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CORPORATE SUSTAINABILITY CONSCIOUSNESS: A CLIMATE CHANGE PERSPECTIVE

by

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Submitted in partial fulfilment of the requirements for the MCom in Financial Management Sciences in the Faculty of Economic and Management Sciences

UNIVERSITY OF PRETORIA

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JULY 2009

ACKNOWLEDGEMENTS

I would like to express my sincere gratitude to the following individuals for their assistance in the completion of this dissertation:

My supervisor Prof Gouws and my co-supervisor Prof Blignaut for their wisdom, insight and support.

My colleagues in the Department of Financial Management at the University of Pretoria for providing a sounding board and support system.

The participants in the case studies for generously giving of their time.

Finally my warmest thanks to my family: Fred, Lynne, Belinda and Darryl for your support and encouragement, and my husband Jason for his unwavering belief in me and for affording me the opportunity to pursue a new path.

Only when the last tree has been cut down,
Only when the last river has been poisoned,
Only when the last fish has been caught,
Only then will you find that money cannot be eaten.

Cree Indian Prophecy

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Climate change is increasingly acknowledged as one of the greatest threats facing humanity in the 21st century. Given the enormity of the potential impact of global warming, worldwide collective action from all sectors of society appears to be the only appropriate way to address the problem. Within the corporate sector companies appear to be responding to the threat through the introduction of climate change mitigation strategies. Understanding the motivations driving such action could provide insights into how best to engage companies to ensure a sustainable future.

The purpose of this study was to determine the motivation for corporate investment in sustainability projects, with a focus on the voluntary climate change mitigation actions of South African companies. The first phase of the study focused on conceptual research through a literature review which investigated sustainability in a corporate context with a view to understanding motivational drivers. The second phase of the study empirically tested the insights obtained from the literature.

The literature review led to the development of a proposed conceptual framework which illustrated proposed linkages between business and the natural environment. The key motivational drivers supporting these linkages appeared to be legitimacy concerns, the financial business case and moral responsibility.

The empirical phase took the form of an exploratory case study focused on six South African companies across three industries. An interpretive research process was

followed using pattern models to analyse the data. To enhance transparency and rigour, qualitative data analysis software was used in the analytical process.

Three key areas were investigated and the main findings were as follows:

- Overview of sustainability values:

  The sustainability values of the companies reflected top management commitment to environmental issues and a shift away from a purely technocentric view of the business relationship with the natural environment however, these sentiments were not necessarily translated into actions.

- Motivations for sustainability initiatives:

  As suggested by the proposed conceptual framework, company motivations were driven by legitimacy concerns, the financial business case and moral responsibility. In addition, the study revealed a number of sub-drivers which provided additional information regarding motivations.

- Impact of voluntary action on company value:

  From a value perspective there was limited disclosure regarding the financial implications of climate change mitigation, however there was general agreement that the financial impact of mitigation action would be either neutral or positive as current strategies focus predominantly on energy and operational efficiencies.

Therefore, while companies appear to be motivated by a range of factors, the key consideration in decisions taken focus predominantly on aspects linked to the current paradigm dominated by financial concerns. There is little evidence of an evolution of sustainability consciousness which could potentially lead to a new sustainable business paradigm. In light of these findings, it would appear that current solutions to climate change issues need to send financial signals to companies to ensure adoption of mitigation actions. Further work is required to understand what will drive a fundamental value shift in the way companies operate to ensure a sustainable future.

Key phrases:
Corporate sustainability consciousness
Sustainability values
Climate change

TABLE OF CONTENTS **PAGE**

LIST OF FIGURES **PAGE**

LIST OF TABLES **PAGE**

LIST OF GRAPHS **PAGE**

Chapter 1: Introduction

1 Overview of research area

"When we try to pick out anything by itself, we find it hitched to everything else in the Universe." (Muir, 1911:110)

The interconnectedness of economic, social and environmental factors first came to prominence in the late 20th century when the United Nations commissioned a report in response to the rapid deterioration of human and natural environments, and the resultant impact on economic and social development. The report indicated that the prior categorisation of economic, social and environmental issues as separate concerns was no longer valid, and their interconnectedness needed to be acknowledged to move to a more sustainable future (Brundtland, 1987:20).

The definition of sustainable development is often quoted in terms of this report. In essence the central theme of the definition is "development which meets the needs of the present without compromising the ability of future generations to meet their own needs." (Brundtland, 1987:54). The translation of sustainable development into a corporate context often focuses on the idea of the triple bottom line, which measures not only economic profit, but the overall impact that a business has in terms of economic, social and environmental issues (Wilsdon, 1999:4). While there is general agreement as to the role that business plays in an economic context, its responsibilities from a societal and environmental perspective are the subject of ongoing debate.

This debate, regarding whether companies need to be good corporate citizens and promote environmental stewardship, commenced with articles published in the 1950's and 1960's (Davis, 1960, Levitt, 1958). Much of the debate and the evolution of theory has been summarised in more recent literature (Cochran, 2007; Garriga & Melé, 2004; Kakabadse, Kakabadse & Rozuel, 2007; McWilliams, Siegel & Wright, 2006; Salzmann, Ionescu-Somers, & Steger, 2005). A review of these articles reveals that the question as to whether companies have a duty to society and the environment, above and beyond that of making profits, has been discussed and analysed from various angles and has led to the emergence of a number of theories but, seemingly, no clear answer.

