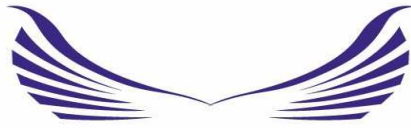




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Impact and Management of Project Stakeholders in the Chemical Sector

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

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Abstract

This research investigated the impact and management of external project stakeholders in the Chemical sector located in the geographic region of Sasolburg (Free State province of South Africa). Within a context where the relationship between a project and its stakeholders is central to project success, and where stakeholder management is currently marginalised and suppressed, this research aimed to distinguish between which external project stakeholders are more important than others; understand which stakeholders posed a higher risk; and which dimensions required the most development to improve project stakeholder management.

The research methodology was approached from a philosophical stance corresponding to a positivism paradigm and utilised deductive reasoning. The research strategy was survey based with a cross-sectional time horizon while the data collection method used non-probability sampling, specifically the snowball sampling technique, and employed questionnaires as a means to elicit the required data for analysis.

This research found that the most important external stakeholder groups, and who caused the most problems and uncertainty for the project, were contractors/suppliers; clients; and end users. Due to their high levels of involvement and criticality of roles during the project lifecycle these stakeholders should be the focal point of stakeholder management initiatives. The dimensions of stakeholder management requiring the most development was strategy and plans; evaluations; and tools and methods indicating a need for a tactical approach to stakeholder management.



Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Masters 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. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

Anban Moodley

Date



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1. INTRODUCTION TO RESEARCH PROBLEM

1.1 Research title

The research is titled “Impact and Management of Project Stakeholders in the Chemical Sector.”

1.2 Research problem

A large number of capital intensive projects are currently being embarked on and it is of critical importance that these projects are implemented successfully to enable consumption of the derived socio-economic benefits. Faced with an increasingly competitive business environment businesses require radical interventions that ensure projects deliver upon their stated objectives (Arto and Wikstrom, 2005; Business Day, 2008).

The economic objective of the Accelerated and Shared Growth Initiative for South Africa (South African government information, 2006) is to increase the annual gross domestic product (GDP) growth rate to an average of 5% from 2004 to 2014. One of the mechanisms by which these future growth ambitions will be realised is through the implementation of capital intensive projects in both the private and public sectors.

Central to the success of these projects is the relationship between a project and the management of its stakeholders (Jergeas, Williamson, Skulmoski and Thomas, 2000). With a plethora of local projects currently being implemented across a number of industries, identifying stakeholders

and understanding the role that they play strongly determines the success of the project through its lifecycle. Bourne and Walker (2005) state that without attending to the needs and expectations of a diverse range of project stakeholders, a project will probably not be regarded as successful even if the project manager was able to stay within the original time, budget and scope.

The traditional focus of project managers has been to meet the “iron triangle” of schedule, cost, and quality management resulting in a restrained focus on managing relationships with stakeholders. With mounting pressure to complete projects within and/or ahead of schedule, whilst controlling cost and maintaining quality, these “hard” deliverables detract from the “softer” issues of relationship management. Consequently, stakeholder management is marginalised and suppressed (Bourne and Walker, 2005). Further, the varying number of stakeholders that are typically involved in a large project serves to compound the situation by diluting the focus of any relationships. The marginalisation and resulting lack of focus on project stakeholders can be alleviated by:-

- Distinguishing between which stakeholders are more important than others and hence being able to prioritise and focus relations accordingly
- Understanding which stakeholders pose a higher risk owing to the uncertainty and problems that they can impose onto the project, and

- Placing more emphasis on project stakeholder management by focusing on specific areas for development.

1.3 Research aim and motivation

This research investigated the impact and management of project stakeholders in the Chemical sector within the South African project environment. Further, this research was specifically conducted on organisations located within a selected geographic region. Stakeholder relationships were analysed from the perspective of the core project team on the influence of external stakeholders on projects completed within the last five years.

The objectives of this study were aligned with a study by Karlsen (2002) into project stakeholder management in Norway. As such this study aimed to:-

- Identify those external stakeholders that are the most important to the project, and thus facilitate a more proactive focused approach to managing the relations with them
- Establish which external stakeholders impact the project by causing the most uncertainty and problems and thus enable a more concentrated and targeted risk management effort, and
- Identify which dimensions require development in order to improve project stakeholder management.

The conclusions drawn from this research can be used to influence the success of projects within this sample by understanding the criticality, and impact of external project stakeholders. This can facilitate and enable a more focused and proactive stakeholder management strategy.

1.4 Research scope

This research was based on a study conducted in Norway (Karlsen, 2002) since no published study could be located which considered the objectives of this research in a local project context. The basis of this research differs primarily with Karlsen's (2002) study in that this research focussed only on chemical manufacturing organisations located in the geographical region of Sasolburg, province of Free State in South Africa as opposed to a blanket study conducted across sectors and geographic areas by Karlsen (2002).

1.4.1 Sector selection

A single industry sector was selected to enable a more in-depth research study to be undertaken. The selection of the Chemical sector as the focus for this research was based on the reasons presented in the literature review in Chapter 2, section 2.9 and 2.10, together with consideration of the following factors:-

- *Sector investment and importance* – the Chemical sector has been identified and is included on the sector priority list as a target for private sector investment (South African government information,

2006). The local Chemical sector is the largest in Africa being both complex and diversified with current investment exceeding R2 billion annually (The Department of Trade and Industry, 2006). Planned investment through new projects and expansion is significant when considering the proposed multi-billion rand investment in a new fuels from coal facility (Creamer, 2006)

- *Market value* – The Chemical sector is forecasted to grow for the period 2006-2011 at 13.3% with a market value estimated in 2011 to be \$24.7 billion (Datamonitor, 2007)
- *Variety of stakeholder influence* – From a research perspective the stakeholder interaction that the Chemical sector experiences may vary due to the market being segmented into base, speciality, agricultural and pharmaceutical chemicals. As such differing perspectives could be obtained.

1.4.2 Geographic region

The scope of this research is limited to the geographic region of Sasolburg in the Free State province of South Africa. This geographic region has been selected due to the region playing host to relatively large chemical complexes, and over a number of years the region has developed industrially to the extent where the town is considered the chemical hub of South Africa (South African Government Information, 2008).

Chemical manufacturing companies present in the region include (refer Appendix A and B) Sasol Chemical Industries (SCI), Omnia Fertilizers, Karbochem, and Safripol. When compared against listed chemical companies (JSE Securities Exchange, 2008) which include AECI Limited, African Oxygen Limited, Freeworld Coatings Limited, Omnia Holding Limited, and Spanjaard Limited – it is evident that Omnia Fertilizers is the only subsidiary of a listed chemical sector company that is located in the region. Therefore selecting subsidiaries of listed companies as the focus of this research study would exclude other major chemical manufacturing companies present in the region. Further, from a research perspective Sasol Limited is listed under the Oil sector (JSE Securities Exchange, 2008) and excluding its major chemical producing subsidiary, SCI, could dilute the richness of this research study in terms of the research findings and conclusions.

1.5 Summary

This chapter provided an introduction to this research study, highlighting the research problem, the aim and motivation for conducting this research, and the scope of this research study. In summary, the research problem highlighted the importance of projects delivering upon their stated objectives and the idea that successful projects are dependant on the relationship between a project and the management of its stakeholders. In this context this research investigated the impact and management of external project stakeholders within the Chemical sector, specifically in chemical manufacturing organisations located in the geographical region

of Sasolburg (province of Free State in South Africa). This research explored stakeholder management from the perspective of the core project team on the influence of external stakeholders on projects completed within the last five years.

The next chapter presents a review of the literature associated with the focus of this research study.

2. LITERATURE REVIEW

2.1 Introduction

The theory reviewed in this section aims to define and describe the concept of project stakeholder management as well as analyse its effects on project performance. The research problem alludes to the importance of project stakeholder management and its link to the successful completion of a project. The areas of stakeholder identification, importance, impact, and dimensions of stakeholder management will be reviewed to facilitate a clearer understanding of the drivers of effective project stakeholder management.

A brief literature review on project strategy and its dependence on stakeholders highlight the importance of taking cognisance of the influence that stakeholders can have on influencing project strategy.

Since external project stakeholders can impact the project team, the performance of the project team and hence the performance of the project is invariable related to project stakeholder management. Therefore, a brief literature review of motivational theory and its link to project team performance follows.

This chapter concludes with a literature review of the Chemical Sector which aims to describe the structure and characteristics of the industry and provide a context for this research study.

2.2 Project Stakeholders

Meredith and Mantel (2006, p. 9) broadly define a project as “a specific, finite task to be completed.” A brief literature search revealed the following definitions, as outlined in Table 2.1, for project stakeholders.

Table 2.1: Stakeholder definitions

Author	Definition
Freeman, R.E. (1984, p. 46)	“A stakeholder is any group or individual who can affect or is affected by the achievement of the organisation’s objectives...”
PMBOK Guide (2004, p.24)	“Project stakeholders are individuals and organisations that are actively involved in the project, or whose interests may be affected as a result of project execution or project completion.”
Boddy and Paton (2004, p. 231)	“Stakeholders are individuals, groups or institutions with an interest in the project, and who can affect the outcome. They may be active supporters ... or vigorous opponents who see it as threat to some aspect of their culture, structure or power.”
Kolltveit and Grønhaug (2004, p. 545)	“...stakeholders have different interests in and ambitions for a project depending on the type of their involvement ... they influence the project according to what role they play in relation to the project.”
El-Gohary <i>et al.</i> (2006, p. 595)	“...stakeholders are individuals or organisations that are either affected by or affect the development of the project”

Following from these definitions project stakeholders can be regarded as individuals and/or groups that are involved with, can influence, or are affected by the activities or results of a project during its lifecycle.

2.3 Project Stakeholder Identification

During the lifecycle of a project a number of individuals or groups with specific interests will be affected. The challenge is to identify these project stakeholders and evaluate their needs and expectations in relation to the objectives of the project to ensure which needs and expectations will be satisfied, and identify which stakeholders can have an influence on project decisions (Olander and Landin, 2005; Olander, 2006).

The literature reviewed presents two views regarding the starting point for managing stakeholders. Cleland (1999) proposes the starting point as identifying the appropriate stakeholders followed by determining the nature of their interest (classifying). Alternatively, Achterkamp and Vos (2007) propose stakeholder classification as the starting point followed by identification putting forth the notion that a role based model should be aligned with the context of the project. No negative impact on the process is evident in the literature of beginning with either.

In Karlsen's (2002) study into project stakeholder management the author seeks to differentiate between factors that can impact on the project and which cannot be influenced by the project stakeholders, and those factors that can be influenced by the project stakeholders. Karlsen (2002) concludes that general environmental factors (technological, legal, economic, and political factors) cannot easily be influenced by project stakeholders, and within the task environment identified the external stakeholders shown in Figure 2.1.

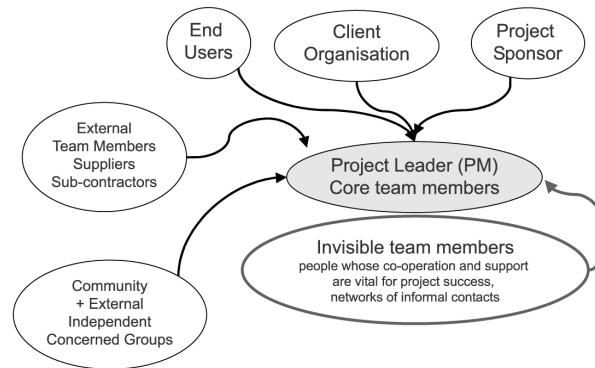
Figure 2.1: External project stakeholders (Karlsen, 2002)



In a study into visualising and mapping stakeholder influence, Bourne and Walker (2005) present a general stakeholder classification model that seeks to identify areas of emergence for external stakeholders (Figure 2.2). This stakeholder classification model can be applied to projects in various contexts.

The external project stakeholder list identified by Karlsen (2002) supports the general classification model and categories highlighted by Bourne and Walker (2005) and subsequently form the basis of stakeholder identification for this research study. The core project team or project (referred to in Figure 2.1 and Figure 2.2) consists of the project manager and the core team members which include the engineering manager, technical specialists, project engineer, and project controllers (Meredith and Mantel, 2006).

Figure 2.2: Identifying external stakeholders (Bourne and Walker, 2005)



2.4 Classifying Project Stakeholder Importance

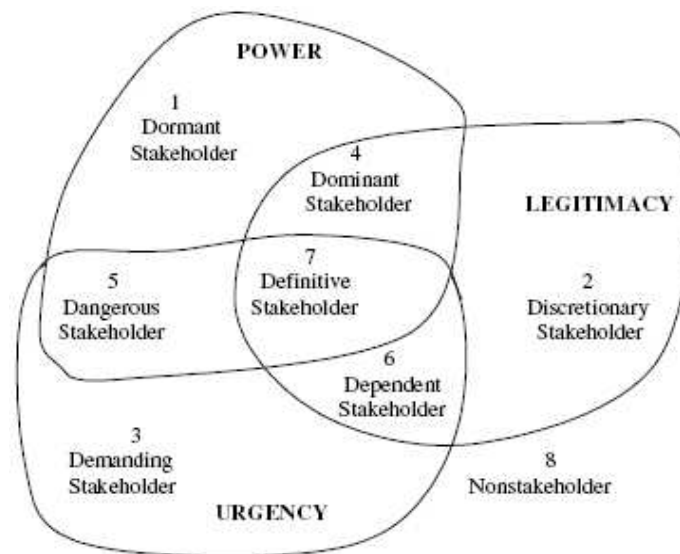
Mitchell, Agle and Wood (1997) describe how stakeholder claims are prioritised arguing that a higher priority is given to a stakeholder if it is believed that there is a sense of legitimacy to the claim which requires urgent action, and if the stakeholder can seek to influence through the use of power.

Boddy and Paton (2004) propose a three step process for stakeholder analysis commencing with the development of a map that differentiates between the significance of each stakeholder and then captures the specific interests of the stakeholders. The third step assesses how to positively influence the stakeholder and what benefits to offer in order to gain their support.

Olander and Landin (2005) suggest identifying and grouping stakeholders through the use of a power/interest matrix where each stakeholder is

mapped against the level of power or influence they possess and how interested that individual or group is in the project. The resulting stakeholder mapping helps frame the level of communication and depth of relationships required between the various stakeholders and the project. Boonstra (2006) makes reference to the stakeholder salience theory of Mitchell *et al.* (1997) stating that stakeholders usually possess one or more attributes of power, legitimacy and urgency. These attributes are then combined to yield eight types of stakeholders as represented in Figure 2.3 below. Being able to understand and classify stakeholders into these eight types influences the relationship management strategy employed to relate to each stakeholder.

Figure 2.3: Stakeholder typology (Boonstra, 2006)



It is evident from the literature review that stakeholders can be identified and categorised in a variety of ways depending on their demeanour

towards a project. Karlsen (2002) earlier stated that power allows one to control the flow of information and resources which can affect the planning and ultimately the direction of the project. As such this leads to, and links with, the concept of which stakeholders are more important since it is highly unlikely that each stakeholder involved in a project will have a similar mapping to one another in terms of power, interest, and legitimacy. Understanding the relative importance of each stakeholder allows varying levels of focus, thus facilitating a more efficient approach to stakeholder management.

2.5 Impact of Project Stakeholders

Linked to the level of importance of project stakeholders emerges the idea of the level of impact that stakeholders can exhibit on a project. From the literature review on stakeholder classification with respect to importance (Mitchell *et al.*, 1997; Boddy and Paton, 2004; Olander and Landin, 2005; Boonstra, 2006) stakeholders can, depending on their perspective of the project under consideration, have a negative impact which would manifest through the emergence of problems and uncertainty for the project (Karlsen, 2002). Karlsen (2002) further highlights that these problems and uncertainty can contribute to project failure listing as examples poor communication, provision of inadequate resources, and changes to the scope of work.

Achterkamp and Vos (2007) add that project managers should be in a position to benefit from the early identification and management of

stakeholders at the start of a project which would ultimately translate into superior project performance.

Using the firefighter-firelighter analogy as described by Barber and Warne (2005), identifying those stakeholders that can negatively impact on the project can encourage a management style adopted by the project manager that is proactive as opposed to one that is reactive and driven by crisis management. In this context, the project manager will proactively interact with the various networks seeking to motivate stakeholders to pursue goals in a cooperative manner within the project team.

