibility of delivering the outsourced services to the company. The majority of respondents (59%) felt the flexibility of their operations improved due to outsourcing.

Speed was also increased due to outsourcing: 50% felt speed of service delivery improved while 9% believed they were slowed down by outsourcing.

The cost of running the services increased after the services were outsourced: 39% of respondents found that outsourcing increased their cost compared with 33% who believed their costs were reduced. This finding supports Jiang *et al.* (2005) and Parsa *et al.* (1999) who found that outsourcing's target of a minimum of 15% cost saving is seldom achieved. The findings of Embleton *et al.* (1998) namely that a large proportion of outsourcing clients even find their costs increasing is also supported.

Overall outsourcing had a positive impact on performance with flexibility receiving the most positive impact and cost being negatively impacted. These findings partially support the proposition. The difference between 25% and 20% of the respondents is just one respondent and that is considered negligible. So it can be considered true that the success rate of outsourcing in coal mining is less than 20%.

6.5 RESEARCH PROPOSITION 4 - PROSPECTS FOR OUTSOURCING

Research proposition 4 states that there is a negative view towards the future of outsourcing in coal mining. Figure 5.11 shows that, overall, outsourcing will have a positive impact on companies' performance. Sixty per cent of respondents have a positive future view of outsourcing compared with 11% who feel otherwise.

The highest impact will be on speed with the least being on cost. There is significant agreement among the respondents on outsourcing's impact on speed. Sixty-four per cent of respondents felt that the effect will be higher than average. All respondents expect the impact to be either average or above average. Even though expectations for costs remain the lowest of all performance objectives they are however positive. This suggests that coal managers expect to improve on cost management in the future.

The proposition is not supported by the findings. There is a clear indication of a bright future for outsourcing in coal mining. Managers seem to believe in the benefits of outsourcing and acknowledge their shortcomings in their implementation thereof.

6.6 CONCLUSION

It can be seen from tables 6.1 and 6.2 as well as figures 5.13, 5.14, 5.15 and 5.16 that management's efforts in managing outsourcing are being applied to areas of low importance. There are no significant differences in the amount of effort applied to factors of significantly differing importance. The establishment of measurable goals and objectives as the most important factor is supposed to be performed close to excellently, yet it is only 9th in performance ratings. The tracking and measuring of performance which is second in importance receives a high proportion of managers' attention. It is fourth in the performance ratings.

The benchmarking of vendor capabilities to ensure technical excellence is third in importance but receives minimal attention from managers. It does not even feature in the top ten best performed factors. It is also interesting to note that there is more effort placed on selecting a single vendor than the selection of a single vendor is worth.

Managers have high future expectations for cost efficiency due to outsourcing and yet they do not view the importance of measures to ensure that vendors have lower costs than theirs. This suggests that managers do not seem to see cost efficiency coming from ensuring that vendors' input costs are less than theirs, but more from improved monitoring of vendor performance and from improvements in other performance dimensions.

These findings seem to suggest that the low impact of outsourcing stems from lack of knowledge of the critical factors and the failure of companies to focus on these areas.

In general mines put a lot of effort where it's not really needed. They put the same level of effort into all areas. It suggests that they are not aware of areas that give them the most benefit. Applying the same level of effort in most areas does not seem to be helping, judging by the mediocre benefits that were achieved from outsourcing.

CHAPTER 7 CONCLUSION

7.1 HIGHLIGHTS/SUMMARY OF RESULTS

The question that this research aimed to address was the question of how to successfully manage outsourcing in coal mining. To address this question critical success factors had to be identified. It also had to be investigated as to how various operations performed these factors.

From literature critical success factors for outsourcing were developed. These were empirically tested in various coal mining operations' outsourcing relationships. A list of factors, critical to the success of an outsourcing strategy in coal mining, was identified.

The study indicated that there is a need to focus on relationship management, specifically the monitoring and control of vendor's activities. This is confirmed by the slightly better performance on these factors than others. Other most critical factors are the benchmarking of vendor capabilities, ensuring internal ability to manage the outsourced process, compliance with the Labour Relations Act, vendor's access to a broad base of skills, vendors understanding of the clients business and the risk of losing critical skills. Surprisingly, cost reduction by ensuring that the vendors costs are less than the client's costs, was not regarded as critical. It could be that the managers fear compromising quality for cost. The majority of the other important factors did not receive much attention. In general the attention given all factors critical or trivial was found to be average. It was

further found that outsourcing success rate is 25% for coal mines. It was also discovered that even though the success rate is so low managers still see a bright future for outsourcing.