The emergence of the implications of climate change, in a business environment context, has provided further impetuous to this debate. The issue of corporate

sustainability, from the perspective of potential climate change impacts, is receiving renewed attention from investors and stakeholders (Carbon Trust, 2004; Goldman Sachs, 2005; Hart, 1997; Innovest, 2007; Kolk & Pinkse, 2004; Llewellyn, 2007; Woods & Wilder, 2005).

The threat posed by climate change has resulted in a worldwide collaborative effort to curb global warming. In 1997 the United Nations Framework Convention on Climate Change (UNFCC) adopted the Kyoto Protocol (Protocol). The Protocol established legally binding targets for greenhouse gas (GHG) emission reductions by those countries that ratified the Protocol (United Nations, 1997). The ratifying parties were predominantly developed countries, commonly referred to as Annex I parties. While the Protocol mandated the response required from developed nations, developing nations, and nations that did not ratify the Protocol were not subject to emissions reduction targets and caps. Despite the fact that these nations were not required to reduce emissions, a voluntary market emerged where various parties, including companies, undertook a range of initiatives to mitigate and offset climate change impacts (Carbon Trust, 2006a:6).

2 Problem area and rationale for the study

Climate change is increasingly acknowledged as one of the greatest threats of the 21st century. Given the enormity of the potential impact of global warming, worldwide collective action appears to be the only effective way to address the problem. Action is therefore required at a government, corporate and individual level. While certain companies appear to be responding to the threat through the introduction of climate change mitigation strategies, the setting of emission targets and goals of carbon neutrality, others have yet to take action. Understanding the motivations driving such action or inaction may provide insights into how best to engage companies to ensure a sustainable future.

The problem situation identified in terms of this study is therefore the apparent lack of understanding of the motivations and consciousness of companies investing in sustainability initiatives, with specific reference to voluntary climate change mitigation actions. Compounding this problem is the absence of parameters to measure the financial and non-financial consequences of such investment, which ultimately determines the impact on the value of the company making the investment.

The purpose of this study is to determine the motivation for corporate investment in sustainability projects, with a specific focus on voluntary climate change mitigation actions in South Africa, and the impact that such investment has on the value of the company taking such actions.

It is therefore the intention that this study provides answers to three main questions:

a) What are the sustainability values of South African companies and how are these translated in terms of their policies and practices?

b) What motivates companies to invest in sustainability initiatives, such as voluntary climate change mitigation projects in South Africa?

c) Does investment in voluntary climate change mitigation actions impact on the value of the company making the investment?

It is anticipated that a better understanding of the motivations driving companies to invest in voluntary climate change mitigation initiatives will be beneficial to those designing, implementing and managing climate change mitigation projects and those developing policies and procedures for climate change mitigation in a South African context as it will allow them to tailor the projects and policies to align with these motivations.

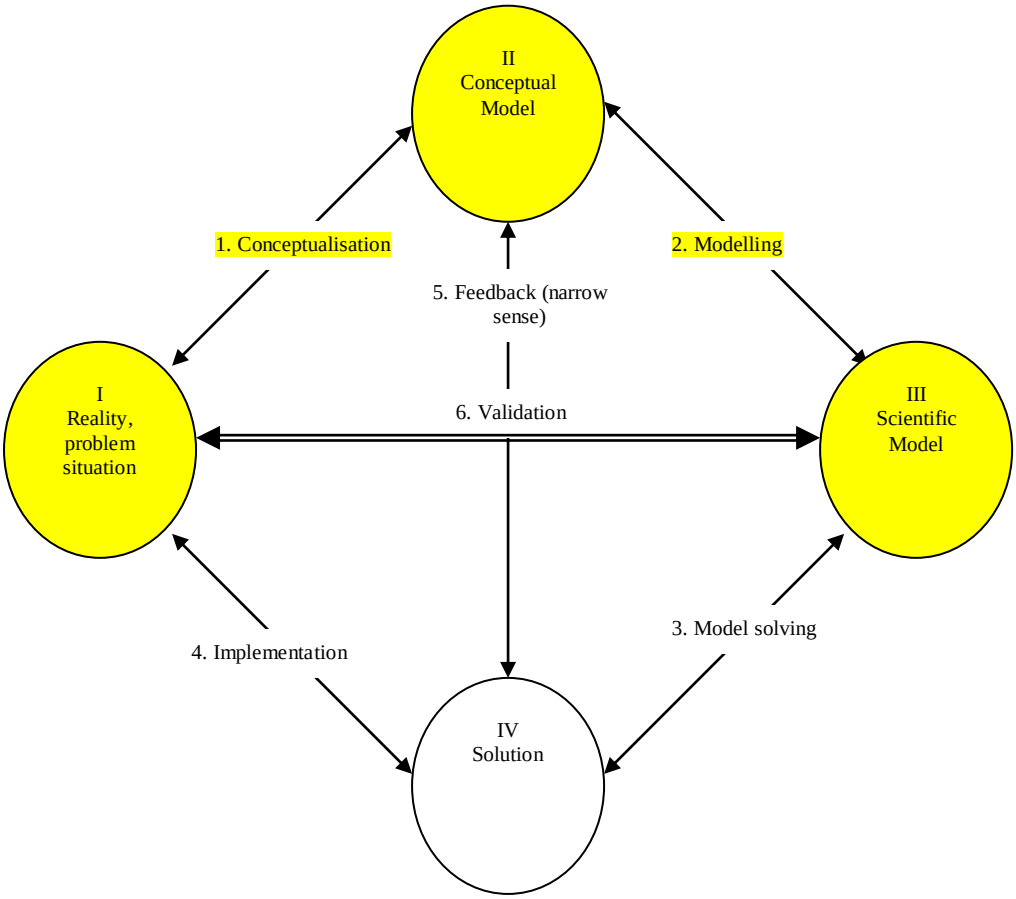
In addition, it is hoped that by articulating the strategy and measuring the resultant benefits of such voluntary mitigation initiatives, companies will be better placed to incorporate voluntary mitigation actions as part of their overall climate change strategy, and have the ability to clearly communicate the rationale behind such investments to their stakeholders. Furthermore it is anticipated that the communication of key conclusions and applications of the findings in a corporate context will allow for further development and evolution of South African companies' sustainability efforts.