2.6 Developing Project Stakeholder Management

Robbins and Judge (2007) describe traditional management functions as including planning, organising, leading, and controlling. Stakeholder management usually comprises of managing stakeholder strategies where management includes these traditional focus areas (Karlsen, 2002). Karlsen (2002) identified the following dimensions as potential development areas for stakeholder management:-

- Strategies and plans,
- Visions and objectives,
- Procedures and routines,
- Evaluations,
- Tools and methods, and
- Theories

Sutterfield *et al.* (2006) cited the following areas to improve project performance: project vision, mission, and objectives; project sponsorship; project planning; project specifications; conflict management; and resistance to change. The authors state that continually communicating the vision ensures the build-up of momentum, having an appropriate project sponsor is essential for achieving consensus and harmonising conflicting voices, proper planning at the onset of the project minimises changes in project scope, excessive specifications do not ensure quality, and the importance for a project manager to be able to effectively manage conflict and be able to reduce stakeholder's resistance to change when confronted with new approaches.

The areas highlighted by Sutterfield *et al.* (2006) can be grouped within the dimensions of Karlsen (2002), indicating a degree of conformity in the literature reviewed. The basis for this research will therefore be the dimensions highlighted by Karlsen (2002).

2.7 Project Strategy and Stakeholders

Project strategy can be defined as a direction that the project follows which contributes to the success of the project within its environment (Artto *et al.*, 2008).

Frooman (1999) argues that stakeholders influence strategy depending on the balance of power implicit in the relationship between the stakeholders and the firm. This balance of power is dependant on the level of the power

base, and the level of interdependence between the parties. Frooman (1999) subsequently puts forth the view that understanding the strategy that stakeholders can pursue allows mitigating, reactive or supportive actions to be undertaken from a management perspective. This type of analysis brings depth to the notion of simply identifying and classifying stakeholders. The importance of such understanding is highlighted by Grundy (1998) where the author states that project management can play a central role in strategy implementation and in effecting strategic change for organisations.

With the link between project management and meeting future business needs, project effectiveness in relation to strategy is highly important (Srivannaboon and Milosevic, 2006). Artto and Wikstrom (2005, p. 349) state “that projects are part of overall business and a central part of the development, strategic sight and maintaining of the firm’s competitiveness” while Artto *et al.* (2008) conclude that the number of influential stakeholders present in the environment is one of the dimensions which strongly determine the project strategy employed.

2.8 Effect of Motivation on Project Performance

Gray’s (2001) research into organisational climate and project success revealed that promoting a climate that facilitated communication, individual involvement, and one which valued and respected ideas yielded enormous benefit. Gray (2001, p. 108) stated “that a supportive organisational environment is a key factor in successful project

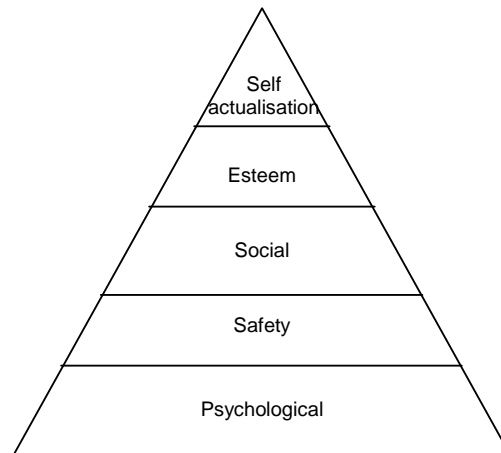
outcomes.” Thamhain’s (2004) research into the linkage between the project environment to performance supported the conclusions of Gray (2001). Thamhain (2004) found that the success of a project depended on the level of interaction amongst the project team, concluding that overall team performance is enhanced through creating both a project and organisational environment that is supportive of individual project team member needs by understanding organisational and team dynamics, and that effective teamwork through networking and cooperation is a key factor in determining the success of a project. Gallstedt (2003) put forth the notion that project participants (which includes external project stakeholders) generally have clearly defined goals which serve to motivate through a sense of accomplishment once the challenge of reaching those goals are achieved.

These conclusions (Gray, 2001; Gallstedt, 2003; Thamhain, 2004) have an underlying association to motivational theory. Robbins and Judge (2007) describe earlier theories of motivation as including Maslow’s hierarchy of needs and Herzberg’s motivation-hygiene (two-factor) theory, with contemporary motivational theories including McClelland’s theory of needs.

Figure 2.4 highlights Maslow’s hierarchy of needs theory concerning individual levels of motivation (Stum, 2001). The needs hierarchy commences with physiological needs which are related to basic survival, safety needs which are concerned with creating an environment free of

danger, social needs linked to affection and relationships, esteem needs relating to an individual's self worth, and finally the need for self actualisation which is concerned with a sense of individual fulfilment.

Figure 2.4: Maslow's Hierarchy of Needs



McClelland's theory of needs focuses on the need for achievement, power, and affiliation. The need for achievement considers an individual's drive to excel and succeed, the need for power describes the need to influence others in the way they behave, and the need for affiliation describes the need for close interpersonal relations (Robbins and Judge, 2007).

Herzberg's motivation-hygiene theory relates job satisfaction to intrinsic factors with dissatisfaction being associated with extrinsic factors. Herzberg proposed hygiene factors (conditions associated with a job) as those factors which when satisfied bring neither satisfaction nor

dissatisfaction, arguing that motivation occurred by emphasising factors associated with the actual work performed (Robbins and Judge, 2007).

From the perspective of project performance, creating the right levels of motivation through the environment can ultimately lead to increased project performance with Gallstedt (2003, p. 450) stating that “motivation is the driving force that supports individuals in their efforts to reach project objectives.”

2.9 Nature of the Chemical Industry

The chemical industry is relatively mature dating back to the early nineteenth century. As such the industry is generally faced with slower revenue growth and tighter profitability margins. The difference between chemical firms originated historically from the varying feedstocks used – primarily differentiated through the use of either coal or petroleum. The result thereof was that firms developed specialised product and process capabilities, contributing to a vertically specialised global chemical industry structure (Macher and Mowery, 2004). The industry is also characterised by the use of advanced technology and producing firms use technology licensing, where possible, as an avenue to increase revenues arising from process innovations (Arora, 1997).

Presently the chemical industry is synonymous with individual firms focussing on product specialisation. Product specialisation is essentially split between firms producing higher value speciality chemicals and those

producing high volume commodity chemicals. Speciality chemicals can be further split into fine chemicals used primarily in the pharmaceutical industry, and performance chemicals. Global competition has resulted in the growth of specialised chemical firms entering niche markets. The focus of these firms is on customer supplier relationships enhanced by building trusted partnerships, and providing superior customer service (Guisinger and Ghorashi, 2004).

2.10 South African Chemical Sector

Simon and Sohal (1995) provide valuable insight into the historical development of the local chemical industry. The authors analysed the local chemical industry from a macro-environment and strategic perspective, concluding that the industry was dominated by a few major companies with a large number of small scale manufacturing firms. The authors cite the sanctions imposed in the late 1950s as pivotal to the subsequent development of the industry, highlighting facilities that struggled to achieve economies of scale since these were built to service a small domestic market, the licensing of technology from first world countries and consequently a relatively low research and development (R&D) spend in relation to sales revenue, and in some cases a lack of general competitiveness arising from protection tariffs.

The local industry has subsequently evolved with planned investment through new projects and existing facility expansions amounting to significant amounts of capital. As an example thereof, Creamer (2006)

reported the proposed multi-billion rand investment in a new synthetic fuels facility using coal as feedstock.

Currently, the industry profile includes exports in 2007 amounting to approximately R40 billion. The sector is currently playing an anchoring role by supplying a large volume of locally manufactured chemicals to a variety of industries (Creamer, 2008).

2.11 Conclusion

This chapter has explored the key issues prevalent in the literature. These included the general acceptance that project stakeholders can drastically influence the success of a project; subsequently the importance of identifying and classifying stakeholders; the dimensions of project stakeholder management and the influence of stakeholders on project strategy; and the relation between motivation levels and project team performance. These constructs are explored within the context of the chemical sector.

The following chapter presents the purpose of this research in the form of research questions and hypotheses.

3. RESEARCH QUESTIONS AND HYPOTHESES

This chapter presents the purpose of this research study in terms of research questions and hypotheses which followed from the aim and motivation for this research presented in Chapter 1, and the concepts discussed in the literature review in Chapter 2.

To meet the research objectives the research questions used by Karlsen (2002) are deemed appropriate. However, the three corresponding hypotheses have been developed specifically for this research study:-

Research Q1: *Which stakeholders are the most important in the project environment?*

The null hypothesis states that all project stakeholders are equally important and receive the same emphasis regarding stakeholder management. The alternative hypothesis states that differences exist regarding the importance of various stakeholders involved in projects (two-tailed test, $H_0: \mu_i - \mu_{i+1} = 0$, $H_A: \mu_i - \mu_{i+1} \neq 0$ where i represents the various stakeholders).

Research Q2: *Which stakeholders cause the most uncertainty and problems for a project?*

The null hypothesis states that all stakeholders impose the same amount of uncertainty and problems on the project. The alternative hypothesis states that differences exist in the level of uncertainty and problems that

different stakeholders impose on the project (two-tailed test, $H_0: \mu_i - \mu_{i+1} = 0$, $H_A: \mu_i - \mu_{i+1} \neq 0$ where i represents the various stakeholders).

Research Q3: *Which area/s of project stakeholder management requires the most development?*

The null hypothesis states that all areas concerning stakeholder management require the same amount of development. The alternative hypothesis states that there are specific areas that will require more development to enhance project stakeholder management (two-tailed test, $H_0: \mu_i - \mu_{i+1} = 0$, $H_A: \mu_i - \mu_{i+1} \neq 0$ where i represents the various development areas for stakeholder management).

The following chapter describes the research methodology that was used to answer these research questions and test the hypotheses.

4. RESEARCH METHODOLOGY

4.1 Introduction

This chapter highlights the research process that was utilised to investigate and tackle the research problem presented in Chapter 1. The approach adopted follows the research process ‘onion’ (Table 4.1, below) which refers to the research philosophy, approach, strategy, time horizon, and data collection method employed.

Table 4.1: Research process ‘onion’ (Saunders et al., 2000)

Layer	Approach
1. Research philosophy	Positivism, Phenomenology (or Interpretivism)
2. Research approaches	Deductive, Inductive
3. Research strategies	Experiment, Survey, Case study, Grounded theory, Ethnography, Action research
4. Time horizons	Cross sectional, Longitudinal
5. Data collection method	Sampling, Secondary data, Observation, Interviews, Questionnaires

4.2 Research Philosophy

The research philosophy refers to “the way you think about the development of knowledge” (Saunders *et al.*, 2000, p. 84). The main paradigms associated with the positivism and phenomenology philosophy is presented in Table 4.2, below:-

Table 4.2: Research paradigms (Saunders et al., 2000)

Positivism	Phenomenology
The researcher is objective, independent of and is not affected by the research subject	The research is based on a social world and is difficult to theorise by definite relationships and laws
The research emphasises a highly structured methodology for replication purposes	The generalisability of the research is not of critical importance, but applicable to a particular set of circumstances and individuals
The research produces quantifiable observations that can be analysed statistically	The need to understand the specifics and circumstances of a situation to understand the reality

The research philosophy that aligned with the research problem, and which was subsequently followed during the research process, was the positivism paradigm.

4.3 Research Approach

Saunders (2000) states that the research approach taken could involve either a deductive or inductive approach, or a combination of the two. Deductive reasoning concerns the process of arriving at a “conclusion about a specific instance based on a known general premise” (Zikmund, 2003, p. 46) while inductive reasoning concerns the process of “establishing a general proposition on the basis of observation of particular facts” (Zikmund, 2003, p. 47). From Table 4.3, which highlights

some of the differences between the two approaches, a deductive approach is more suited towards a positivism paradigm. This research was therefore appropriately classified as deductive in nature.

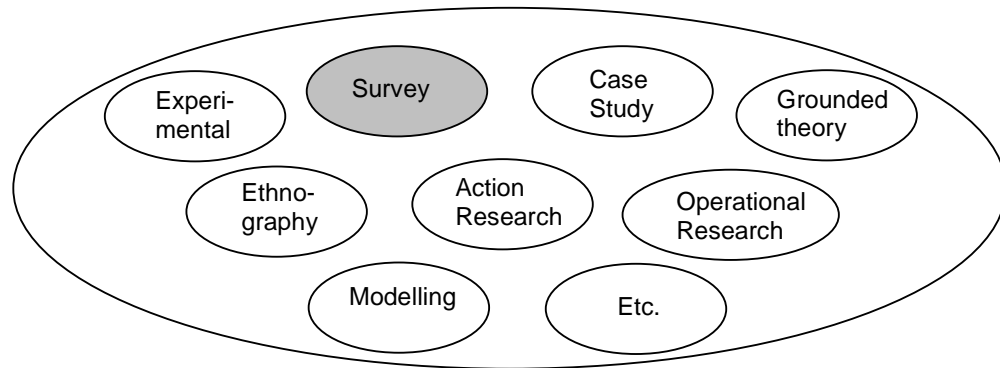
Table 4.3: Deductive and Inductive research (Saunders et al., 2000)

Deduction	Induction
Develop a theory or hypothesis and design the research to test the hypothesis	Collect data and develop theory following data analysis
More inclined to positivism	More inclined to phenomenology
Scientific research	Understanding of the way humans interpret their social world
Seeks to explain causal relations between variables	More concerned with the context in which events are occurring
More likely to collect quantitative data	More likely to collect qualitative data
Highly structured approach	More flexible structure

4.4 Research Strategy

The research strategy can be described as a framework that specifies the data collection and information analysis methods to be used (Zikmund, 2003). The research strategy alternatives are numerous and are highlighted in Figure 4.1.

Figure 4.1: Research design alternatives (Tobin, 2006)



Zikmund (2003) recommends descriptive research when one seeks to describe the characteristics of a population or phenomenon and further states that descriptive research seeks answers to specific questions (e.g. who, what, how etc.). Aligned with the stated research questions and hypotheses this research study was conclusive and descriptive in nature. The quantitative nature of this research is further substantiated by the evidence that the areas of project management and stakeholder theory are well researched and clearly defined (Bourne and Walker, 2005; Olander and Landin, 2005; Achterkamp and Vos, 2007). The four basic research methods associated with descriptive research are surveys, experiments, secondary data studies, and observation (Zikmund, 2003).

The research strategy deemed appropriate to the research objectives, and to enable collection of data, was survey. The reasons for selecting survey as the research strategy were linked to the benefits thereof. As highlighted by Zikmund (2003, p. 195): “surveys can provide quick, inexpensive, and accurate means to obtain information for a variety of objectives”, while

Saunders *et al.* (2000, p. 94) states that a survey approach allows the researcher “more control over the research process”.

Zikmund (2003) describes the unit of analysis as the major entity that will be analysed in the study. The unit of analysis was therefore defined as an individual project stakeholder.

4.5 Time Horizon

This research study will aim to establish stakeholder importance, the level of stakeholder uncertainty and problems imposed, and to establish development areas for project stakeholder management at a particular time. Further, since this research is time constrained a cross-sectional time horizon was considered most appropriate.

4.6 Sample Design and Sampling Procedure

This section describes the nature of the sampling process and the sample design employed.

4.6.1 Population and Sampling Frame

The population of relevance included all core project team members who have worked on projects completed in the Chemical sector in South Africa. Due to the absence of a comprehensive list or database the size of the population was unknown. For the purposes of this research it was

deemed unfeasible to quantify the population size and attempt to survey the entire population due to budget and time constraints.

The sampling frame, which resulted from the scope of this research as described in Chapter 1, included all core project team members who have worked on projects completed in the last five years in the Chemical sector located in the geographic area of Sasolburg, in the Free State province. The absence of a list of these core project team members, and the unfeasibility of developing such a list considering the availability of resources, made it impractical to quantify the sampling frame. Considering the purpose of this research the lack of a sampling frame is deemed acceptable.

A list comprising of the chemical manufacturing companies located in Sasolburg has been developed based on a map of the Sasolburg Industrial area (refer Appendix B). This list defines the Chemical sector in this region and therefore included core project team members who have worked on projects completed in the following organisations:-

- Sasol Chemical Industries (SCI),
- Omnia Fertilizers,
- Karbochem, and
- Safripol (previously owned by Dow Chemicals).

4.6.2 Sampling Technique, and Size

Zikmund (2003, p. 379) states that the “major alternative sampling plans may be grouped into probability techniques and non-probability techniques.” Probability sampling techniques includes simple random, systematic, stratified random, and cluster sampling with non-probability sampling techniques including quota, purposive, snowball, and convenience sampling (Saunders *et al.*, 2000).

Saunders *et al.* (2000, p. 170) states that “limited resources or the inability to specify a sampling frame may dictate the use of one or a number of non-probability sampling techniques”. Given the absence of a sampling frame of core project team members in the region combined with time and cost constraints, it was apparent that a non-probability sampling technique would be most appropriate for this research.