7.2 MEETING OF RESEARCH OBJECTIVES

The objective of the research was to explore the reasons why some coal mining companies in South Africa fail to get the benefits of outsourcing. The research aimed to achieve this by firstly finding the critical success factors for outsourcing in coal mining and then researching how well coal mines implement these factors. The research also had to establish whether outsourcing was a failure or a success in coal mining and also whether management felt it had a chance in the future.

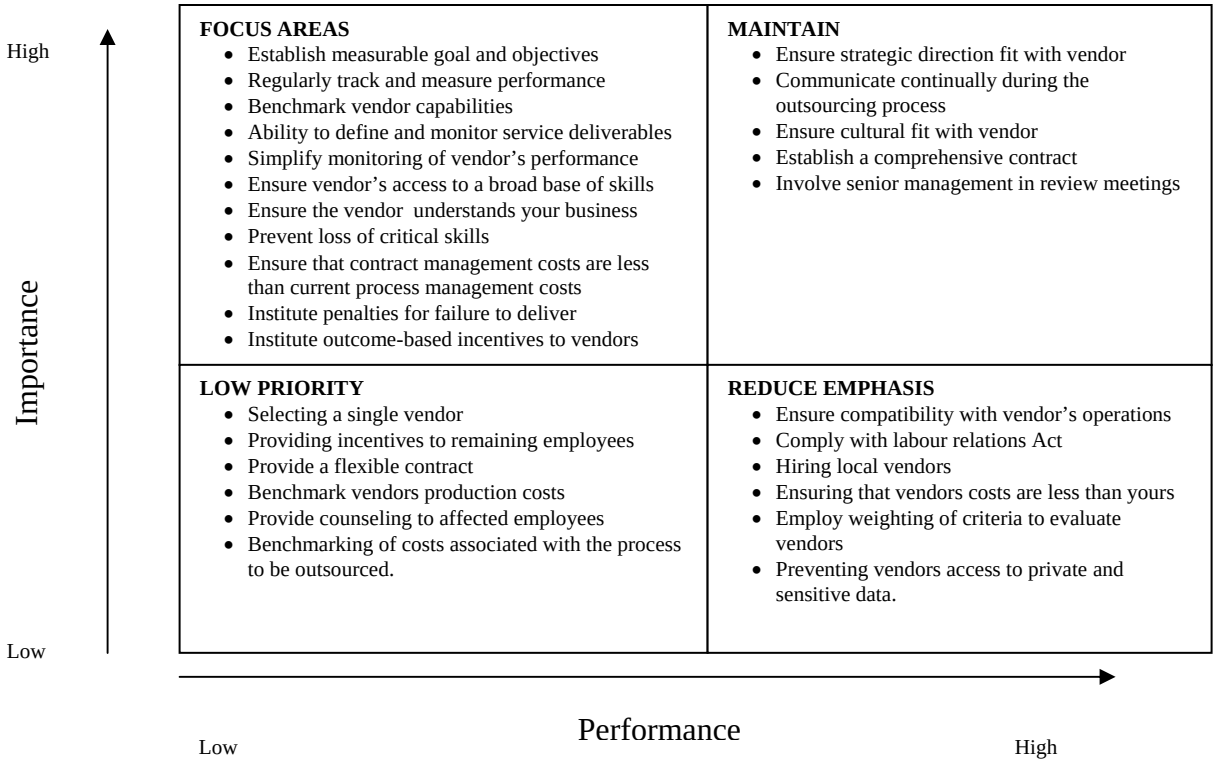
It is felt that the research has managed to achieve all its objectives. It is now known what the critical factors are. Judging from the failure rate and the low level of focus on critical areas it can be deduced that proper implementation of the identified critical factors should lead to success.

7.3 RECOMMENDATIONS TO MANAGEMENT

It is clear from the results that companies are not putting the right amount of effort into the areas that matter to outsourcing success. It is argued that a holistic approach is required to manage outsourcing. The fact that a number of critical success factors have been identified does not mean that other factors cease to

matter. What it means is that if an operation is not doing well in these areas then their outsourcing would most definitely fail.

Based on the findings the model below is recommended for use in improving outsourcing in coal mining.



This model places all mining operations' outsourcing under one umbrella. It is generalizing the coal mining industry's outsourcing shortcomings and strengths based on findings. Some operations might be able to identify very closely with the model and some not. The top left and right bottom quadrants represent those factors coal mines currently need to work on to improve their outsourcing. Most effort should go into the top left hand factors to move them to the top right

quadrant. The items in the top right quadrant do not all signify the critical success factors. Mines that are performing well in those factors should just maintain their current efforts.