3 Scope and structure of research:

This document explores the framework in which the above questions are considered and outlines the study carried out to answer them in the context of corporate sustainability investments in voluntary climate change mitigation. This section addresses the model for problem solving employed in this study and discusses the organisation of chapters.

The manner in which this study approaches the research problem is explained in terms of the model for problem solving, designed by Mitroff, Betz, Pondy and Sagasti (1974). The model is represented diagrammatically in figure 1.1.

Figure 1.1: A system view of problem solving



Source: Mitroff *et al.* (1974:48)

Note: Highlighted sections represent the focus areas of the proposed study.

Figure 1.1 represents a view of the activity of problem solving from a whole systems perspective. The initial purpose of the figure was to illustrate the various stages of the research process, later this was broadened to include a more generic range of scientific activities. From a systems view perspective, there is no one start or end point. Instead, depending on how the issue is viewed, any point can be chosen as a start point, and consequently there are multiple end points (Mitroff *et al.*, 1974:49). Each subsystem represents a different type or form of scientific enquiry and therefore, the implication is that research need not address all activities and elements of the model to be considered legitimate.

This study focuses on the area highlighted in figure 1.1 and moves from I-II-III. The emphasis is therefore on conceptualisation and modelling, through the verification and testing of the initial conceptualisation and development of a scientific model. A phased approach is adopted, with the first phase focused on conceptual research, and the second focusing on empirical research. The final phase is model building which combines the insights obtained in phase one and two.

3.1 Phase One: Conceptualisation

Phase one covers areas I and II highlighted in figure 1.1 with the main activity being conceptualisation. The inquiry therefore commences with the left hand circle, which represents the existence of a problem situation. The problem situation identified in terms of this study is the apparent lack of understanding of the motivations and consciousness of companies investing in sustainability initiatives, with specific reference to voluntary climate change mitigation actions.

In order to develop a conceptual model which sets out a definition of the problem and assists in identifying the variables which ultimately define the nature of the problem, a critical, multidisciplinary literature review is carried out and the resultant overview is contained in chapter 2 and chapter 3.

Chapter 2 contains an outline of the concept of sustainability first from a macro perspective, and then in terms of its corporate context, where the issue of a corporate sustainability consciousness is introduced. The chapter concludes by providing an overview of climate change in a sustainability context, and the resultant corporate response to this emerging threat.

Chapter 3 explores the motivations for corporate sustainability actions as highlighted in various papers, studies and surveys. The ultimate aim of the chapter is the development of a proposed conceptual framework which explains the interaction of business with the natural environment and the motivational factors driving this interaction. This framework forms the basis of the empirical phase of the study.

3.2 Phase Two: Empirical testing

Phase two requires the empirical testing of the insights and conceptualisation developed in phase one. The method selected for the empirical testing is outlined in chapter 4 and chapter 5 contains the resultant findings.

Chapter 4 provides an overview of the research methods employed in this study. It commences with an overview of the available methods, and highlights the selection of the most appropriate method. The unstructured nature of the research environment resulted in the adoption of a qualitative research approach. The exploratory nature of this study necessitated a case study based approach which focused on six South African companies in three industries. The ability of this study to be generalised in terms of the wider South African corporate market is therefore limited however, the method adopted in terms of this study can be replicated across other industries in South Africa to develop a broader understanding of inter-industry discrepancies. The scope of this study is therefore limited to carrying out the specified case studies, and relating these outcomes to the conceptual framework proposed in chapter 3 and developing a proposed scientific model.

Chapter 5 sets out the findings of the empirical phase of the study. The main insights that are tested in the South African corporate context are whether motivations for voluntary corporate action in respect of climate change fall within the proposed conceptual framework, or whether the model needs to be adapted and extended for unique features of voluntary climate change actions or issues specific to the South African market. In addition, the idea of corporate sustainability evolution is tested to determine whether companies that are perceived to be more responsible or accountable from a sustainability perspective, display differing motivations from companies considered less responsible or accountable.

3.3 Phase Three: Developing a model

Phase three therefore focuses on moving from a conceptual to a scientific model through empirical modelling. The resultant scientific model highlights relationships between variables and presented a simplified version of reality which can ultimately be tested and refined through a validation process. However, using the scientific model for validation, model solving and implementation falls outside the scope of this study.

Chapter 6 outlines the key findings of both the theoretical and empirical parts of the study and, in light of the original research question, conclusions are drawn regarding the motivational drivers for corporate sustainability action in respect of voluntary

climate change mitigation strategies. The chapter concludes with an overview of the contributions and implications of this study.

Chapter 2: Sustainability: A Background Perspective

1 Introduction

In order to answer the questions posed by this study regarding corporate motivation for sustainability investment, an understanding of the broader framework and context of sustainability is required. Sustainability is a concept that means different things to different people. At its most basic it is simply the ability to endure or survive. However, in the context of human development and environmental agendas the term has ideological, political, ecological and economic content (Pezzoli, 1997:550) and in this framework it is most commonly seen as a derivation of the term sustainable development (Visser, 2007:445). In this chapter, the concept of sustainability is examined first from a macro perspective as encapsulated in the terms sustainability and sustainable development. Thereafter the concept is considered in a corporate context, examining the origins and evolution of corporate sustainability. Lastly the focus shifts to how companies are responding to what is considered a major threat to sustainability, being climate change and its resultant impact.