In particular, the snowball sampling technique was deemed most suitable for this research taking into consideration the relative difficulty in identifying members of the relevant population, and practicality of gaining access to organisations. Saunders *et al.* (2000, p. 175) states that “for populations that are difficult to identify snowball sampling may provide the only possibility”. Zikmund (2003) also highlights an advantage of snowball sampling as being low cost.

The snowball sampling technique comprised of making initial contact with one or two cases in the working population who were then requested to identify further cases, and so on (Saunders *et al.*, 2000; Zikmund, 2003).

When using the snowball sampling technique Saunders *et al.* (2000, p. 170) states that the issue of sample size “is ambiguous” and that “there are no rules” to determine the appropriate sample size. Considering the research questions and objectives for this research the target was to achieve a minimum sample size of 30 taking into consideration statistical analyses. The sampling split between organisations used employee count as a guide.

4.6.3 Data Collection Method

The data collection devices associated with the survey method includes the use of questionnaires, structured observation, and structured interviews (Saunders *et al.*, 2000).

The data collection method deemed most appropriate for this research was questionnaires. The use of questionnaires was selected based on the following factors (Saunders *et al.*, 2000):-

- The method’s congruency with the characteristics of the population in terms of literacy and email access,
- Improvement in the confidence level of reaching the right respondent,

- Decreasing the likelihood of respondent's answers being contaminated or distorted,
- Possibly enabling a large sample size, and
- Permitting the use of closed type questions.

In particular the questionnaire was self-administered with e-mail serving as the basis of contact with the respondents (on-line questionnaire). Zikmund (2003, p. 220) states that the benefits of e-mail based questionnaires include “speed of distribution, lower processing and distribution costs, faster turnaround time, more flexibility, and less handling of paper questionnaires”.

The design of the questionnaire (refer Appendix C) was based on fixed-alternative questions as opposed to open-ended questions. According to Zikmund (2003) open-ended questions are most beneficial for exploratory type research. Zikmund (2003, p. 333) also states that “In contrast to open-ended questions, fixed-alternative questions require less interviewer skill, take less time, and are easier for the respondent to answer”.

To increase the response rate, reliability, and validity of the data collected the design of the questionnaire incorporated the following factors (Saunders *et al.*, 2000, p. 279):-

- “Careful design of individual questions,
- Clear layout of the questionnaire form,
- Lucid explanation of the purpose of the questionnaire, and
- Pilot testing”

4.7 Data Analysis Approach

Analysis of the quantitative data collected followed the process suggested by Saunders *et al.* (2000):-

- Preparation of data for analysis,
- Selection of suitable tables and diagrams to explore and the present the data,
- Selection of appropriate statistics to describe and examine relationships and trends in the data.

These steps in the data analysis process are explained in more detail below.

Preparation of data for analysis

The first step in the process was to prepare the collected data to permit quantitative analysis to be performed. The data was initially entered into a spreadsheet and then coded for analysis taking into account the type of data (categorical or quantifiable), the data layout required for the analysis software, the possibility of missing data, and the checking of data for errors or inconsistencies. Further, the aggregated responses received from the participating organisations were disguised by substituting actual company names with Organisation A, B, C, and D to ensure anonymity.

Exploring and presenting data

This approach was undertaken to gain an understanding of the data collected and provide a context for further data analysis. Key aspects considered included distributions, trends, and range of values. For example the categorical data analysis included using frequency distributions to explore the experience levels of respondents and the average size (capital worth) of the projects worked on.

Describing and examining data using statistics

The next step in the data analysis process was to use descriptive statistics to “enable you to describe (and compare) variables numerically” (Saunders *et al.*, 2000, p. 351). This included statistics to describe the central tendency and dispersion of the data. For example from the quantifiable data questions in the questionnaire tables of means and standard deviations describing stakeholder importance, level of problems and uncertainty that stakeholders impose, and developmental areas for stakeholder management was generated.

The final step in the data analysis process used statistics to examine relationships in the data. The hypotheses were tested for statistical inference through significance testing and used *t*-tests to assess if the difference between means for independent samples were significantly different from zero (Albright *et al.*, 2006).

4.8 Research Limitations

This research will have, inter alia, the following limitations:-

- Consideration is given only to the Chemical sector in Sasolburg, and thus will ignore the level of stakeholder management and relations in other sectors and other geographic locations.
- Stakeholder relationships were analysed from the perspective of the core project team on the influence of external stakeholders on projects and no external stakeholders were contacted for their perspective.
- The focus of the study concerns the task environment and thus general environmental factors (e.g. technology, legal, economic etc.) that can impact on project stakeholders will be ignored (Karlsen, 2002).
- The use of non-probability sampling, and specifically the snowball sampling technique, may introduce bias in terms of representativeness since the sample units are not independent. This will make projection of data beyond the sample statistically inappropriate (Zikmund, 2003).

4.9 Summary

This chapter explained the details and reasons behind the selection of the specific methodology used in this research. The research philosophy, approach, strategy, time horizon, and the data collection method are discussed and has been summarised in Table 4.4. Further, the data

analysis approach was described followed by the limitations of this research study.

Table 4.4: Summary of research methodology

Layer	Approach
1. Research philosophy	Positivism
2. Research approaches	Deductive
3. Research strategies	Survey
4. Time horizons	Cross sectional
5. Data collection method (sampling and device)	Non-probability sampling (snowball), Questionnaire

The following chapter presents the findings following analysis of the data collected.



5. RESULTS

5.1 Introduction

This chapter describes and analyses the survey data obtained for this research process. It includes preliminary data analysis for completeness and variation, data analysis to determine the reliability of the survey instrument, exploratory data analysis to provide a profile and context of the data for this research, and descriptive statistics on the data to illustrate the findings.

The chapter concludes with a summary of the results and leads into the next chapter which discusses the results obtained.

5.2 Preliminary Data Analysis

Response rate

A total of 81 respondents were contacted using the snowball sampling technique. Of those contacted 33 responded yielding an on-line completion rate of 41%.

Response Bias

Zikmund (2003) highlights the various types of response bias as including acquiescence; extremity; interviewer; and auspices bias. The selection of the snowball sampling technique largely mitigated the possibility of acquiescence bias. The responses received were further analysed with no

evidence of extremity bias existing in the data which could have resulted in the presence of outliers. Interviewer and auspices bias were not applicable to this research due to the research methodology adopted and the design of the research instrument.

Missing data

To ensure that non-response items were avoided in the survey instrument, the on-line questionnaire (which used e-mail as the basis of contact) was designed to allow the respondent to only return the questionnaire once all questions had been completed. Subsequently there was no need to consider for example missing data substitution with a total possible value of 1551 (47 questions multiplied by 33 respondents) being achieved.

5.3 Analysis of Survey Reliability

The internal consistency approach was adopted to assess survey reliability (consistency of responses) with Cronbach's alpha being used as the measure. Internal consistency according to Saunders *et al.* (2000, p. 307) involves "correlating the responses to each question in the questionnaire with those to other questions in the questionnaire." The Cronbach alpha calculated for this research was 0.81 (refer Appendix D).

5.4 Exploratory Data Analysis

Exploratory type analyses were performed to understand the data collected and the characteristics of the sample. The total sample consisted of aggregated responses received from the relevant organisations. A pie chart was therefore drawn to describe the proportion of responses received (Figure 5.1).

Figure 5.1: Proportion of responses from relevant organisations¹

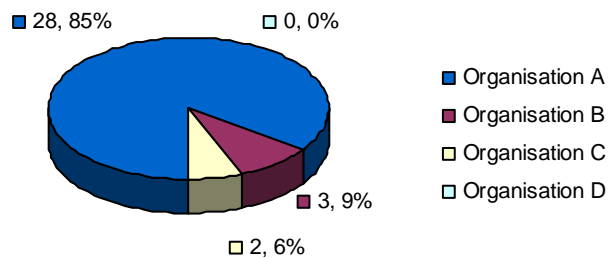


Figure 5.1 indicated that a total of 33 responses were received with Organisation A contributing 85% of the total responses with no responses being received from Organisation D.

Question 1 collected categorical data on the respondent's role within the core project team. The relevant result was therefore the proportion of respondent types in the sample. A pie chart was drawn and is presented in Figure 5.2.

¹ each sector in the pie chart contains the actual number of responses followed by 40 this number as a percentage of the total responses

Figure 5.2: Proportion of respondent types

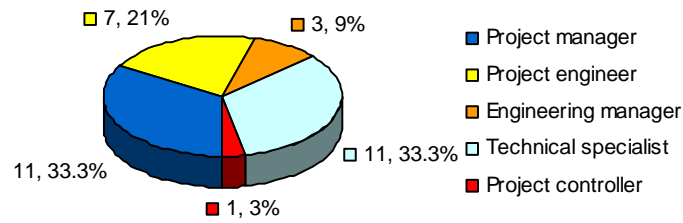


Figure 5.2 highlighted that the majority of respondent types were project managers (33.3%) and technical specialists (33%), with the other major respondent group being project engineers (21%).

Questions 2 and 3 grouped data into unequal width groups describing experience levels of respondents in terms of years of experience, and number of projects worked on in the last five years. The relevant aspects concerned frequency of occurrence and bar charts were therefore drawn (Figure 5.3 and Figure 5.4).

Figure 5.3: Years of experience of respondents

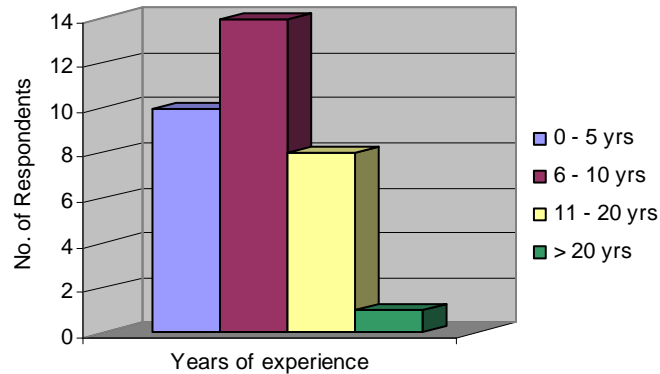
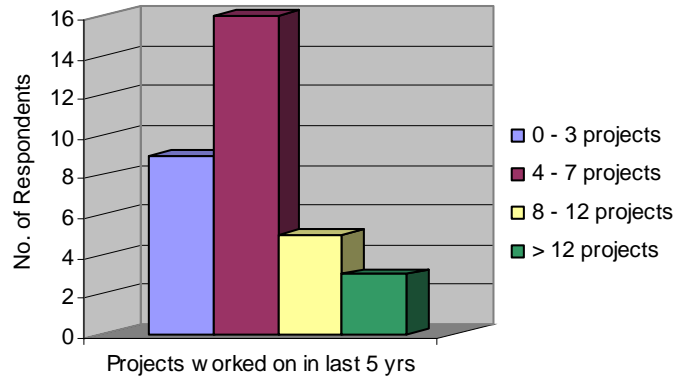


Figure 5.4: Experience levels of respondents (number of projects)



Figures 5.3 and 5.4 indicated that the data values were positively skewed with the majority of respondent types having work experience levels of between six to ten years, and that most of the respondents had worked on four to seven projects in the last five years.

Question 4 collected data on the average value of projects worked on by respondents in the sample. The relevant aspect concerned the frequency of occurrence of responses in specific categories and a bar chart was therefore drawn (Figure 5.5).

Figure 5.5: Average value of projects in sample

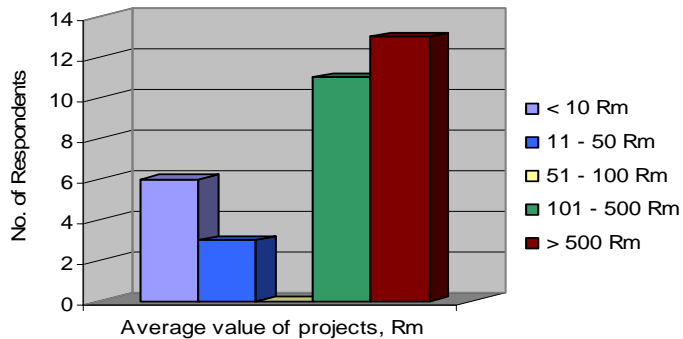


Figure 5.5 indicated that the data values were negatively skewed with the majority (24) of respondents, representing 73% of the sample, having worked on projects above R100 million.

5.5 Descriptive Data Analysis

Descriptive statistics and statistics to examine relationships were performed using the statistical data analysis package, NCSS 2007, where appropriate.

5.5.1 Identification, Classification, and Importance of Stakeholders

For question 6 the aspect of concern was the proportion of respondents agreeing or disagreeing with the statement that a “formalised system for identifying project stakeholders during a project” existed in the organisation. A pie chart was drawn using similar shadings for the two agree and disagree categories (Figure 5.6), and a box plot constructed to illustrate the distribution of responses received (refer Figure 5.7).

Figure 5.6: Identification of project stakeholders

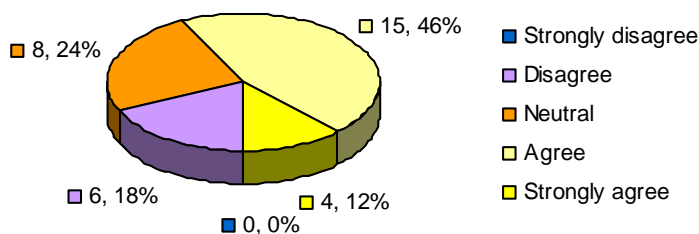


Figure 5.7: Box plot¹ for identification of project stakeholders

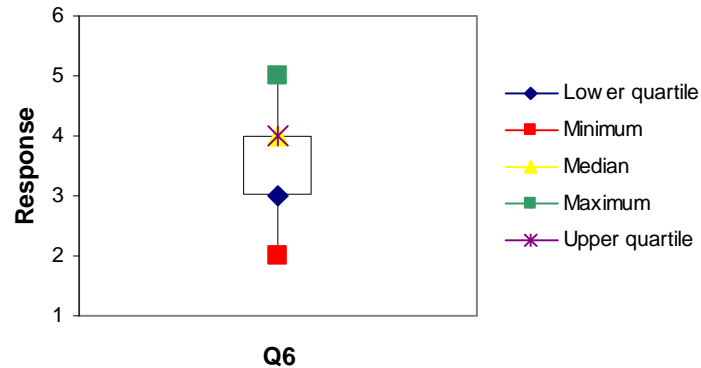


Figure 5.6 highlighted that the majority (58%) of respondents agreed that a formalised system for identifying project stakeholders existed in their organisations. It is evident from Figure 5.7 that the distribution of responses was negatively skewed with a longer tail towards the lower range of values. The most frequent response was “Agree”.

The aspect of concern for question 7 was the proportion of respondents agreeing or disagreeing with the statement that a “formalised system for classifying project stakeholders during a project” exists in the organisation. A pie chart was therefore drawn (Figure 5.8), and a box plot constructed (Figure 5.9).

¹ A box plot provides a graphical representation of the data distribution for the 44 variable. The plot indicates the middle value (median), and its relation to the middle 50% of the data between the lower and upper quartile (25th and 75th percentile), and the highest and lowest values (extremes)

Figure 5.8: Classification of project stakeholders

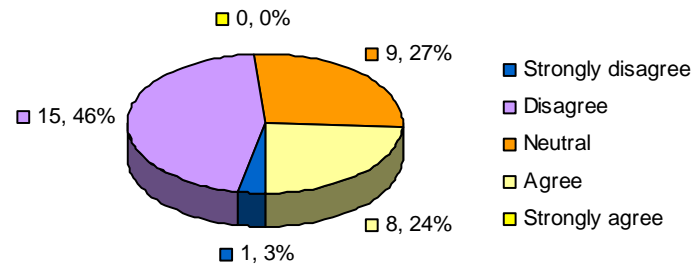


Figure 5.9: Box plot for classification of project stakeholders

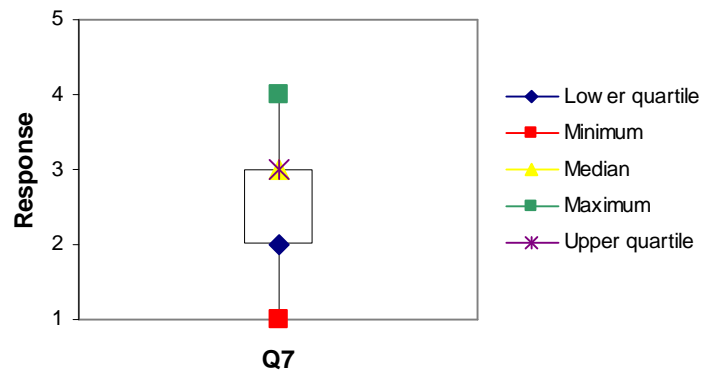


Figure 5.8 indicated that 49% of the respondents disagreed, 27% were neutral, and 24% agreed that a formalised system for classifying project stakeholders existed. From Figure 5.9 it is evident that the distribution of responses was negatively skewed with a longer tail towards the lower range of values. The most frequent response was “Disagree”.