Different operations will need to look at the factors in the four quadrants. If they are putting too much emphasis on low importance factors then they need to redirect that effort to factors in the top two quadrants.

7.4 RECOMMENDATIONS FOR FUTURE RESEARCH

This research has a few shortcomings that can be addressed in future research. Future research should compare successful and unsuccessful outsourcing attempts to determine what those successful companies did differently from unsuccessful ones. Those differences will then constitute critical success factors. The research should then go further to determine how much each of those factors contributes to outsourcing success. This will help coal managers to determine how much effort they should apply to the focus areas. This research reveals what activities need to be carried out but it does not indicate the level of detail required.

Further research should also explain how different contexts like age of the organization or type of service influence the success factors.

No effort has been put into analyzing the interrelationship between the different critical factors and the relative effect, both in individual practices and their

interaction, have on the success of outsourcing. It has not been established whether or not the critical factors reinforce each other.

This research also tested a list of predefined practices and cannot exclude the possibility that there are other practices that can lead to success. The extra factors brought up by a few of the respondents could not be tested throughout the sample to determine their unbiased importance.

7.5 CONCLUSION

The value of this research was in showing that there are shortcomings in the way outsourcing is currently managed in coal mining. It has recommended a way to better manage outsourcing, which is easy to follow.

It is hoped that coal mining companies will use the results of this research for future outsourcing ventures. It is also hoped that the sustainability of coal mining will be improved by the implementation of these research recommendations. This will then ensure cheaper coal for Eskom power plants, which means cheaper and affordable power to the poor people in South Africa.

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APPENDICES

APPENDIX A-COVERING EMAIL TO RESPONDENTS

Miro

Please assist me with my research. I need a questionnaire to be filled by mid September to complete my research on Critical success factors for outsourcing in coal mining. The research is part of the GIBS MBA program.

Please spare 20 minutes of your time to complete the attached questionnaire and email it back to francis.khumalo@bhpbilliton.com at Middleburg Mines. Survey results will be forwarded to all respondents.

Your assistance is truly appreciated.

Francis M Khumalo.

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UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

APPENDIX B-QUESTIONAIRE

GORDON INSTITUTE
OF BUSINESS SCIENCE
University of Pretoria

June
2006

To whom it may concern:

This serves to confirm that Francis Khumalo is a registered MBA student at the Gordon Institute of Business Science. The MBA students are currently conducting their integrative Business Research Project which is a compulsory module in order for them to complete the GIBS MBA degree.

Could you please assist him in gaining information for his research. Your assistance in this regard will be highly appreciated.

Yours Sincerely

Shireen Chengadu
Director: MBA Programme
Tel: +27 (0) 11 771 4135.

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YUNIBESITHI YA PRETORIA

OUTSOURCING-CRITICAL SUCCESS FACTORS.

Outsourcing in theory is supposed to lead to successful transformation of businesses. The success of outsourcing has not been that forthcoming for a number of operations for various reasons. There are therefore mixed feelings as to whether outsourcing really benefits organizations. This research attempts to find those factors that coal mining operations need to consider to ensure a higher success of outsourcing.

This survey is being conducted to fulfill requirements of GIBS MBA 2005/6. It should however also assist coal mining companies in identifying focus areas to get outsourcing to work.

You have been selected because of your experience and knowledge of managing outsourcing to assist in this survey. Please complete the attached questionnaire and email back to me mid September 2006. My address is Francis.khumalo@bhpbilliton.com.

Your assistance would be highly appreciated. Anonymity is guaranteed.

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

CRITICAL OUTSOURCING SUCCESS FACTORS

SECTION 1

Please reflect on coal-mining outsourcing contracts with which you have been closely associated and answer the questions below with regard to these contracts.

Name e.g J. Smith

Job title

Discipline: eg IT, Production or Maintenance

Organisation eg Middelburg Mine

Contact telephone number

Type of contracts eg Maintenance

Number of contracts

SECTION 2

Using a scale of 1-5 please indicate from your coal-mining outsourcing experience, the **importance** of the following determinants to the success of outsourcing. Also rate your **performance i**n applying the following factors to manage your outsourcing strategy.

Indicate your preference with a 'X' in the boxes below. There are no wrong answers.