2 Origins of the concept of sustainability

The word sustainability appeared in the Oxford English Dictionary for the first time in the late twentieth century (Oxford English Dictionary, 2008). However, aspects of sustainability existed much earlier and were observed in the practices of the Native American Iroquois nation who considered themselves morally obliged to consider the effects of their actions, and resultant impact on the earth, from the perspective of how these actions would affect their people over the following seven generations (Story & Lickers, 1997:159). In more recent history a number of sustainability issues were highlighted in the 18th century such as sustainable use of forests and concerns regarding population growth and resource consumption. In the mid 19th century coal usage and depletion of resources took centre stage, inevitably followed by the same concerns regarding oil stocks in the first half of the 20th century (Du Pisani, 2006:86). The growing awareness of limits to natural resources, and concerns regarding the welfare of future generations, forged the way for the emergence of the concept of sustainable development in the latter half of the 20th century.

3 Sustainable development

Lester Brown's *Building a sustainable society* (1981) ushered in a decade in which the concept of sustainability and sustainable development were increasingly popularised and brought to the attention of the general public. The most widely cited definition of sustainable development originated from the World Commission on Environment and Development (WCED) (also known as the Brundtland Commission) report to the United Nations entitled *Our Common Future*. In this report the concept is defined as:

> "development which meets the needs of the present without compromising the ability of future generations to meet their own needs." (Brundtland, 1987:54)

The United Nations commissioned the report as a response to the rapid deterioration of human and natural environments and concern over the resultant impacts on economic and social development. The term was however already in use at the 1974 Cocoyoc seminar (Pezzoli, 1997:551). The seminar was convened by the United Nations Environment Program and the United Nations Conference on Trade and Development to discuss "Patterns of Resource Use, Environment and Development Strategies". The catalyst for this seminar and many similar initiatives was the publication in 1972 of the Club of Rome report *The Limits to Growth* which had arrived at the conclusion that the limits of the planet would be reached within one hundred years if present growth trends continued. The report, however, also concluded that the possibility existed that growth trends could be altered to ensure "ecological and economic stability that is sustainable far into the future" (Meadows, Meadows, Randers & Behrens, 1972:24). The connection between environmental degradation and adverse impacts on human and economic development began to receive greater attention and the Brundtland report clearly acknowledged the interconnectedness of economic, social and environmental factors:

"Until recently, the planet was a large world in which human activities and their effects were neatly compartmentalised within nations, within sectors (energy, agriculture, trade), and within broad areas of concern (environment, economics, social). These compartments have begun to dissolve. This applies in particular to the various global "crises" that have seized public concern, particularly over the past decade. These are not separate crises: an environmental crisis, a development crisis,

an energy crisis. They are all one." (Brundtland, 1987:20). It is this interconnectedness which has perhaps driven the growing awareness and response to sustainability as increasingly governments, businesses and the general public realise that continued human development and growth is threatened by environmental and societal problems.

Since the publication of this report, and the subsequent United Nations Earth Summit held in Rio in 1992, various governments and local authorities have initiated actions to move towards sustainable development. Businesses have also responded to the call. The World Business Council for Sustainable Development (WBCSD) was formed on the eve of the Rio Earth Summit with the objective of involving business in sustainability issues and giving it a voice in the forum. Today, the WBCSD has some 200 members drawn from more than 35 countries and 20 major industrial sectors, involving some 1,000 business leaders globally (WBCSD, 2008). In the mid 1990's local authorities were seen to be the major players in the sustainable development arena, more recently the focus has shifted to business as a major player (Dyllick & Hockerts 2002:131). Issues driving business to assume this new role are addressed in section 4 and Chapter 3.

From a South African perspective sustainable development is enshrined in the Constitution of the Republic of South Africa, 1996 which states in chapter 2, section 24 that:

> "Everyone has the right -
>
> to an environment that is not harmful to their health or well-being; and
>
> to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that -
>
> - prevent pollution and ecological degradation;
> - promote conservation; and
> - secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development."

The definition of sustainable development has been formalised through its inclusion in the National Environmental Management Act (107/1998) where it is defined in section 1(xxix) as follows:

> "Sustainable development means the integration of social, economic and environmental factors into planning, implementation and decision-making so as to ensure that development serves present and future generations."

Following the 2002 World Summit on Sustainable Development, 37 negotiated targets were established under the Johannesburg Plan of Implementation. One of these targets was for nation states to formulate national strategies for sustainable development. In response to this requirement, the Department of Environmental Affairs and Tourism (DEAT) released a draft discussion document for public comment in late 2006 entitled *People-Planet-Prosperity: A Strategic Framework for Sustainable Development in South Africa*. The document sets out the national vision for sustainable development and indicates the interventions required for the reorientation of South Africa onto a sustainable development path (Department of Environmental Affairs and Tourism, 2006). Therefore it would appear that South Africa has a very advanced framework for sustainable development at a constitutional and legislative level, however this does not imply that the same level of commitment is experienced in the practical application of sustainable development. This issue is further investigated in Chapter 3.