The aspect of concern for question 9, which provided an answer to the first research question, was the proportion of respondents rating the relative importance of stakeholders on their bearing towards a project. A percentage component bar chart was therefore drawn (Figure 5.10), a box

plot constructed (Figure 5.11), and Table 5.1 constructed to highlight the results of the statistical tests.

Figure 5.10: Importance of external stakeholders

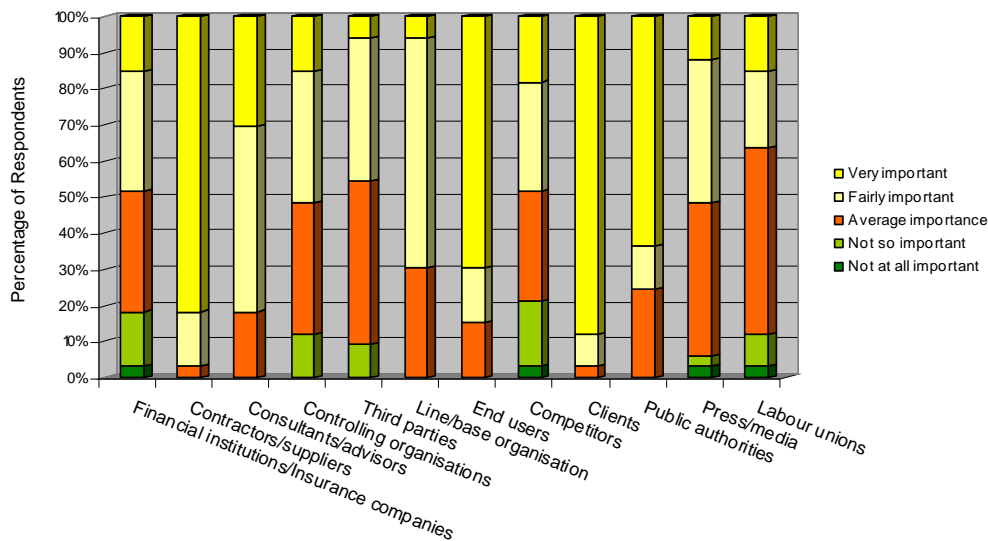


Figure 5.11: Box plot of the importance of external stakeholders

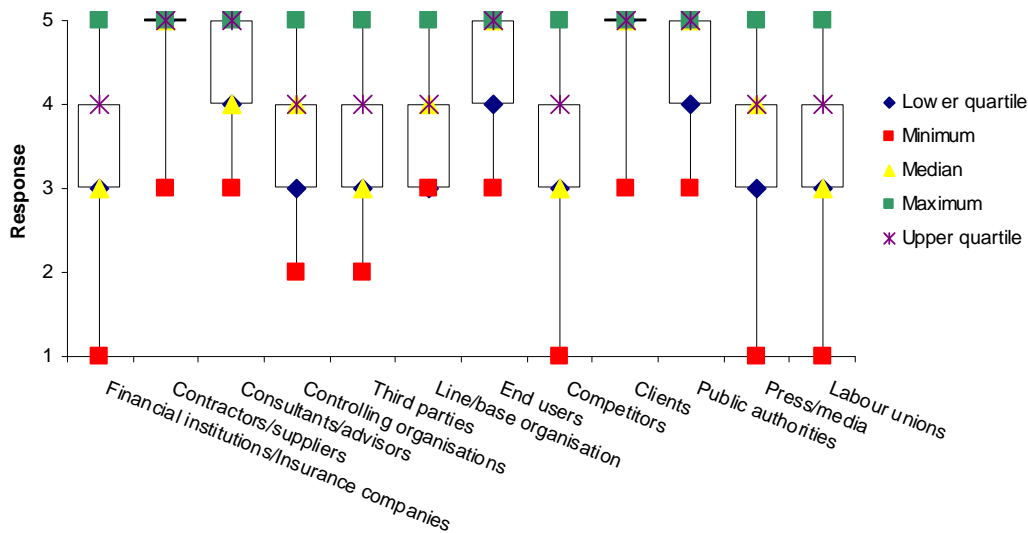


Table 5.1: Analysis of external stakeholder importance

Variable	Mean	Std. dev.	p-values											
			2	3	4	5	6	7	8	9	10	11	12	
1 Financial institutions/ Insurance companies	3.42	1.03	0.000	0.002	0.587	1.000	0.101	0.000	1.000	0.000	0.000	0.582	0.807	
2 Contractors/suppliers	4.79	0.48		0.000	0.000	0.000	0.000	0.127	0.000	0.598	0.023	0.000	0.000	
3 Consultants/advisors	4.12	0.70			0.006	0.000	0.024	0.019	0.003	0.000	0.167	0.005	0.001	
4 Controlling organisations	3.55	0.90				0.526	0.259	0.000	0.599	0.000	0.000	1.000	0.410	
5 Third parties	3.42	0.75					0.041	0.000	1.000	0.000	0.000	0.518	0.778	
6 Line/base organisation	3.76	0.56						0.000	0.116	0.000	0.001	0.248	0.043	
7 End users	4.55	0.75							0.000	0.052	0.424	0.000	0.000	
8 Competitors	3.42	1.09								0.000	0.000	0.594	0.813	
9 Clients	4.85	0.44									0.008	0.000	0.000	
10 Public authorities	4.39	0.86										0.000	0.000	
11 Press/media	3.55	0.87											0.403	
12 Labour unions	3.36	0.96												

Note: If the p-value is < 0.05 (confidence coefficient of 95%), the null hypothesis is rejected.

The response scale for question 9 ranged from 1 to 5 (1 = not at all important and 5 = very important). Both Figure 5.10 (refer above average importance) and Table 5.1 (refer mean values) indicated that the five highest ranked external stakeholders were contractors/suppliers and clients, end users, consultants/advisors, and public authorities. The least important groups were the press/media, financial institutions/insurance companies, and third parties. From Figure 5.11 it is evident that the distribution of responses for the five highest ranked external stakeholders was negatively skewed with a longer tail towards the lower range of values, except for the consultants/advisors group which was positively skewed.

Table 5.1 summarises the results of the statistical analysis regarding the importance of external stakeholders.

5.5.2 Impact of Project Stakeholders

For question 5 the relevant issue was the proportion of respondents agreeing or disagreeing with the statement that “Engaging stakeholders during the life cycle of a project is key to project success”. A pie chart was therefore drawn (Figure 5.12), and a box plot constructed showing the distribution of values (Figure 5.13).

Figure 5.12: Stakeholder impact on project success

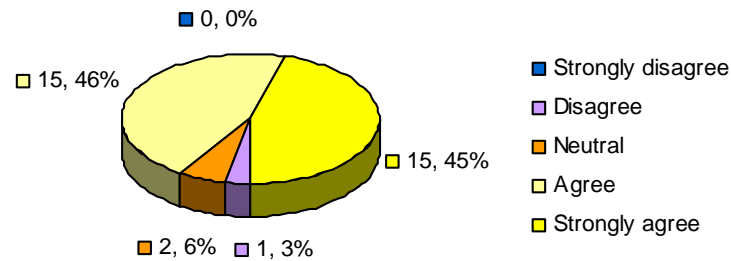


Figure 5.13: Box plot for stakeholder impact on project success

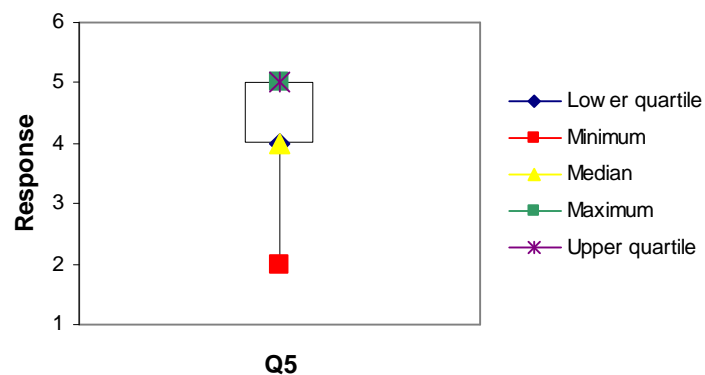


Figure 5.12 indicated that the majority of respondents (91%) agreed that engaging stakeholders during the project life cycle was critical to project success. From Figure 5.13 it is evident that the distribution of responses

was negatively skewed with a longer tail towards the lower range of values. The most frequent response was “Agree”.

Question 12 explored the notion of which stakeholders caused the most problems and uncertainty for the project, which provided an answer to the second research question. A percentage component bar chart was therefore drawn (Figure 5.14), Figure 5.15 drawn to illustrate the distribution of values, and Table 5.2 constructed to highlight the results of the statistical tests.

Figure 5.14: Responses to the problems and uncertainty caused

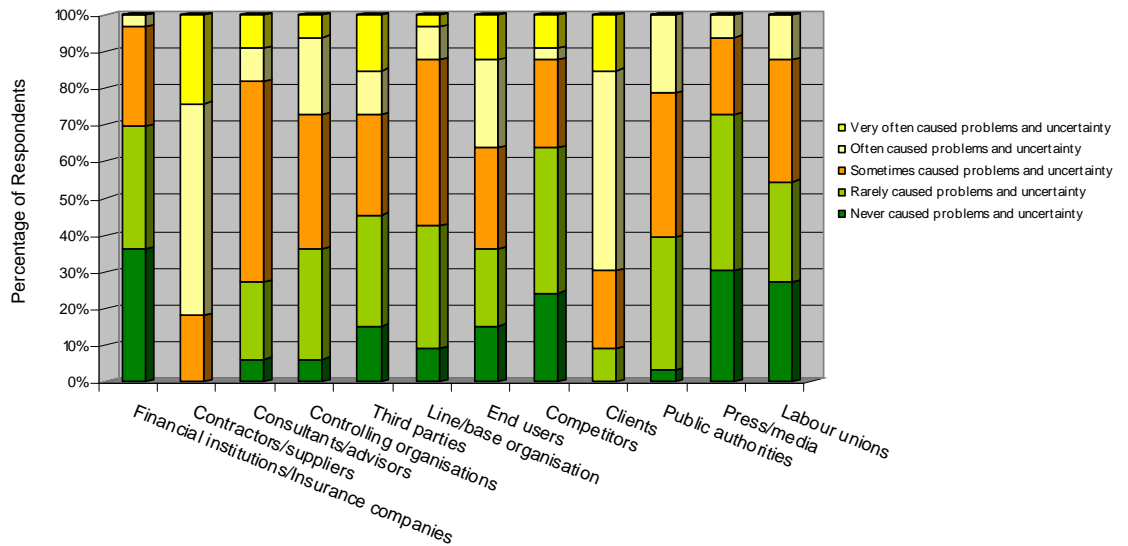


Figure 5.15: Box plot of the problems and uncertainty caused

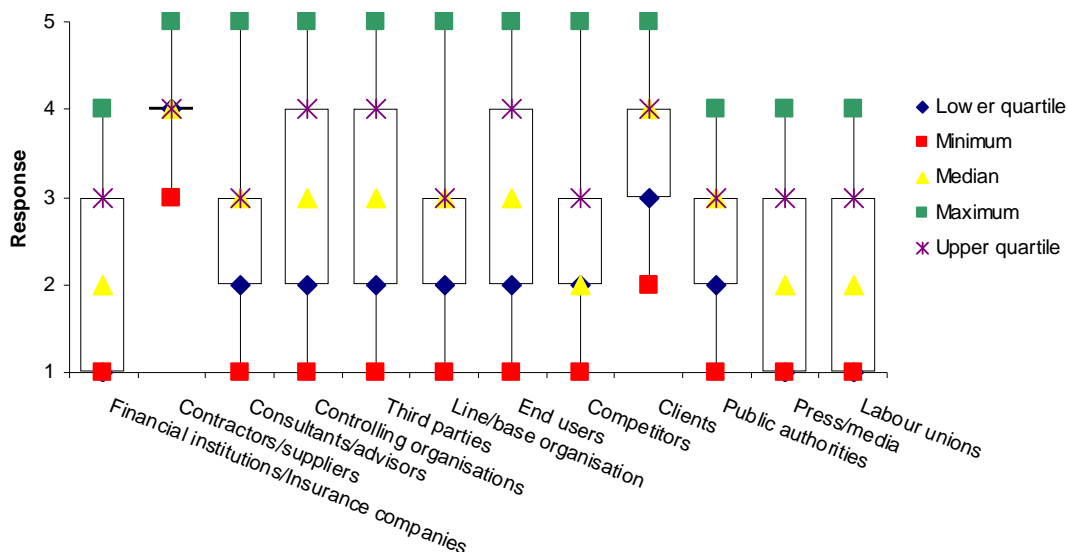


Table 5.2: Analysis of problems and uncertainty caused

Variable	Mean	Std. dev.	p-values											
			2	3	4	5	6	7	8	9	10	11	12	
1 Financial institutions/Insurance companies	1.97	0.88	0.000	0.000	0.000	0.003	0.003	0.000	0.160	0.000	0.000	0.783	0.164	
2 Contractors/suppliers	4.06	0.66	0.000	0.000	0.000	0.000	0.000	0.109	0.000	0.000	0.000	0.000	0.000	
3 Consultants/advisors	2.94	0.97		0.902	0.671	0.197	0.914	0.024	0.001	0.500	0.000	0.011	0.017	
4 Controlling organisations	2.91	1.01			0.753	0.256	0.832	0.034	0.000	0.598	0.000	0.017	0.017	
5 Third parties	2.82	1.29				0.513	0.634	0.110	0.001	0.911	0.005	0.074	0.074	
6 Line/base organisation	2.64	0.90					0.225	0.230	0.000	0.482	0.007	0.156	0.156	
7 End users	2.97	1.26						0.036	0.004	0.494	0.001	0.021	0.021	
8 Competitors	2.33	1.16							0.000	0.068	0.241	0.912	0.912	
9 Clients	3.76	0.83								0.000	0.000	0.000	0.000	
10 Public authorities	2.79	0.82									0.001	0.035	0.035	
11 Press/media	2.03	0.88										0.254	0.254	
12 Labour unions	2.30	1.02											0.254	

Note: If the p-value is < 0.05 (confidence coefficient of 95%), the null hypothesis is rejected.

Table 5.2 indicated that the three highest ranked external stakeholders who caused the most problems and uncertainty were contractors/suppliers; clients; and end users. The external stakeholder groups causing the least problems and uncertainty were the press/media, labour unions, financial institutions/insurance companies, and competitors. From Figure 5.15 it was evident for the five highest ranked external stakeholder groups that the distribution of responses was a

mixture of symmetric and negatively skewed responses. Table 5.2 summarises the results of the statistical analysis regarding the problems and uncertainty caused by external stakeholders.

5.5.3 Developing Project Stakeholder Management

For questions 8 and 11 the most important dimensions explored were the responses around the level of formalised management practices of external project stakeholders, and its integration during the project life cycle. Pie charts were therefore drawn (Figure 5.16 and 5.17), and box plots constructed showing the distribution of values (Figure 5.18 and 5.19).