Possible responses for **importance** rating are from;

1-Totally unimportant
to,
5 Extremely important

Possible responses for **performance** are from;

1-Very Poor
to,
5-Excellent

	Factor	**Importance**					**Performance**				
		1	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**
1	**Ensuring that the process/activity can be outsourced without giving away competitive advantage.**										
2	**Ensure that the client has the ability to define outsourced process requirements and monitor their delivery.**										
3	**Ensure that the company's resources and capabilities have gaps that can be filled by outsourcing the process.**										
4	**Internal benchmarking of production and transactional costs of process to be outsourced.**										
5	**Ensuring the vendor's production costs are less than the client's costs.**										
6	**Ensuring that the process transactional (writing, monitoring and enforcing the contract) costs are less than current process- management costs.**										
7	**Evaluation of risks of losing critical skills**										
8	**Evaluation of risk of access to private and sensitive data**										
9	**Establishment of contingency and mitigation plans for the risks.**										
10	**Ensure that outsourcing will not have a negative cultural impact.**										

11	**Selecting a single vendor to manage the process**										
12	**Benchmarking of vendor capabilities to ensure technical excellence.**										
13	**External benchmarking of vendor's production costs**										
14	**Ensuring cultural fit between vendor and client**										
15	**Considering vendor's local presence**.										
16	**Ensuring strategic-direction fit between vendor and client**										
17	**Evaluating vendors by weighting and not averaging various criteria.**										
18	**Ensuring that the vendor has good understanding of the firms business.**										
19	**Ensuring that the vendor has access to a broad base of experienced and skilled personnel**										
20	**Ensuring compatibility between vendor and client operations.**										
21	**Establishment of a comprehensive all-inclusive contract.**										
22	**Providing a flexible contract that is open to changing market conditions and technologies.**										
23	**Establishment of measurable goals and objectives.**										
24	**Instituting penalties for failure to deliver on the part of the vendor if the goals of the outsourcing exercise are not met.**										
25	**Ensure ease of monitoring vendor performance**										
26	**Continual tracking and measurement of performance**										
27	**Use of outcome-based incentives to reduce opportunistic vendor behaviour.**										
28	**Involvement of senior management in review meetings.**										

29	**Ensuring a strategic or partnership relationship**										
30	**Continual communication during and after the outsourcing process**										
31	**Ensure compliance to Labour Relations Act during the outsourcing process**										
32	**Providing counseling to affected employees**										
33	**Providing performance incentives to remaining employees.**										
	Any other factors?:Please specify										

SECTION 3

In terms of the five performance dimensions of quality, flexibility, speed, cost and reliability and overall contribution, please rate the effect outsourcing has had on the company's performance. Also rate the likely future effect of outsourcing on your company. Indicate your preference with an 'X'.

Use the following scale from:

1-Extremely Negative
to
5-Very Positive

Performance measure	**Present**					**5 yrs from now**				
	1	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**
Quality										
Flexibility										
Speed										
Cost										
Reliability										
Overall contribution to company success										

APPENDIX C-LIST OF RESPONDENTS

N Erasmus	Maintenance Engineer-Middleburg
BM Ernst	Maintenance Manager-Douglas
T Ferguson	Ingwe Engineering Manager Services-Ingwe
E Geary	Financial Manager-Middleburg
N Von Ronge	Ingwe Engineering Manager Services-Ingwe
FW Knox	General Manager-Douglas
T Debruin	Mine Manager-Douglas
I Thomson	Business Planning Manager-Douglas
DC Ritchie	General Manager-Isibonelo
SK Ambrosio	Divisional Occupational Hygienist-Tweefontein
P Chetty	Operations Manager-Tweefontein
C Erasmus	Compliance Manager-Tweefontein
Steve Bowden	HR and Organisational Development Manager-Optimum
D lotter	Maintenance Manager-Khutala
L Killian	Manager Engineering-Matla
S Boodhra	Plant Superintendent-Kleinkopje
T Rogans	Technical Services Manager-Kleinkopje
R Power	Maintenance Manager
JH Viljoen	Maintenance Engineer Draglines-Middleburg
J Page	Group manager Engineering & Maintenance-Ingwe
R Alberts	General Manager-Tweefontein Complex
C Reynecke	HR Manager-Douglas
MW von Wielligh	Resident engineer-Leewpan
H.Steynberg	Procurement & supply

	Manager-Sasol
C. van der Walt	Manager Strategic Sourcing-Sasol Mining
JJIS van der Merwe	HSE Manager-Khutala
KB Mattison	Act Assistant Manager-Kriel
L van Tonder	Process Manager-Douglas
G Amos	Mine Manager-Arnot Colliery
A. Mgadzah	General Manager HSEC-Ingwe
C. Fambisayi	BEE Supply Leader-BHP
Werner Spies	Manager Mining-Kumba Resources
A Bullock	Integrated Business Manager-Middleburg