From a macro level, much work has been done to define the concept of sustainable development, and to understand the framework in terms of which sustainability can be achieved. However, even though sustainable development is now part of the everyday vocabulary of society, the concept remains "imprecise and problematic" (Bezuidenhout, Fig, Hamann & Omar, 2007:41). Distinctions have arisen between weak and strong sustainability in an attempt to determine how different types of capital, economic, social and natural, are treated in a "sustainable" environment. Weak sustainability requires only that the overall level of capital stock is maintained, and therefore allows for substitutability. On the other hand, strong sustainability depends on the individual components of each type of capital as well as the overall level and does not allow for substitution (Wilsdon, 1999:3). This view takes into account the fact that some types of natural capital, such as ecosystem services, are irreplaceable, and in most cases the depletion of capital is irreversible and occurs in a non-linear manner. Bezuidenhout *et al.* (2007:41) note that further complications have arisen from interpretations in the early 1990s which failed to distinguish between sustainable development and the concept of sustainable growth with the terms often

used interchangeably confusing the issue of development with growth. In addition their view is that sustainable development is increasingly becoming synonymous with the idea of poverty eradication, diluting its core meaning and focus. Ongoing efforts are therefore required to retain the key elements of sustainable development and ensure progress beyond a 'business as usual' approach to sustainability as the term is open to manipulation to suit the agendas of various role players.

4 Sustainability in a corporate context

It has been suggested that companies have an important role to play in achieving global sustainable development given their expanded role and influence in the global economy. However, the idea that companies have a societal and environmental responsibility beyond that of making profits remains a controversial topic. From the earliest days of Adam Smith's *The Wealth of Nations* (first published in 1776) there has been a reluctance to place constraints and responsibilities into a free market system. Smith's view was that people should be left to trade freely as their own self-interest would result in the provision of the required goods and services (Smith, 2007:16). This neoclassical perspective was supported by Friedman (1970) whose view was that the only social responsibility of business was to increase its profits. To this he added the caveat that companies needed to stay "within the rules of the game" engaging in "open and free competition without deception or fraud" (Friedman, 1970:178). This perspective of the purpose of a company had been voiced more than a decade earlier by Levitt (1958:49) who was of the opinion that "long-run profit maximisation is the one dominant objective in practice as well as in theory." The counter argument presented by Davis (1960:76) was that "economic functions of business are primary, but this does not negate the existence of non-economic functions and responsibilities." These two opposing viewpoints of the role of business in society remain to this day.

Another aspect of the corporate responsibility debate deals with the issue of the morality of profit or shareholder maximisation as a business objective. Once again the neoclassical view is that the pursuit of profit in a competitive free market system will result in aggregate social good, and is therefore moral, while at the other end of the spectrum the unrestrained pursuit of profits is regarded as unethical (Goldman, 1980:260-261). Against the backdrop of business ethics theory and moral philosophy Dobson (1999) attempts to answer the question as to whether corporate decision

makers, who take decisions based solely on the ultimate objective of shareholder wealth maximisation, are acting amorally, immorally or morally. He concludes that shareholder wealth maximisation can be considered as moral, provided social values and moral concerns are translated into economic signals which in turn influence shareholder value through the market mechanism, a so-called 'market of morality' (Dobson, 1999:73). Therefore transparency and the dissemination of information are prerequisites for the moral defence of shareholder wealth maximisation. This would imply that in a perfect free market where information is readily available, market signals would drive managers to take decisions that would ultimately be for 'the greater good'. However in light of environmental degradation and societal imbalances this 'marketplace of morality' appears not to be functioning to its highest potential, with lack of corporate transparency, externalities, and other obstacles potentially leading to the exclusion of key signals from both a social and environmental perspective.

Lantos (2001:11) provides an overview of the current views which reflect the debate first started by Davis and Levitt. Modern proponents of Levitt's view support shareholder wealth maximisation as the ultimate corporate objective. At the other end of the spectrum of viewpoints of business's role in society are the supporters of Davis's view, who believe that the vast resources of business should be used for social good, and collectively promote corporate social responsibility and an altruistic vision. The middle ground is occupied by proponents of a stakeholder view of the company, first conceptualised by R.E Freeman's, *Strategic Management: A Stakeholder Approach* (1984) which proposes that business should be sensitive to the effects of its actions on various stakeholder groups. In a South African context, the King Report on Corporate Governance in South Africa (King, 2002) appears to support a stakeholder view, mentioning that "this inclusive approach is the way to create sustained business success and steady, long-term growth in shareowner value." (King, 2002:6). The report goes on to note that "it is becoming difficult for companies to account for profitability alone" (King, 2002:8). Obstacles encountered in terms of the application of stakeholder theory primarily relate to definitional aspects which deal with who should be included as a stakeholder, and priority of stakeholder claims, which highlights the issues related to competing claims.