Figure 5.16: Level of formalised management practices

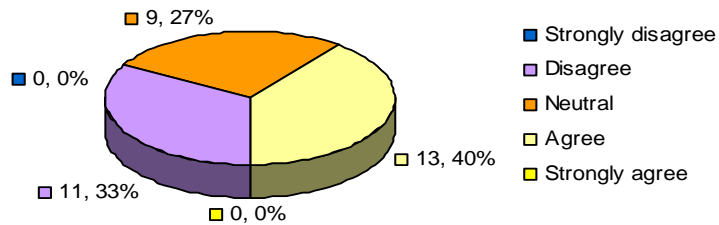


Figure 5.17: Integration of stakeholder management during the project

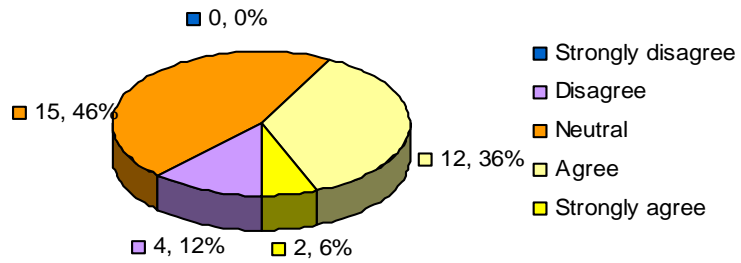


Figure 5.18: Box plot of the level of formalised management practices

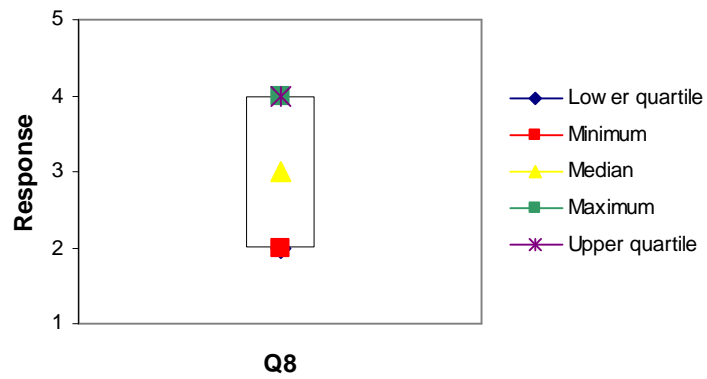


Figure 5.19: Box plot of the level of Integration of stakeholder management during the project

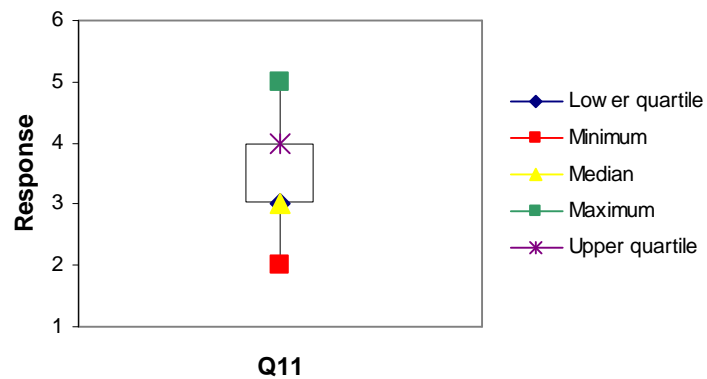


Figure 5.16 indicated that 40% of respondents agreed and 33% disagreed that their organisation had a formalised system for managing stakeholders during the project life cycle. The most frequent response was “Agree”. From Figure 5.18 it was evident that the distribution of responses was symmetric.

Figure 5.17 indicated that 42% of respondents agreed and 12% disagreed that their organisation formally integrated stakeholder management during the project life cycle. From Figure 5.19 the distribution of responses was positively skewed with a longer tail towards the higher range of values. The most frequent response was “Neutral”.

The dimension explored by question 10 was the responses around the level of communication regarding risks and benefits between the project and its external stakeholders. A pie chart was drawn using similar shadings for the two agree and disagree categories (Figure 5.20), and a box plot constructed showing the distribution of values (refer Figure 5.21).

Figure 5.20: Level of communication regarding risks and benefits

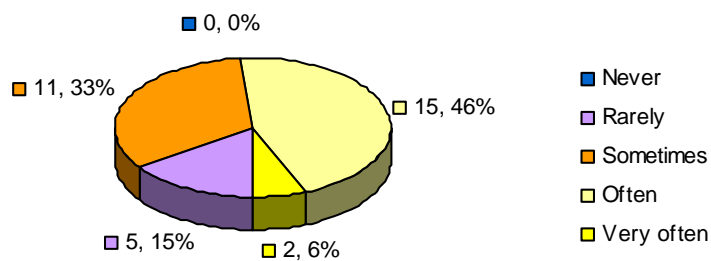


Figure 5.21: Box plot of communication levels regarding risks and benefits

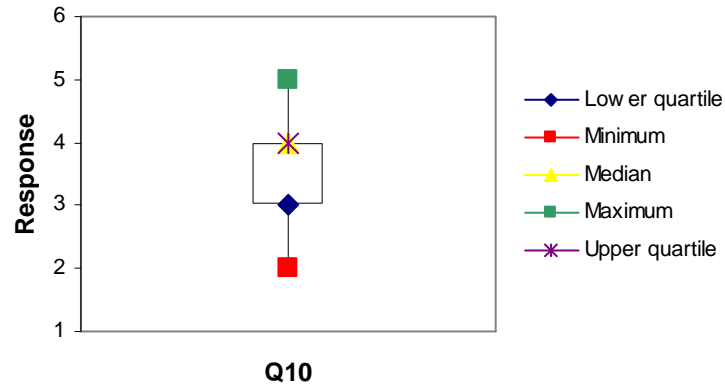


Figure 5.20 indicated that 52% of respondents replied that the frequency of communication regarding risks and benefits between the project and its external stakeholders occurred often, while 15% replied that communication rarely occurred. The most frequent response was “Often”. Figure 5.21 illustrated that the distribution of responses was negatively skewed with a longer tail towards the lower range of values.

The area of concern for question 14 was the responses around the benefits of managing and involving external stakeholders. A percentage component bar chart was therefore drawn (Figure 5.22), and a box plot constructed showing the distribution of values (Figure 5.23).

Figure 5.22: Benefits of managing and involving external stakeholders

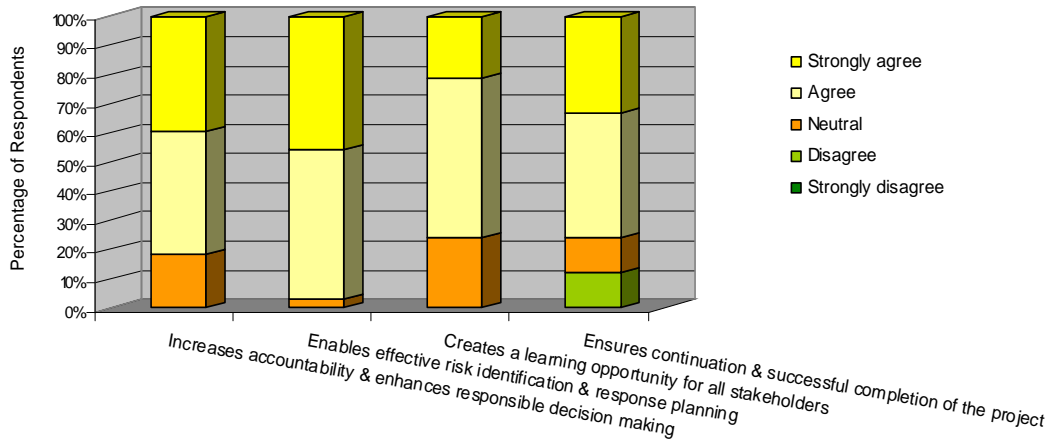


Figure 5.23: Box plot of the benefits of managing and involving external stakeholders

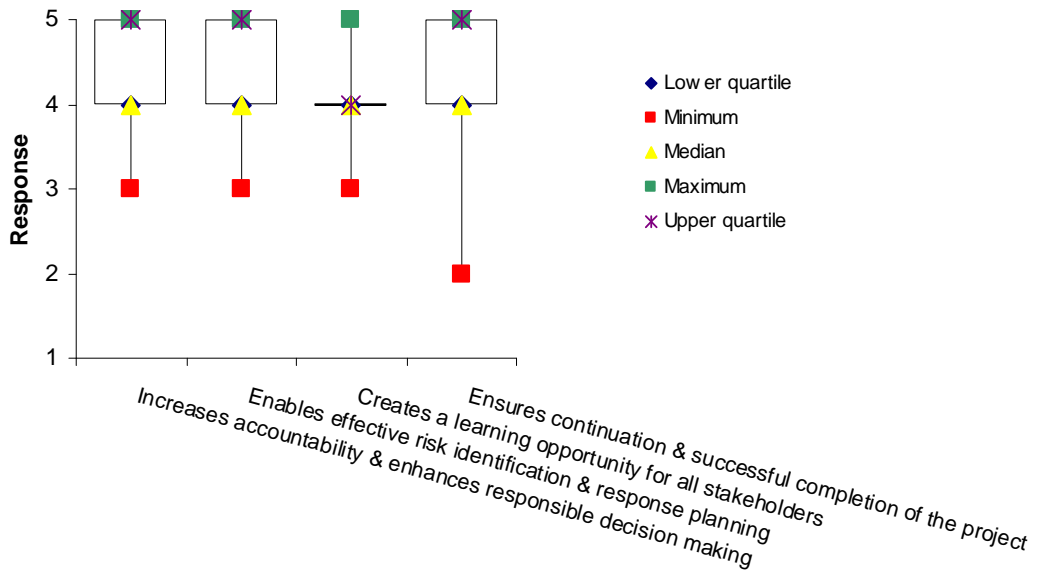


Figure 5.22 indicated that the highest ranked benefit of managing and involving external stakeholders was that it enabled effective risk

identification and response planning (97% of respondents agreed). Figure 5.23 indicated a positive skewness in the responses received.

For question 16 the area of concern involved the responses around the level of effort applied to motivate external stakeholders to accomplish project objectives. A pie chart was drawn summarising the proportion of the responses received (Figure 5.24), and a box plot constructed (Figure 5.25).

Figure 5.24: Level of effort applied to motivate external stakeholders

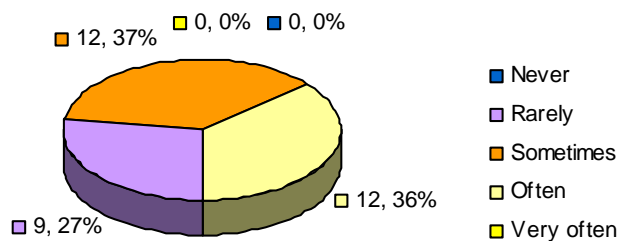


Figure 5.25: Box plot of effort applied to motivate external stakeholders

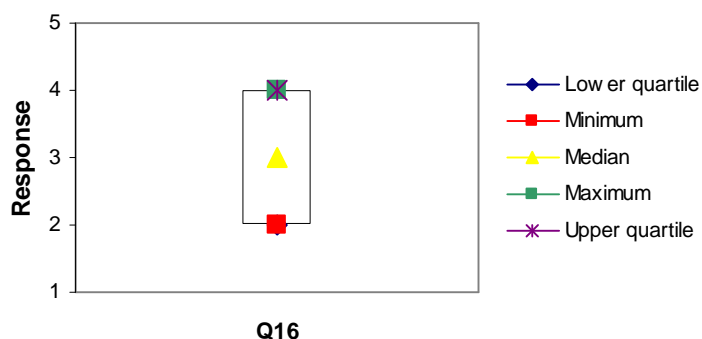


Figure 5.24 indicated that 37% of respondents replied that effort was sometimes applied to motivate external stakeholders to accomplish

project objectives, while 36% replied that this often occurred, and 27% of respondents replied that it rarely occurred. The most frequent response was “Sometimes”. From Figure 5.25 it is evident that the distribution of responses was symmetric.

The aspect of concern for question 17 was the responses around which dimensions of stakeholder management required the most development to improve future stakeholder management on projects, which provided an answer to the third and final research question. A percentage component bar chart was drawn (Figure 5.26), Figure 5.27 drawn to illustrate the distribution of responses, and Table 5.3 constructed to highlight the results of the statistical tests.

Figure 5.26: Areas requiring the most development

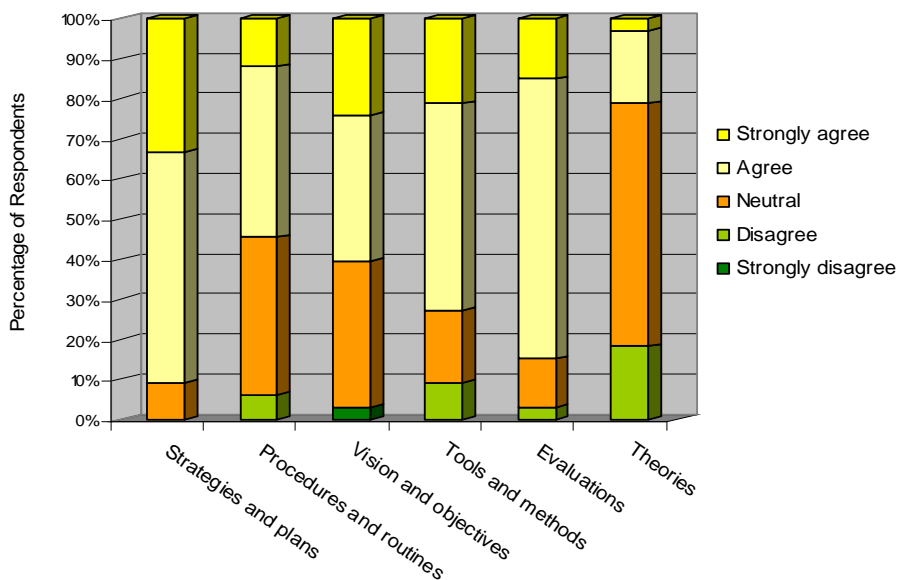


Figure 5.27: Box plot of areas requiring the most development

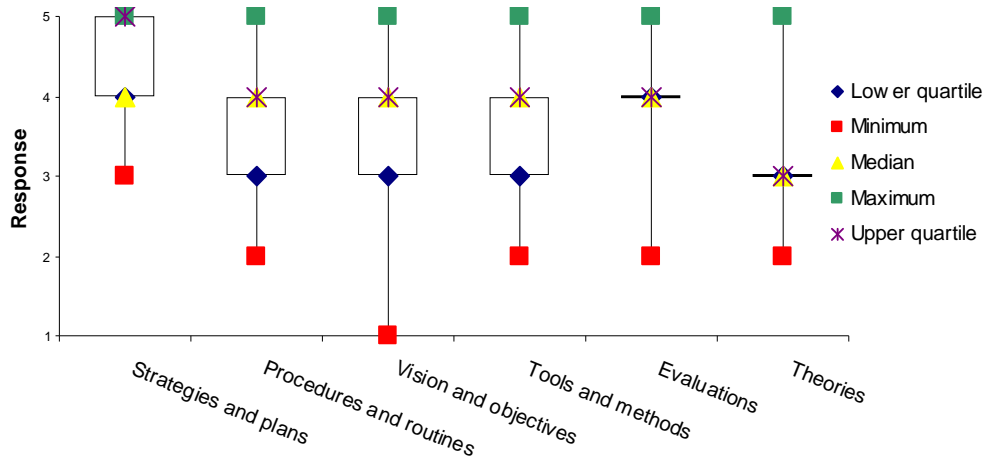


Table 5.3: Analysis of dimensions requiring the most development

Variable	Mean	Std. dev.	p-values				
			2	3	4	5	6
1 Strategies and plans	4.24	0.61	0.001	0.023	0.039	0.084	0.000
2 Procedures and routines	3.61	0.79		0.400	0.245	0.046	0.004
3 Vision and objectives	3.79	0.93			0.788	0.363	0.001
4 Tools and methods	3.85	0.87				0.526	0.000
5 Evaluations	3.97	0.64					0.000
6 Theories	3.06	0.70					

Note: If the p-value is < 0.05 (confidence coefficient of 95%), the null hypothesis is rejected.

Figure 5.26 indicated that the highest ranked dimensions of stakeholder management that required the most development was the areas of strategy and plans (91%); evaluations (85%); tools and methods (73%); vision and objectives (61%); followed by procedures and routines (55%). The lowest rated dimensions that required development was that of theories (21%). From Figure 5.27 it is evident that the distribution of responses was predominantly negatively skewed. Table 5.3 summarised the results of the statistical analysis regarding the dimensions requiring the most development.

5.5.4 Project Strategy and Stakeholders

The aspects of concern for questions 13 and 15 concerned the effectiveness of the stakeholder management strategy during the project, and the extent to which external stakeholder strategies were analysed relative to the project. Pie charts were therefore drawn (Figure 5.28 and 5.29), and box plots constructed showing the distribution of responses (Figure 5.30 and 5.31).