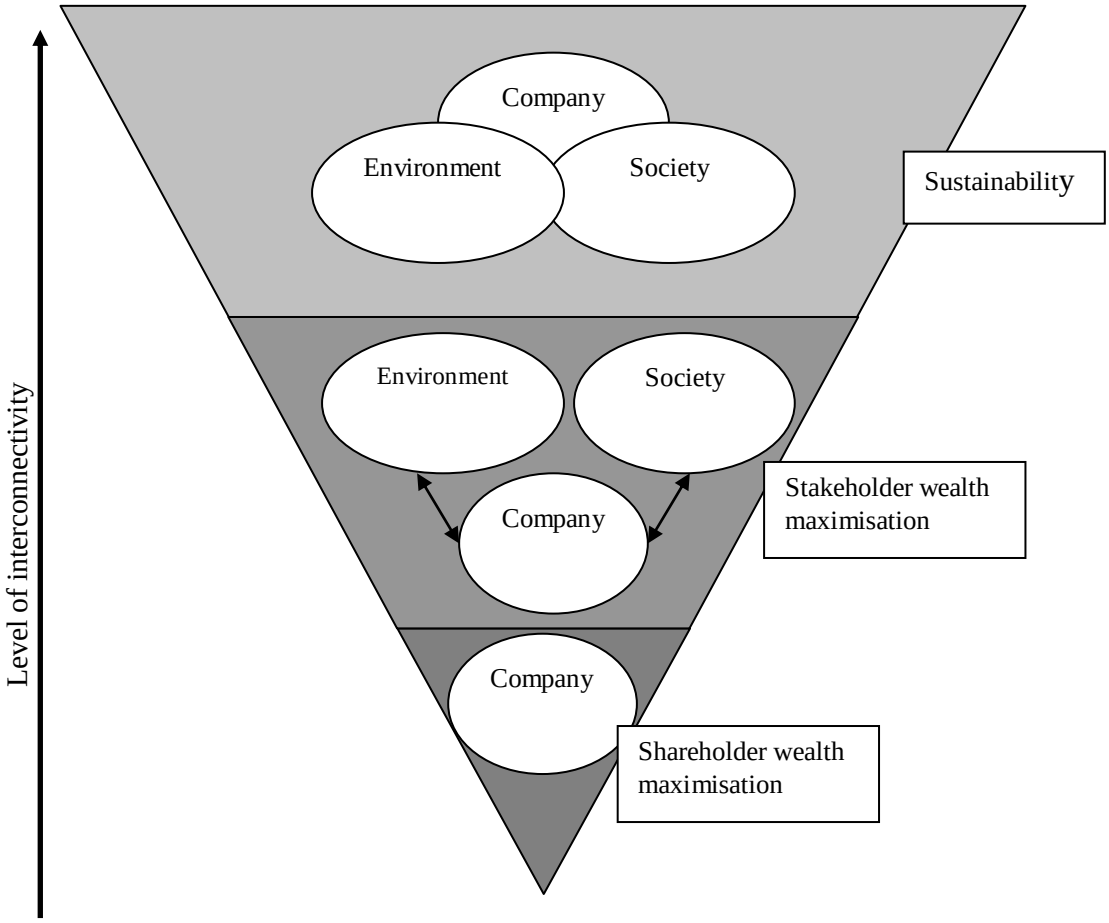
These debates which have taken place over the past fifty years regarding corporate morality and responsibility do not appear to have provided a solution to the question of what role business should play in society and the environment. A different view of the purpose of a company, which moves away from the traditional focus on shareholder wealth maximisation and stakeholder theories is been proposed by Beinhocker (2007:409). He suggests that the ultimate purpose of a company should be to endure and grow. He regards profits as a fundamental constraint and not the ultimate objective of a company. As Handy (2002:136) points out, while food may be required to sustain life, it is not our life's purpose to eat and therefore requirements should not be confused with purpose. Beinhocker (2007:414) notes that the validity of this viewpoint is illustrated by the studies carried out by De Geus (1997) and Collins and Porras (2002) regarding the strategies of long-lived companies. De Geus (1997:11) refers to the need to "survive and thrive", while Collins and Porras (2002: 55) reinforce the idea of profit as constraint "Profitability is a necessary condition for existence and a means to more important ends, but it is not the end in itself for many of the visionary companies." Beinhocker (2007:413) suggests that the two elements of endurance and growth will encourage management to "explicitly recognise the multidimensional nature of long-term survival and growth". He suggests that "while shareholders would remain a vitally important constituency" attention would be focussed on "actions that ensure healthy relationships with a full set of stakeholders." Therefore, in light of this view, all stakeholder requirements can be viewed as constraints that need to be met only if they result in the achievement of the ultimate objective, which is the company's continued existence. Therefore, in terms of this framework, if the long-term survival of a company is seen to be dependent on social and environmental issues, then companies would need to take action to ensure the upliftment of society and the preservation of the environment.

The interconnectedness of environmental and social aspects with the long term survival of companies was popularised by Elkington (1999:70) through the introduction of the concept of the triple bottom line. The issue of social and environmental responsibility are not new to the business world. The concept of social responsibility encapsulated by the term corporate social responsibility (CSR) emerged in the early 1950s following the publication, in 1953, of a Howard R. Bowen's landmark book *Social Responsibilities of the Businessman*, suggested by some to

mark the beginnings of the modern period of literature on this topic (Carroll, 1999:269). From an environmental perspective the publication, in 1962, of Rachel Carson's *Silent Spring*, is seen by many to mark the beginning of the "environmental revolution" (Elkington, 1999:46). Issues such as global warming, ozone depletion, pollution and deforestation have increasingly placed the spotlight on corporate responses to environmental issues and the emergence of the concept of corporate environmentalism (Banerjee, 2002a:177). Elkington (1999:71) brought the issues together with his proposal that business goals were inseparable from the societies and environments within which they operate.

Figure 2.1 outlines the themes of shareholder wealth maximisation, stakeholder wealth maximisation and sustainability in relation to the level of interconnectivity between business, the environment and society.

Figure 2.1 Perspectives of the corporate objective



Source: Own observation.