Figure 5.28: Effectiveness of stakeholder management strategy

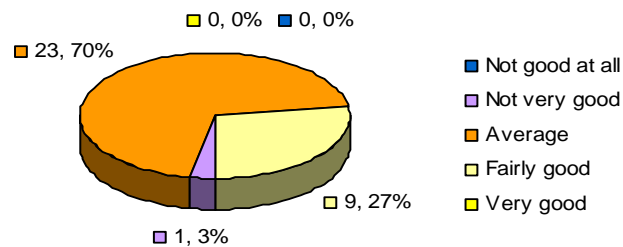


Figure 5.29: External stakeholder strategy relative to the project

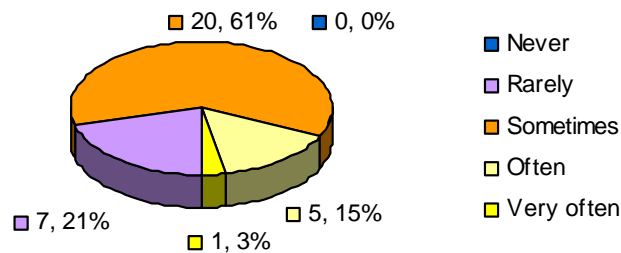


Figure 5.30: Box plot of effectiveness of stakeholder management strategy

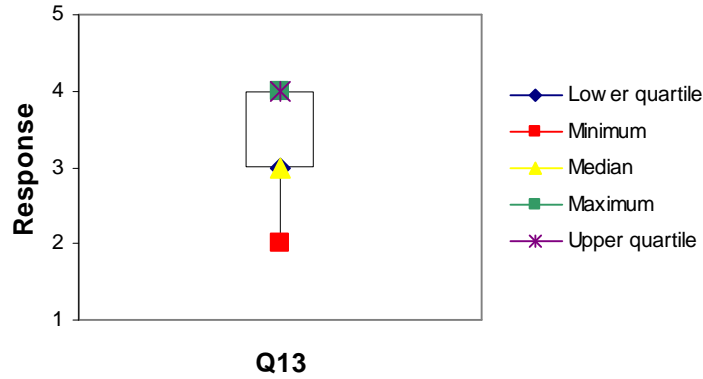


Figure 5.31: Box plot of external stakeholder strategy relative to the project

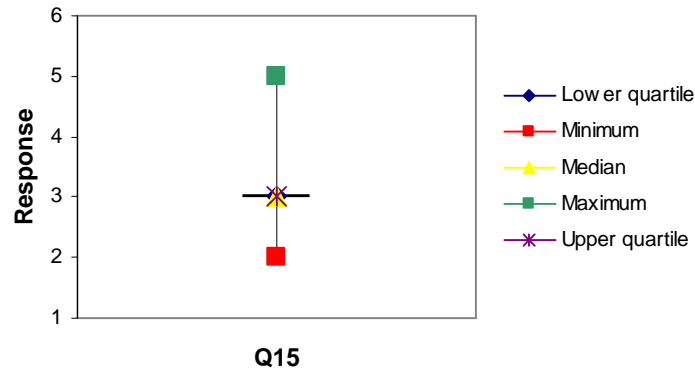


Figure 5.28 highlighted that 70% of the respondents rated the effectiveness of the stakeholder management strategy as average, while 27% rated the strategy as good during the project. Figure 5.29 highlighted that 61% of the respondents replied that external stakeholder strategies are sometimes analysed relative to the project, 21% replied that this rarely occurred, and 18% replied that this often occurred. The most frequent responses were “Average” and “Sometimes” for questions 13 and 15

respectively. Figures 5.30 and 5.31 indicated that the distribution of responses was positively skewed.

5.6 Summary

The results of the data analysis presented in this chapter can be summarised into the following main aspects:-

- Preliminary data analysis on the response rate revealed a completion rate of 41%, with no potential response bias and the possibility of missing data from the sample
- Analysis of survey reliability through the use of an internal consistency assessment yielded a Cronbach alpha of 0.81
- Exploratory data analysis described the characteristics of the sample in terms of proportion of responses received, respondent's roles, experience levels, and average project value
- Descriptive data analysis described and examined relationships in the following areas:-
 - Identification, classification, and importance of external project stakeholders
 - Level of impact of external project stakeholders
 - Development of project stakeholder management
 - Project strategy and its link with external stakeholders.

The following chapter analyses and discusses these findings in more detail.

6. DISCUSSION OF RESULTS

6.1 Introduction

This chapter discusses the results of the empirical data analysis presented in Chapter 5. This includes a discussion around the key aspects of the empirical data collection process; results obtained in relation to the identification, classification, and importance of external project stakeholders; results pertaining to the impact of project stakeholders; the development of project stakeholder management; and the relation between project strategy and external project stakeholders. This chapter concludes with a summary of the key discussion points.

6.2 Empirical Data Collection Process

Response Rate

The actual response rate of 41% is congruent with a low prediction for online response rates by Saunders *et al.* (2000). Those that did not respond either discontinued the process of answering the survey after starting, or decided at the outset not to participate in the survey.

Survey Reliability

According to Cortina (1993) most studies use an alpha value > 0.7 (viewed together with the number of items present in the test) as a positive indication of survey reliability. The calculated Cronbach alpha of 0.81 indicated a high degree of internal consistency associated with the

research instrument (questionnaire), further emphasising that the data measured a single construct rather than having a multidimensional structure.

Sample Characteristics

The target sample size for this research was 30. However, an actual sample size of 33 was achieved. The proportion of responses received correlated with the ratio of employee count in each organisation except for Organisation D where no responses were received despite several attempts to elicit feedback. The result of which would not have significantly influenced the results since the target response rate required from Organisation D was 1 response.

The respondent types within the sample were well distributed except for the project controller and engineering manager groups which cumulatively accounted for 12% of the sample. There is no reason to believe that the results of the survey would have been substantially affected had this proportion been higher.

In general, the respondents exhibited moderate to high experience levels with the majority of respondents having worked on between four to seven projects with an average project value above R100 million. These moderate to high experience levels offers depth to the findings of this research within this sector.

6.3 Identification, Classification, and Importance of Stakeholders

A profile regarding the identification and classification of external stakeholders was presented in section 5.5.1. It was interesting to note that the majority of respondents agreed that formalised systems for identifying external project stakeholders existed in their organisations. In contrast approximately half of the respondents noted that formalised systems for classifying external project stakeholders did not exist.

The theory reviewed (Cleland, 1999; Achterkamp and Vos, 2007) clearly indicated that managing stakeholders involved both an identification and classification step to determine the nature of a stakeholder group's interest. As such, the results of this research revealed that only part of the process was being followed. It was therefore evident that the classification of external stakeholders, relative to the identification step, required considerably more development and focus in order to improve the overall management of stakeholders.

Boonstra's (2006) stakeholder typology model, for example, used for classifying stakeholders according to power, legitimacy, and urgency provides a starting point which could be further adapted and refined for use within these organisations to supplement the identification step of the process.

6.3.1 Research Question and Hypothesis 1

The first research question posed was “Which stakeholders are the most important in the project environment?” while the null hypothesis stated that all project stakeholders are equally important and receive the same emphasis regarding stakeholder management.

To answer the first research question, the results of this research indicated that the three most important external stakeholders groups was contractors/suppliers; clients; and end users. From Table 5.1 it was evident that there were no significant differences in importance levels between these stakeholder groups. These three stakeholder groups should therefore be considered as being equally important from a stakeholder management perspective. As such, working with these stakeholders will strongly affect project success since clients initiate, define and finance the project and the end users determine the usefulness of the project results (Karlsen, 2002) while contractors/suppliers are largely responsible for delivering infrastructure which ultimately determines the quality of output.

From Table 5.1 it was also evident that these external stakeholder groups (contractors/suppliers, clients, and end users) were significantly more important than the other stakeholder groups. Consequently this proved the alternate hypothesis that differences existed regarding the importance of the various stakeholders and that not all stakeholders were equally important. These results are confirmed by the literature where Mitchell *et*

al. (1997) argued that higher priority and importance is given to a stakeholder if it is believed that there is a sense of legitimacy to the claim which requires urgent action, and if the stakeholder can seek to influence through the use of power.

It was interesting to note that amongst the least important external stakeholder groups was the press/media, against the backdrop of a sector which periodically receives negative publicity due to its link with environmental degradation and with sustainable development practices currently receiving widespread focus. There are potentially two plausible reasons for this result. Either the press/media were not considered as important relative to the impact of the other stakeholder groups on a project, or that this relatively lower importance ranking could have been the result of ineffective stakeholder management arising from the press/media not being correctly classified (as put forth by Mitchell *et al.*, 1997; Olander and Landin, 2005; Boonstra, 2006). The data analysis also showed that labour unions, financial institutions/insurance companies and third parties were amongst the least important stakeholder groups.

6.4 Impact of Project Stakeholders

A profile regarding the impact of external stakeholders was presented in section 5.5.2. The majority of respondents agreed that engaging stakeholders during the project life cycle was critical to project success. This indicated a high degree of awareness amongst respondents regarding the relationship between engaging project stakeholders as a

means to achieve project success, which is an underlying conclusion prevalent in the literature reviewed on project stakeholder management (Jergeas *et al.*, 2000; Bourne and Walker, 2005).

6.4.1 Research Question and Hypothesis 2

The second research question posed was “Which stakeholders cause the most uncertainty and problems for a project?” while the null hypothesis stated that all stakeholders impose the same amount of uncertainty and problems on the project.

To answer the second research question, the highest ranked external stakeholders who caused the most problems and uncertainty was contractors/suppliers; clients; and end users. From Table 5.2 it was evident that there were no significant difference in the problems and uncertainty caused between contractors/suppliers and clients. These two stakeholder groups should therefore be considered as being equally important regarding problems and uncertainty caused. These stakeholder groups are largely involved in, and play a critical role during the entire lifecycle of the project and are often party to scope misunderstanding and scope changes which negatively impact the project which also explains why these stakeholders were also rated as the most important (refer section 6.3.1).

An interesting observation was that these two external stakeholder groups caused significantly more problems and uncertainty than the other

stakeholder groups which proved the alternate hypothesis that differences exist regarding the level of uncertainty and problems caused, and that not all stakeholders impose the same amount of uncertainty and problems on the project. These results are confirmed by the literature where Karlsen (2002) argued that certain stakeholders can, depending on their individual perspective of the project under consideration, have a negative impact which would manifest through the emergence of problems and uncertainty for the project.

The press/media was again amongst the external stakeholder groups causing the least problems and uncertainty. This could be the result of the press/media not being in a position of power (as suggested by Mitchell *et al.*, 1997; Olander and Landin, 2005; Boonstra, 2006) to negatively influence the status of projects in this sample. The data also showed that labour unions, financial institutions/insurance companies and competitors caused minor problems and uncertainty for the project. These results are attributable to the relative conflict free labour activity in the chemical sector, the limited involvement by financial institutions during the project lifecycle following initial funding, and the lack of competitor involvement once the decision has been made to undertake the project.

6.5 Developing Project Stakeholder Management

A profile regarding the management of external stakeholders was presented in section 5.5.3. There was an absence of overwhelming evidence indicating that a formalised system for managing stakeholders

during the project life cycle existed (40% of respondents agreed and 33% disagreed). The result was similar when assessing whether stakeholder management was formally integrated during the project life cycle (46% of respondents were neutral and 12% disagreed). Holistically these research results indicated that stakeholder management was not being sufficiently emphasised and enforced during the project lifecycle as part of, or a dimension within, the overall management of the project when likened to, for example, the emphasis placed on managing the project schedule. These results are confirmed by the literature reviewed where Bourne and Walker (2005) alluded to the notion that stakeholder management is marginalised and suppressed due to increased pressure to complete projects according to “hard” deliverables (schedule, cost, and quality) at the detriment of “softer” relationship type issues.

When assessing the frequency of communication regarding risks and benefits between the project and its external stakeholders, the results from this research were mixed. Just over half (52%) of the respondents indicated that communication was occurring often to very often in frequency. However, a significant portion of the respondents (48%) indicated that communication occurred on an infrequent (ad-hoc) basis. In general, frequent and accurate communication cannot be overstressed and is critical for project success (Gray, 2001; Karlsen, 2002) and as such this area offers an opportunity for further improvement.

The results of this research revealed a high level of agreement amongst the majority of respondents regarding the various benefits associated with managing and involving external stakeholders. The highest ranked benefit (where 97% of the respondents agreed) was that managing and involving external stakeholders enabled effective risk identification and response planning. Karlsen (2002) put forth that the objectives of project stakeholder management included enabling a more concentrated and targeted risk management effort, and facilitating a focused approach to constructive working relations.

When assessing the effort that was applied to motivate external stakeholders to accomplish project objectives, research results indicated that effort was generally being made (27% of respondents replied that effort rarely was applied). However, more than two thirds of the respondents indicated that effort was applied on an infrequent basis to motivate external stakeholders. These observations indicate that external stakeholder motivation (Gray, 2001; Gallstedt, 2003; Thamhain, 2004) is not given considerable focus and remains an area which could be further developed and improved on into the future. This area can be leveraged by considering classical and contemporary motivational theories such as Maslow, Herzberg, and McClelland (Robins and Judge, 2007) which offer insight into the various elements that can be used to create an environment to motivate individuals leading to increased project performance (Gallstedt, 2003).

6.5.1 Research Question and Hypothesis 3

The third research question posed was “Which area/s of project stakeholder management requires the most development?” while the null hypothesis stated that all areas concerning stakeholder management require the same amount of development.

To answer the third research question, the three highest ranked areas of stakeholder management that required the most development was the areas of strategy and plans; evaluations; and tools and methods with the lowest rated area being that of theories. From Table 5.3 it was evident that there were no significant difference between the areas of strategies and plans, and evaluations. As a result these two areas or dimensions should be considered as being equally important for development from a stakeholder management perspective. These results point to a need by respondents for a tactical approach to stakeholder management, an approach practical in nature which clearly illustrates mechanisms to manage stakeholders and where the effectiveness of these mechanisms can be easily measured.

From Table 5.3 it was evident that significant differences existed between the areas of strategies/plans and evaluations, and the other areas which proved the alternate hypothesis that specific areas will require more development to enhance project stakeholder management.

Interestingly, the least important (or lowest rated) area was the development of new theories. This observation is aligned with the findings of Jergeas et al. (2000) and the conclusion made by Karlsen (2002) that the need remains for practical processes that help identify stakeholders, and makes their interests visible so that negative impacts on the project can be avoided.

6.6 Project Strategy and Stakeholders

The assessment of the extent to which external stakeholder strategies are analysed relative to the project revealed that the majority of respondents replied that external stakeholder strategies are sometimes analysed relative to the project. This remains an area for further development and should be integrated into formal project management practice since understanding the balance of power implicit in the relationship between the stakeholders and the project (Frooman, 1999), and the strategy that stakeholders can pursue allows proactive response planning by the project which can only benefit the project in the long run (Artto *et al.*, 2008).

The overall assessment of the effectiveness of the stakeholder management strategy employed was linked to the objectives of this research. The research results revealed that the majority of respondents rated the effectiveness of the stakeholder management strategy as average, with slightly more than a quarter of the respondents rating the strategy as good during the project. To effect improvements in project

performance and project success the areas identified for development in the previous sections are applicable.

6.7 Summary

The most important external stakeholders groups identified were contractors/suppliers; clients; and end users with these stakeholders also causing the most problems and uncertainty for the project due to their high levels of involvement and criticality of roles during the project lifecycle. The dimensions of stakeholder management that required the most development was strategy and plans; evaluations; and tools and methods. These dimensions pointed to a need for a tactical approach to stakeholder management.

Effective stakeholder management commences with and includes the identification and classification of stakeholders. It was evident from the research that the identification of external stakeholders was occurring but there was a lack of formalised systems for classifying external project stakeholders, consequently highlighting that only part of the process was being followed.

There were high levels of awareness regarding the benefits of engaging project stakeholders as a means to achieve project success. The most significant benefit associated with managing and involving external stakeholders was that it enabled effective risk identification and response planning. Related to this concept was the finding that communication

required further development due to the absence of frequent communication regarding risks and benefits between the project and its external stakeholders.

It was evident from the research results that motivating external stakeholders to accomplish project objectives, and analysing external stakeholder strategies relative to the project was not given considerable focus. By developing and improving these areas into the future a more proactive based approach to response planning by the project can be cultivated.

There was an absence of evidence indicating that a formalised system for managing stakeholders during the project life cycle existed; and that stakeholder management was formally integrated into the project life cycle. Holistically, these results indicated that stakeholder management was not sufficiently emphasised during the project with the research results supporting that stakeholder management strategies were generally average in terms of their effectiveness during the project lifecycle.

The key points discussed in this chapter have met and addressed the research objectives outlined initially for this research in Chapter 1. The following chapter offers final conclusions, recommendations, and areas for future research.

7. CONCLUSION AND RECOMMENDATIONS

7.1 Introduction

The discussion of the empirical data analysis presented in Chapter 6 was based on the main research problem as outlined in Chapter 1, and the related research questions and hypotheses as outlined in Chapter 3 within the context of the literature presented in Chapter 2. This chapter highlights the key findings of this research and includes recommendations and suggests areas for future research.

7.2 Main Research Problem

The main research problem investigated within the Chemical sector (in the geographic region of Sasolburg in the Free State province of South Africa) was to distinguish between which external project stakeholders are more important than others in order to facilitate a focussed approach to stakeholder management; understand which stakeholders posed a higher risk owing to the uncertainty and problems that they could impose onto the project; and place more emphasis on project stakeholder management by focusing on specific areas for development.