The parallels between this interconnected approach, and that of sustainable development led to the emergence of the concept of corporate sustainability. While definitions abound, there is no consensus as to the exact meaning of the term, leaving it open to manipulation. Banerjee (2003:163) notes that the transformation of the concept from sustainable development, to corporate sustainability "displaces the focus from global planetary sustainability to sustaining the corporation through 'growth opportunities'." At issue is what occurs when environmental and social issues do not lead to growth opportunities. This closely mirrors the issues encountered at a macro level regarding the development versus growth dynamic mentioned earlier in terms of the sustainable development concept. Given the lack of consensus definition of this concept, and varying levels at which it has been implemented within organisations, criticisms of corporate 'greenwashing' have emerged, and it is believed that many companies only pay lip service to the concept of corporate sustainability, while continuing to pursue a business as usual agenda.

Despite these uncertainties and issues, the concept of corporate sustainability is beginning to find acceptance both in academic literature, and in the business community (Banerjee, 2002b:106). From a South African perspective, King (2002) has embraced the ideas of triple-bottom-line and sustainable development. The concept of corporate sustainability is defined as follows:

> "In a corporate context, "sustainability" means that each enterprise must balance the need for long-term viability and prosperity – of the enterprise itself and the societies and environment upon which it relies for its ability to generate economic value – with the requirement for short-term competitiveness and financial gain." (King, 2002:96)

Following the recommendations of King (2002) regarding integrated sustainability reporting, South African companies are increasingly reporting on their sustainability initiatives in their annual reports, or as separate sustainability reports (KPMG, 2006:1). It is anticipated that the new code of corporate governance for South African companies, which is currently in draft format for discussion (King, 2009) will require more detailed disclosure of sustainability issues both from a risk management and business opportunity perspective.

While most companies appear to have some sustainability agenda, actual corporate actions taken in respect of sustainability initiatives vary widely between companies. This disparity might result from the fact that sustainability is not an objective, scientific or neutral concept, but is rather seen as a subjective topic which contains implicit or explicit values (Visser, 2007:446). It had been suggested that, as a normative concept, sustainable development would be defined from the perspective of how an individual thinks things should be (Byrch, Kearnis, Milne, & Morgan, 2007:29). This implies that corporate sustainability would mean different things to different people which might lead to companies taking varied actions all under the 'sustainability' banner. Defining and understanding sustainability would therefore require an understanding of the worldview of the person or organisation defining the concept.

5 Corporate sustainability consciousness

There are numerous views of sustainability that stretch across a broad spectrum of interpretations. Byrch *et al.* (2007:30) propose that a person's culture and experience, as filtered by their worldview, influences their interpretation of the meaning of sustainable development. The concept of a worldview is commonly used in various disciplines as a means of understanding and examining the humanity-environment relationship (Gladwin, Kennelly & Krause, 1995:880). Koltko-Rivera (2004:3) describes a worldview as "a set of assumptions about physical and social reality that may have powerful effects on cognition and behaviour." From the perspective of human-environment interactions worldviews have generally been categorised into two diametrically opposed camps: technocentrism, which views humans as separate from and superior to nature; and ecocentric which views humans as interconnected with and inseparable from nature. However, over time a third category, sustaincentrism, has been suggested which aims to find a middle ground which sees humans as neither totally disengaged nor totally immersed in nature (Gladwin *et al.*, 1995:890). It has been suggested that research into businesses' environmental worldview could prove useful in the context of framing sustainable development efforts in a corporate context (Byrch *et al.*, 2007:47). Therefore, in order to understand what motivates companies to take action in terms of social and environmental issues, one would first need to understand the worldview of the company and its managers, and in effect understand the level of sustainability awareness or consciousness. This would allow a deeper

understanding of the motivations driving sustainable development in a particular company.

Worldviews, while difficult to alter, are not necessarily static and can change depending on the new information and knowledge. In this context of changing worldviews, it has been suggested that sustainability should be viewed as an evolutionary process rather than an ultimate state or goal. The view is that yesterday's businesses were oblivious to their negative impact on the environment, today's businesses aim for zero impact, while tomorrow's businesses will need to learn to make a positive impact on the environment (Hart, 1997:68). This implies that there needs to be a growing awareness, and consciousness of sustainability issues to drive the evolution of sustainable development in a corporate context. One issue that is raising awareness is the global threat presented by climate change. The interconnectedness of economic, social and environmental aspects is clearly illustrated by climate change, an environmental problem which appears to have far reaching economic, social and environmental consequences.

6 Climate Change Strategies

The popularisation of the concept of climate change through the work of Gore (2006) and Stern (2006) appears to have brought this interconnectedness into focus for the business world. In response, companies are beginning to invest time and money in "Green", "Environmental" or "Climate Change" strategies (Arthur D Little Consultancy, 2007; Hoffman, 2006; Lovins & Lovins 1997). However, the underlying motivations for the adoption of such strategies are by no means uniform. Before investigating climate change strategies, a brief overview of the carbon market is necessary to facilitate understanding of both compliance and voluntary strategies.

6.1 Overview of the carbon market

The compliance market developed out of the United Nations Framework Convention on Climate Change (UNFCCC) adoption of the Kyoto Protocol in 1997. Legally binding greenhouse gas (GHG) emission reduction targets were set for countries that ratified the protocol (predominantly developed countries, commonly referred to as Annex I parties), with the aim of reducing emissions by an overall 5% below 1990 levels during the period 2008 to 2012. In order to achieve this reduction, countries can either directly reduce their emissions, or utilise the flexible mechanisms developed by

the Kyoto Protocol (Clean Development Mechanism (CDM), Joint Implementation (JI))[1]. In addition, some nations, or groups of nations developed their own trading mechanisms such as the European Union Emissions Trading Scheme (EU ETS) (Carbon Trust, 2006a:4).