The research problem was framed within the context where the relationship between a project and the management of its stakeholders is central to the success of the project, and where stakeholder management is currently marginalised and suppressed due to the traditional focus on the project drivers of cost, schedule and quality.

Research Question and Hypothesis 1

The first research question posed was “Which stakeholders are the most important in the project environment?” while the null hypothesis stated that all project stakeholders are equally important and receive the same emphasis regarding stakeholder management.

The key findings from the empirical research were:-

- The three most important external stakeholders groups were contractors/suppliers; clients; and end users with no significant differences in importance levels between these stakeholder groups
- These external stakeholder groups (contractors/suppliers, clients, and end users) were significantly more important than the other stakeholder groups proving the alternate hypothesis that differences existed regarding the importance of the various stakeholders and that not all stakeholders were equally important.

The literature review presented in Chapter 2, section 2.3 and 2.4, also provided a non-empirical answer to the hypothesis which supported the results from the empirical research. In summary, it was evident from the literature that frameworks existed to identify and classify various external stakeholders to determine their individual influence which consequently determined each stakeholder’s importance.

Research Question and Hypothesis 2

The second research question posed was “Which stakeholders cause the most uncertainty and problems for a project?” while the null hypothesis stated that all stakeholders impose the same amount of uncertainty and problems on the project.

The key findings from the empirical research were:-

- The external stakeholders who caused the most problems and uncertainty were contractors/suppliers; clients; and end users with no significant difference in the problems and uncertainty caused between contractors/suppliers and clients
- The contractors/suppliers and clients stakeholder groups caused significantly more problems and uncertainty than the other stakeholders proving the alternate hypothesis that differences exist regarding the level of uncertainty and problems caused, and that not all stakeholders impose the same amount of uncertainty and problems on the project.

As was the case for the first research hypothesis, the literature review presented in Chapter 2, section 2.5, also provided a non-empirical answer to the hypothesis which supported the results from the empirical research. In summary, it was evident from the literature that depending on the perspective of the external stakeholders towards the project, their impact could be negative in nature.

Research Question and Hypothesis 3

The third research question posed was “Which area/s of project stakeholder management requires the most development?” while the null hypothesis stated that all areas concerning stakeholder management require the same amount of development.

The key findings from the empirical research were:-

- The areas of stakeholder management that required the most development was the areas of strategy and plans; evaluations; and tools and methods with no significant difference between the areas of strategies and plans, and evaluations
- Significant differences existed in development needs between the areas of strategies/plans and evaluations, and the other areas proving the alternate hypothesis that specific areas required more development to enhance project stakeholder management.

Answering the Research Problem

In summary, the following key points answer the research problem presented. Contractors/suppliers; clients; and end user stakeholder groups are the most important and should form the basis for prioritisation, thus facilitating a more proactive focused approach by the project to managing relations with them. These stakeholder groups also posed the highest risk to projects owing to the uncertainty and problems that they could impose onto the project and therefore a more concentrated and

targeted risk management effort can be undertaken. The areas of strategy and plans; evaluations; and tools and methods required the most development and by focusing on these more emphasis on project stakeholder management can occur on a tactical level, resulting in improved project performance.

7.3 Recommendations

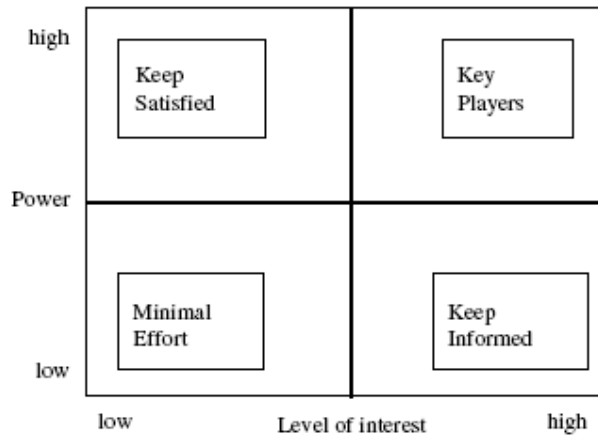
The objective of this section is to highlight recommendations, applicable to the scope of this research, to improve the effectiveness of stakeholder management on future projects. These recommendations are stated in order of priority and should form an integral part of the stakeholder management plan.

The stakeholder management process commences with identifying and classifying stakeholders. Since the classification part of the process was lacking it is recommended that more attention be placed on organising stakeholders according to their impact and influence. This analysis process must be conducted during the entire life cycle of the project.

A simple way to visualise stakeholders and their impact and influence would be to list all the stakeholders along one axis of a table and their significant interests along the other axis, and then progress to highlight the magnitude of their interest (Cleland, 1999) or alternately simply map the power/interest in the form of a matrix (refer Figure 7.1 as an example). Taking this concept further, a stakeholder interest intensity map can be developed by calculating the product of a stakeholder's interest-strength

and influence-impact resulting in an intensity index (Bourne and Walker, 2005) which can be used to prioritise between stakeholders.

Figure 7.1: Power/Interest matrix for stakeholder mapping (Olander and Landin, 2005)



To enable more efficient sorting of stakeholder management relations the dimensions of legitimacy and urgency can be included in addition to the power dimension (where legitimacy refers to the authenticity of a claim and urgency is time related). These three attributes when combined yield eight types of stakeholders (Appendix E) depending on which stakeholder displays which attribute (Mitchell *et al.*, 1997; Boonstra, 2006). By classifying stakeholders according to these eight types, the resulting individual stakeholder typology can allow the project to select a specific and targeted relationship management strategy where resources can be appropriately applied.

The three most important external stakeholders groups and who caused the most problems and uncertainty were contractors/suppliers; clients;

and end users. These groups should therefore receive immediate priority and focus over other stakeholder groups. Special attention is required in terms of understanding their interests and expectations and responding in a manner that promotes alignment to ensure a successful project. Importantly, stakeholder management will not work when there is a lack of common goals and when stakeholders perceive the relationship as insincere. Therefore, part of the process must include regular forums to gather the necessary information or assess stakeholder viewpoints. The communication channels utilised must be bi-directional in nature, with an emphasis on encouraging dialogue rather than to simply inform stakeholders on progress. Further, there must be a resultant action plan that takes cognisance of, and integrates, stakeholder input with a feedback loop clearly highlighting that this integration has been completed. This builds trust and indicates willingness on the part of the project to achieve mutual benefit and can positively develop to the extent where stakeholders are viewed as partners. At this juncture, more progressive thinking can occur where stakeholders could be empowered by the project to take responsibility for managing certain decisions.

The dimensions of stakeholder management that required the most development were strategy and plans; evaluations; and tools and methods. These dimensions related to both assessing the impact of stakeholders on the project; and evaluating the effectiveness of the stakeholder management process. The former is related to the identification and classification processes, for which the previous

mentioned recommendations are applicable. Embracing a tactical approach to stakeholder management the latter can be evaluated through implementing customer/stakeholder satisfaction surveys, meetings and communication effectiveness evaluation forms, tracking and analysing the turnaround time for outstanding issues and informally through listening, observing and conversing with the relevant parties.

More emphasis on communication must occur. It is recommended that a communication plan is developed that manages the distribution and level of project information to the relevant stakeholders. Specifically, the communication plan should include more frequent communication regarding risks and benefits between the project and its external stakeholders. In addition to face to face communication, delivery could occur through channels like e-mail, and notifications by means of project web pages which would facilitate response planning and risk management.

Motivating external stakeholders to accomplish project objectives is another area requiring further development which was not given considerable focus in the past. It is recommended that conventional avenues be extended to involve external stakeholders in events such as team building, rewards and recognition ceremonies, and involvement in the creation of lessons-learned. This will improve teamwork, energy levels, and increase commitment to achieving project goals.

A more proactive approach is needed in the longer term to analyse external stakeholder strategies more often relative to the project. The intent is to enable more proactive response planning by being able to anticipate how the goals of each stakeholder differ for the project, and understanding their expectations and viewpoints on specific issues. These analyses could simply take the form of using Maslow's Hierarchy of Needs (Stum, 2001) to identify stakeholder expectations, or analysing the project environment to identify any political, economic, social, and technological factors (PEST) that could affect the project, and then linking these factors back to the relevant external stakeholders to envisage specific stakeholder views.

7.4 Future Research Ideas

During this research the following areas have been identified for potential future research:-

- Relatively little research is available on assessing external project stakeholder strategies and integrating the results of this analysis into the project execution plan. Future research in this field would help project management to better tailor the project plan accordingly and prepare risk management efforts in advance
- Further research is needed to explore the concept of improving project stakeholder management in the areas of strategy and plans; and evaluations. Future research would be beneficial in

proposing tactical approaches to manage stakeholders and including appropriate indexes to measure the effectiveness thereof

- Further research is needed to examine and evaluate project stakeholder management across sectors in South Africa. This research would be valuable in allowing comparisons to be made across sectors, and to determine if and how project stakeholder management differs across sectors
- Relatively little research on the Chemical sector in South Africa has been conducted recently. Future research would be useful for understanding the current profile of the sector and the development that the sector has undergone in the last decade.

7.5 Conclusion

This research has provided practical insights into the process of project stakeholder management. The results of this research can be of immense use to organisations within the research scope. Organisations should focus more on managing relations with external stakeholders with the research providing an indication of which stakeholders to concentrate efforts on to facilitate a focussed approach, and enable more effective response planning and risk management. To develop project stakeholder management there is a need for a tactical approach which is practical in nature and which clearly illustrates mechanisms to manage stakeholders and where the effectiveness of these mechanisms can be easily measured. Taking cognisance of and acting on the results of this research



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offers organisations the opportunity to improve project performance and the likelihood of project success.

8. REFERENCE LIST

Achterkamp, M.C. & Vos, J.F.J. (2007) Investigating the use of the stakeholder notion in project management literature, a meta-analysis. *International Journal of Project Management*, In Press, Corrected Proof.

Albright, S.C., Winston, W.L. & Zappe, C. (2006) *Data Analysis and Decision Making*, 3rd ed. USA: Thomson.

Arora, A. (1997) *Patents, licensing, and market structure in the chemical industry*. Research Policy 26, Carnegie Mellon University, USA: Pittsburgh.

Artto, K. & Wikstrom, K. (2005) What is Project Business? *International Journal of Project Management*, 23, 343-353.

Artto, K., Kujala, J., Dietrich, P. & Martinsuo, M. (2008) What is project strategy? *International Journal of Project Management*, 26, 4–12.

Barber, E. & Warne, J. (2005) Leadership in project management: from firefighter to firelighter, *Management Decision*, 43(7), 1032-1039.

Boddy, D. & Paton, R. (2004) Responding to competing narratives: lessons for project managers. *International Journal of Project Management*, 22, 225–33.

Boonstra, A. (2006) Interpreting an ERP-implementation project from a stakeholder next term perspective. *International Journal of Project Management*, 24, 38–52.

Bourne, L. & Walker, D.H.T. (2005) Visualising and mapping stakeholder influence. *Management Decision*, 43(5), 649-660.

Business Day (2008) Cutting-edge initiatives are crucial [Internet]. South Africa. Available from <http://www.businessday.co.za/Articles/TarkArticle.aspx?ID=2569447> (accessed 26 May 2008).

Cleland, D.I. (1999), *Project Management Strategic Design and Implementation*. Singapore: McGraw-Hill.

Cortina, J.M. (1993) What is coefficient alpha? an examination of theory and applications. *Journal of Applied Psychology*, 78(1), 98-104.

Creamer, T. (2006) Brand new multibillion-rand fuel-from-coal plant mooted [Internet]. South Africa. Available from http://www.engineeringnews.co.za/article.php?a_id=96600 (accessed 07/02/2008).

Creamer, T. (2008) Committee to advise on chemicals sector implementation strategy [Internet]. South Africa. Available from

http://www.engineeringnews.co.za/article.php?a_id=128207 (accessed 09/08/2008).

Datamonitor (2007) South Africa – Chemicals [Internet]. South Africa. Available from http://reports.manta.com/datamonitor/summary/0289-9867_ITM (accessed 27/06/2008).

El-Gohary, N.M., Osman, H. & El-Diraby, T.E. (2006) Stakeholder management for public private partnerships. *International Journal of Project Management*, 24, 595–604.

Freeman, R.E. (1984) *Strategic management, a stakeholder approach*. Boston: Pitman.

Frooman, J. (1999) Stakeholder Influence Strategies. *Academy of Management Review*, 24(2), 191-205.

Gallstedt, M. (2003) Working conditions in projects: perceptions of stress and motivation among project team members and project managers. *International Journal of Project Management*, 21, 449–455

Gray, R.J. (2001) Organisational climate and project success. *International Journal of Project Management*, 19, 103-109.

Groundwork (2003) National Report on Community-based Air Pollution Monitoring in South Africa: Air Pollution in Selected Industrial Areas in South Africa, 2000 – 2002 [Internet]. South Africa. Available from <http://www.groundwork.org.za/AirQuality/AirMonitoringReport2003.pdf> (accessed 02/08/2008).

Grundy, T. (1998) Strategy implementation and project management. *International Journal of Project Management*, 16, 43-50.

Guisinger, A. & Ghorashi, B. (2004) Agile manufacturing practices in the specialty chemical industry. *International Journal of Operations and Production Management*, 24(6), 625-635.

Jergeas, G.F., Williamson, E., Skulmoski, G.J. & Thomas, J.L. (2000) Stakeholder management on construction projects. *AACE International Transaction*, 12.1-12.6.

JSE Securities Exchange (2008) Share Sector Listing [Internet]. South Africa. Available from <http://www.sharenet.co.za/listall.phtml~s=1357> (accessed 04/08/2008).

Karbochem (2008) Company Information [Internet]. South Africa. Available from <http://www.latex-sa.co.za/kbchome.asp> (accessed 05/02/2008).

Karlsen, J.T. (2002) Project stakeholder management. *Engineering Management Journal*, 14(4), 19-24.

Kolltveit, B.J. & Grønhaug, K. (2004) The importance of the early phase: the case of construction and building projects. *International Journal of Project Management*, 22, 545–551.

Macher, J.T. & Mowery, D.C. (2004) Vertical specialisation and industry structure in high technology industries. *Advances in Strategic Management*, 21, 317-355.

Meredith, J.R. & Mantel, S.J. (2006) *Project Management A Managerial Approach*. 6th ed. Asia: John Wiley & Sons.

Mitchell, R.K., Agle, B.R. & Wood, D.J. (1997) Toward a theory of stakeholder identification and salience: defining the principle of who and what really counts. *Academy of Management Review*, 22(4), 853–886.

Olander, S. & Landin, A. (2005) Evaluation of stakeholder influence in the implementation of construction projects. *International Journal of Project Management*, 23, 321–328.

Olander, S. (2007) Stakeholder impact analysis in construction project management. *Construction Management and Economics*, 25(3), 277–287.

Omnia (2008) Company Information [Internet]. South Africa. Available from <http://www.omnia.co.za/> (accessed 05/02/2008).

PMBOK Guide (2004) *A guide to the project management body of knowledge*. 3rd ed. Pennsylvania: Project Management Institute.

Robbins, S.P. & Judge, T.A. (2007) *Organizational Behaviour*. 12th ed. New Jersey: Pearson Prentice Hall.

Safripol (2008) Company Information [Internet]. South Africa. Available from http://www.safripol.com/about_who.html (accessed 04/02/2008).

Sasol (2008) Sasol Facts [Internet]. South Africa. Available from http://www.sasol.com/sasol_internet/downloads/Sasol_Facts2008_121187013_0139.pdf (accessed 04/02/2008).

Saunders, M., Lewis, P. & Thornhill, A. (2000) *Research Methods for Business Students*. 2nd ed. England: Pearson Education Limited.

Simon, C.D. & Sohal, A.S. (1995) The changing strategic vision of South African manufacturing: the case of the chemical industry. *Industrial Management and Data Systems*, 95(8), 14-20.

South African Government Information (2006) Accelerated and Shared Growth Initiative for South Africa 2006 Annual Report [Internet]. South Africa. Available

from http://www.info.gov.za/asgisa/ASGISA_Annual_Report.pdf (accessed 29/01/2008).

South African Government Information (2008) Town Information: Sasolburg [Internet]. South Africa. Available from http://www.nfsdc.co.za/tourism/towninfo_sasolburg.html (accessed 04/08/2008).

Srivannaboon, S. & Milosevic, D.Z. (2006) A two-way influence between business strategy and project management. *International Journal of Project Management*, 24, 493–505.

Stum, D.L. (2001) Maslow revisited: building the employee commitment pyramid. *Strategy & Leadership*, 29(4), 4-9.

Sutterfield, J.S., Friday-Stroud, S.S. & Blackwella, S.L.. (2006) A case study of project and stakeholder management failures: lessons learned. *Project Management Journal*, 37(5), 26-35.

Thamhain, H.J. (2004) Linkages of project environment to performance: lessons for team leadership, *International Journal of Project Management*, 22, 533–544.

The Department of Trade and Industry (2006) The Chemical Industry Sector [Internet]. South Africa. Available from <http://www.thedti.gov.za/publications/chemicals.htm> (accessed 04/02/2008).

Tobin, P.K.J. (2006) *The use of stories and storytelling as knowledge sharing practices: a case study in the South African mining industry*. Unpublished doctoral thesis. Pretoria: University of Pretoria. Available from <http://upetd.up.ac.za/thesis/available/etd-07302006-065725> (accessed 07/08/2008).

Zikmund, W.G. (2003) *Business Research Methods*. 7th ed. USA: Thomson.



9. APPENDICES

APPENDIX A: Profile of Chemical Industry in Sasolburg, Free State

Sasolburg is recognized as a region housing major chemical industry in South Africa (Groundwork, 2003; South African Government Information, 2008). The town came into being through the construction of an oil-from-coal plant by the Sasol Corporation in 1952. The oil-from-coal process provided a stimulus to the chemical industry and attracted other chemical companies to the region due to the availability of feedstock. These companies included Karbochem and AECI (now Sasol Polymers). Currently Sasol is the leading chemical company in the region (Groundwork, 2003).

A brief profile of the chemical companies currently situated in Sasolburg follows:-

- *Sasol Chemical Industries (SCI)*: SCI comprises of a number of chemical companies including Sasol Nitro, Sasol Polymers, Sasol Solvents, and Sasol Wax. Sasol Nitro produces ammonia, nitric acid, explosives, fertilisers, sulphuric acid, phosphates and blasting accessories. Sasol Polymers produces ethylene, propylene, polyethylene, polypropylene, polyvinyl chloride, chlor-alkali chemicals and mining reagents. The solvents business produces alcohols, ketones, esters, acrylic acid esters, ethyl acetate, and acetic acid. The wax business specialises in the supply of waxes, petroleum jellies and liquid paraffins (Sasol, 2008).

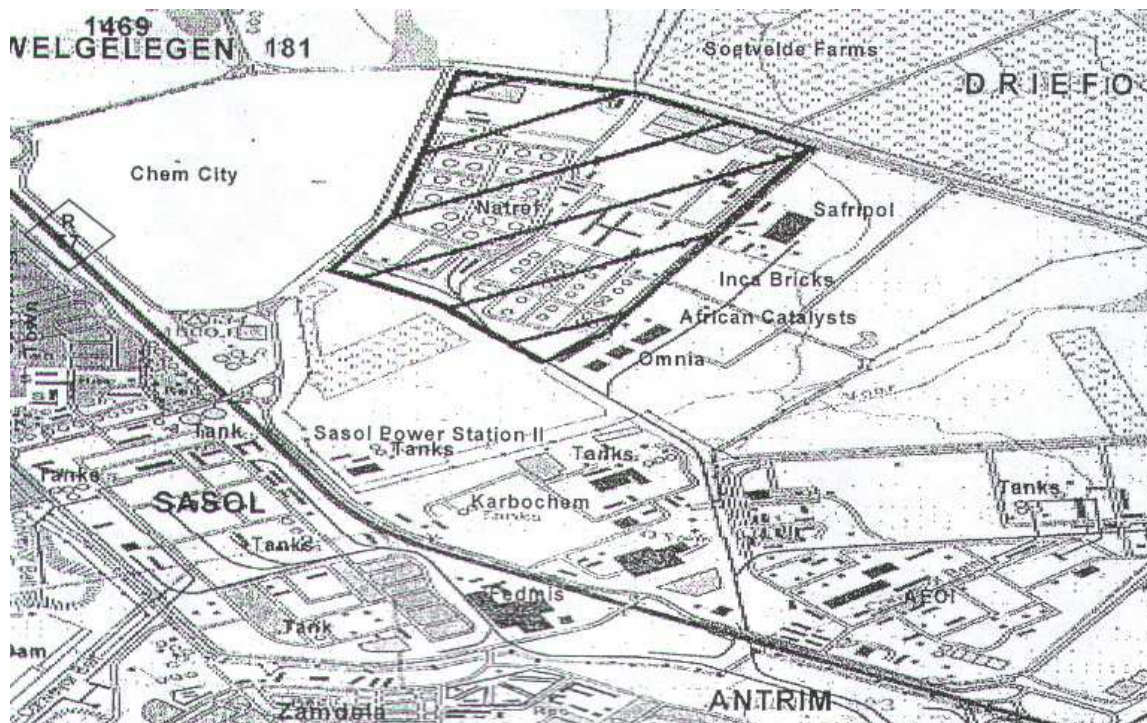
- *Safripol*: Previously owned by Dow Chemical Company, Safripol is now owned by local consortiums comprising ABSA Capital and Thebe Investment Corporation. Safripol manufactures polypropylene and high-density polyethylene (HDPE) for the plastics industry and is the only company that manufactures HDPE locally (Safripol, 2008).
- *Omnia Fertilizers*: Omnia Fertilizers is a subsidiary of Omnia Holdings Limited, and manufactures a wide range of chemicals which constitute fertilizer. These products include nitric acid, ammonium nitrate, liquid and granular calcium nitrate, and potassium sulphate (Omnia, 2008).
- *Karbochem*: Karbochem is a speciality chemical manufacturer for the rubber industry. The company's product range includes solution styrene butadiene rubber, polybutadiene rubber, and polyisoprene which are used in tyre, industrial and sporting merchandise manufacture (Karbochem, 2008).



APPENDIX B: Map of Sasolburg's Industrial Area

Figure A1: Map of Sasolburg's Industrial Area

(Source: <http://www.groundwork.org.za/AirQuality/AirMonitoringReport2003.pdf>)





APPENDIX C: Questionnaire

The purpose of this research is to investigate the impact and management of external project stakeholders on projects. This information is required for academic purposes only and can help improve the success of projects by understanding the criticality, and impact that external stakeholders can have on a project.

Please note that your responses will be kept strictly confidential and no respondent will be identified to any other person. If further use of this data is required, subsequent consent to this effect will be requested. If further clarification is required I can be contacted on 0836512187 or at anban.moodley@sasol.com

Please tick the adjacent box to indicate your consent to participate

Q.1 Which of the following best describes your role in a project?

Q.2 Years of experience
 0-5 6-10 11-20 more than 20 Unanswered

Q.3 Total number of projects worked on in last 5 years
 0-3 4-7 8-12 more than 12 Unanswered

Q.4 Average value of projects worked on, ZAR
 Less than 10 million 11 to 50 million 51 to 100 million 101 to 500 million More than 500 million Unanswered

Q.5 To what extent do you agree with the statement that "Engaging external stakeholders during the life cycle of a project is key to project success?"

Q.6 To what extent do you agree that your organisation has a formalised system for identifying external project stakeholders during a project?

Q.7 To what extent do you agree that your organisation has a formalised system for classifying external project stakeholders during a project? (e.g. by power, urgency etc.)

Q.8 To what extent do you agree that your organisation has a formalised system for managing (planning, organising, leading, controlling) external project stakeholders during a project?

Q.9 Please rate the importance of the following external stakeholders on their bearing towards a project
 Scale: 1 - Not at all important
 2 - Not so important
 3 - Average importance
 4 - Fairly important
 5 - Very important

Financial institutions/ Insurance companies	<input type="text"/>	End users	<input type="text"/>
Contractors/suppliers	<input type="text"/>	Competitors	<input type="text"/>
Consultants/advisors	<input type="text"/>	Clients	<input type="text"/>
Controlling organisations	<input type="text"/>	Public authorities	<input type="text"/>
Third parties	<input type="text"/>	Press/media	<input type="text"/>
Line/base organisation	<input type="text"/>	Labour unions	<input type="text"/>

Q.10 How frequently does your organisation actively encourage two-way flow of information or communication about risks and benefits between the project and its external stakeholders?

Q.11 To what extent do you agree that your organisation formally integrates stakeholder management during the project life cycle?

Q.12 Please rate the impact of the following external stakeholders according to which of them caused the most problems and uncertainty for the project
 Scale: 1 - Never caused problems and uncertainty
 2 - Rarely caused problems and uncertainty
 3 - Sometimes caused problems and uncertainty
 4 - Often caused problems and uncertainty
 5 - Very often caused problems and uncertainty

Financial institutions/ Insurance companies	<input type="text"/>	End users	<input type="text"/>
Contractors/suppliers	<input type="text"/>	Competitors	<input type="text"/>
Consultants/advisors	<input type="text"/>	Clients	<input type="text"/>
Controlling organisations	<input type="text"/>	Public authorities	<input type="text"/>
Third parties	<input type="text"/>	Press/media	<input type="text"/>
Line/base organisation	<input type="text"/>	Labour unions	<input type="text"/>

Q.13 How effective has the stakeholder management strategy been during a project?

Q.14 Please rate the following benefits arising from managing stakeholder expectations and ensuring their active involvement in a project?
 Scale: 1 - Strongly disagree
 2 - Disagree
 3 - Neutral
 4 - Agree
 5 - Strongly agree

Increases accountability and enhances responsible decision making	<input type="text"/>
Enables effective risk identification and response planning	<input type="text"/>
Creates a learning opportunity for all stakeholders	<input type="text"/>
Ensures project continuation and successful completion of the project	<input type="text"/>

Q.15 To what extent does your organisation assess the strategy of external stakeholders relative to the project?

Q.16 To what extent does your organisation seek to motivate external stakeholders to accomplish project objectives?

Q.17 Please rate which of the following areas of stakeholder management require the most development in order to improve stakeholder management on future projects
 Scale: 1 - Strongly disagree
 2 - Disagree
 3 - Neutral
 4 - Agree
 5 - Strongly agree

Strategies and plans	<input type="text"/>	Tools and methods	<input type="text"/>
Procedures and routines	<input type="text"/>	Evaluations	<input type="text"/>
Vision and objectives	<input type="text"/>	Theories	<input type="text"/>

Definitions included with Questionnaire

Contractors: a person who undertakes a contract to provide materials and labour for a job (source: www.askoxford.com/concise_oed/)

Consultants: a person who provides expert advice professionally (source: www.askoxford.com/concise_oed/)

Third party: a person or group besides the two primarily involved in a situation or dispute (source: www.askoxford.com/concise_oed/)

End user: the person who uses a particular product (source: www.askoxford.com/concise_oed/)

Client: a person using the services of a professional person or organisation (source: www.askoxford.com/concise_oed/)

Controlling organisation: organisation which ultimately manages and controls initiatives undertaken

Line organisation: business or industry structure with self-contained departments (source: www.businessdictionary.com/definition/)

Strategy: The planning and controlling of resources enabling efficient and effective use (source: www.businessdictionary.com/definition/)

Visions and objectives: Vision refers to an aspiration of what one wants to achieve while the objective is specific goals that must be achieved in lieu of the vision (source: www.businessdictionary.com/definition/)

Procedures and routines: refers to a sequence of activities to perform a task (source: www.businessdictionary.com/definition/)

Evaluations: refers to the analysis of activities to assess status (source: www.businessdictionary.com/definition/)



APPENDIX D: Test for Internal Consistency

Item Analysis Report

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Reliability Section

Variable	----- Item Values -----		----- If This Item is Omitted -----			
	Mean	Standard Deviation	Total Mean	Total Std.Dev.	Coef Alpha	Corr Total
C1	2.515152	1.349102	157.2727	12.9549	0.8096	-0.0870
C2	2	0.8291562	157.7879	12.58908	0.7897	0.3563
C3	2.060606	0.8992842	157.7273	12.43552	0.7848	0.4989
C4	3.666667	1.534329	156.1212	12.53185	0.7985	0.1874
C5	4.333333	0.7359801	155.4545	12.59487	0.7890	0.4012
C6	3.515152	0.939455	156.2727	12.73596	0.7963	0.1472
C7	2.727273	0.8758113	157.0606	12.9541	0.8031	-0.0866
C8	3.060606	0.8638357	156.7273	13.03666	0.8058	-0.1816
C9	3.424242	1.031695	156.3636	13.11206	0.8102	-0.2358
C10	4.787879	0.4846117	155	12.90591	0.7982	-0.0150
C11	4.121212	0.6963106	155.6667	12.88086	0.7989	0.0116
C12	3.545455	0.904534	156.2424	12.54998	0.7891	0.3651
C13	3.424242	0.7512616	156.3636	12.73484	0.7943	0.2022
C14	3.757576	0.5607084	156.0303	12.73157	0.7926	0.2944
C15	4.545455	0.7537783	155.2424	12.63435	0.7906	0.3368
C16	3.424242	1.090593	156.3636	12.44693	0.7877	0.3865
C17	4.848485	0.4416738	154.9394	12.81342	0.7947	0.1971
C18	4.393939	0.8638357	155.3939	12.47232	0.7858	0.4782
C19	3.545455	0.8692996	156.2424	12.60712	0.7908	0.3155
C20	3.363636	0.9623598	156.4242	12.5425	0.7896	0.3467
C21	3.424242	0.8302975	156.3636	13.12397	0.8083	-0.2899
C22	3.363636	0.7833495	156.4242	12.59968	0.7897	0.3670
C23	1.969697	0.8833476	157.8182	12.54356	0.7887	0.3830
C24	4.060606	0.6585683	155.7273	12.57048	0.7874	0.4928
C25	2.939394	0.9662878	156.8485	12.2936	0.7801	0.6121
C26	2.909091	1.0113	156.8788	12.40403	0.7850	0.4674
C27	2.818182	1.28585	156.9697	12.48871	0.7923	0.2799
C28	2.636364	0.8950622	157.1515	12.57011	0.7898	0.3467
C29	2.969697	1.262063	156.8182	12.12037	0.7777	0.5921
C30	2.333333	1.163687	157.4545	12.3847	0.7864	0.4120
C31	3.757576	0.8302975	156.0303	12.75119	0.7956	0.1572
C32	2.787879	0.8199686	157	12.65405	0.7920	0.2801
C33	2.030303	0.8833476	157.7576	12.56988	0.7896	0.3525
C34	2.30303	1.015038	157.4848	12.53276	0.7899	0.3345
C35	3.242424	0.5018904	156.5455	12.80891	0.7949	0.1781
C36	4.212121	0.73983	155.5758	12.60712	0.7895	0.3818
C37	4.424242	0.5607084	155.3636	12.67334	0.7904	0.3998
C38	3.969697	0.6839613	155.8182	12.61312	0.7892	0.4087
C39	3.969697	0.9837698	155.8182	12.5311	0.7894	0.3494
C40	3	0.7071068	156.7879	12.75431	0.7945	0.1906
C41	3.090909	0.8048151	156.697	12.95059	0.8023	-0.0842
C42	4.242424	0.6139169	155.5455	12.69865	0.7918	0.3192
C43	3.606061	0.7881701	156.1818	12.71921	0.7941	0.2100
C44	3.787879	0.9272801	156	12.59464	0.7911	0.3050
C45	3.848485	0.8703883	155.9394	12.84022	0.7992	0.0439
C46	3.969697	0.6366342	155.8182	12.59081	0.7880	0.4788
C47	3.060606	0.7044232	156.7273	12.73841	0.7940	0.2143
Total			159.7879	12.90774	0.7965	

Cronbach's Alpha 0.796485

Std. Cronbachs Alpha 0.806601

APPENDIX E: Stakeholder Classes (Olander, 2007, p. 279)

(1) Dormant stakeholders possess power to impose their will, but do not have any legitimate relationship or urgent claim. Their power remains unused.

(2) Discretionary stakeholders possess the attribute of legitimacy, but they have no power or urgent claim. There is no absolute pressure for managers to engage in an active relationship, although they may choose to do so.

(3) Demanding stakeholders possess an urgent claim, but have no power or legitimate relationship. This is bothersome, but does not warrant more than passing management attention.

(4) Dominant stakeholders are both powerful and legitimate. It seems clear that the expectations of any stakeholders perceived by managers to have power and legitimacy will matter.

(5) Dangerous stakeholders lack legitimacy, but possess power and urgency. They will be coercive and possibly violent, making the stakeholder 'dangerous'.

(6) Dependent stakeholders have urgent and legitimate claims, but possess no power. These stakeholders depend upon others for the power necessary to carry out their will.

(7) Definitive stakeholders are those that possess both power and legitimacy. They will already be members of an organization's dominant coalition. When such a stakeholder's claim is urgent, managers have a clear and immediate mandate to attend to and give priority to that claim.