Due to the fact that GHGs mix uniformly in the earth's atmosphere, they impact on the entire world's climate. Therefore it does not matter where abatement or reduction occurs, the key issue is that net emissions need to be reduced. This fact has provided the economic justification for co-operation, on an international basis when it comes to emission reduction projects (Burtis & Watt, 2008:19).

In general terms, a carbon offset neutralises a ton of CO_2 equivalent (CO_2e) which is released somewhere in the world, by preventing or avoiding the release of a ton of CO_2e elsewhere in the world, or alternatively sequestering a ton of CO_2e which would have remained in the atmosphere if action had not been taken. Various projects can lead to carbon offsets for example, renewable energy, energy efficiency, etc. These projects generate emissions reductions which individuals or companies can purchase to neutralise their GHG emissions (Taiyab, 2006:3).

"Carbon credits" is a generic term which is used to describe the tradable units created by the flexible mechanisms. The credits created have specific names depending on their source. Therefore, credits arising from CDM projects are referred to as Certified Emission Reductions (CERs), those from Joint Implementation projects are called Emission Reduction Units (ERUs). Credits allocated to parties in terms of the Kyoto Protocol are known as Assigned Amount Units (AAUs) and lastly those credits allocated to companies in terms of the EU ETS are known as European Unit of Allowance (EUA). All of the above carbon credits are grouped together in what is commonly known as the compliance markets (either Kyoto or EU ETS) (Carbon Trust, 2006a:4).

There are two main sources of carbon credits in the compliance market. First there are the credits, which are allocated to an organisation or government in terms of the overall emissions quota. Should the organisation emit less than its allocated quota, it is allowed to sell the surplus to other organisations or governments who are emitting

[1] CDM projects allow Annex I parties to meet their emission reduction targets through emission reduction projects undertaken in developing countries, whereas JI projects allow them to meet their reductions through projects in other Annex I countries.

in excess of their quota (AAUs and EUAs are traded in this context). Second, credits can be created by investing in projects, which create reductions in GHG emissions (CERs and ERUs are the units created by the project mechanisms). Each credit is measured in tons of CO_2e with different weights applied to the various GHGs depending on their global warming potential (Bayon, Hawn & Hamilton, 2007:4).

The voluntary carbon market includes all trading in carbon credits not required by regulation. The market developed independently of government imposed targets and policies and is open to anyone from governments to individuals who wish to buy the resultant credits (House of Commons, 2007:8).

Many reasons have been given for the emergence of this market. Corporate climate change strategies which include carbon offset and carbon neutrality have, to some extent, driven the development of the voluntary carbon markets. However in addition, the voluntary market serves as a testing platform for new ideas and innovations that can then be exported to the compliance market (Hamilton, Bayon, Turner & Higgins, 2007:6). Added to this, projects in poorer and smaller communities, mainly in developing countries, can be targeted as they do not need to contend with the bureaucracy and high costs associated with the compliance market. This also enables the development of smaller offset projects, which sometimes have additional sustainable development benefits in smaller communities. While the underlying principle is sound, the myriad of issues surrounding voluntary carbon reduction projects such as additionality, verification, permanence, leakages and double counting have all led to scepticism in the market regarding the benefits of such projects (Carbon Trust, 2006a:10). However, when properly executed these voluntary market projects fill a crucial gap in the overall carbon market as they typically target small-scale projects that benefit local and rural communities and provide additional sustainable development and / or social benefits in developing countries such as Africa (Hamilton *et al.*, 2007:6).

6.2 Overview of corporate climate change strategies

Climate change actions are therefore primarily divided into compliance related and voluntary actions. Compliance related actions stem from the emission reduction targets determined by the Kyoto Protocol regarding GHG emissions for specified countries and industries. The primary motivation for companies in these countries and

industries is therefore regulatory compliance. However, many companies, not subject to these regulations, are taking voluntary action to reduce emissions.

Voluntary strategies adopted range from targeting direct emissions and focusing on emissions arising from activities up and down the supply chain to purchasing emissions reductions in the voluntary offset market to support claims of carbon neutrality at an event, product or business level (Carbon Trust, 2006a:15). The first two actions could be expected to deliver bottom line financial and carbon savings. Savings would emerge primarily from lower energy costs while revenues could be generated from new product innovations which cater to demands for eco-design and efficiency (Arthur D Little Consultancy, 2007:4). Corporate motivations for voluntary climate change action are explored in more detail in Chapter 3.

7 Conclusions

It would appear that, as with beauty, corporate sustainability is in the eye of the beholder. Therefore in order to understand what drives corporate action in terms of sustainability initiatives it is necessary to first establish the sustainability values and worldview of the company. The following chapter focuses on corporate engagement in terms of sustainability actions, and explores the actual motivations for corporate action in respect of broad sustainability initiatives, and responses to climate change issues both from an international and a South African perspective.

As the above discourse has illustrated, the sustainability field is fairly extensive. In order to limit the scope of this study the focus will be on environmental sustainability actions, with a particular focus on voluntary climate change strategies.

Chapter 3: Corporate motivations for sustainability actions: development of a conceptual framework

1 Introduction

What motivates companies to take action in terms of their impact on the natural environment? Are they driven by fear, greed, morality or a combination of these? This chapter explores how various papers, studies and surveys have attempted to explore the context of the corporate sustainability field and provide answers to these questions. The ultimate aim of the chapter is to develop a framework that can be applied to the South African corporate sector to understand motivations for corporate sustainability actions. This framework forms the basis of the empirical study into sustainability values and motivations of the South African corporate sector.

There is a large body of literature dealing with the relationship between business and the natural environment and much work has been done to understand corporate motivation for engaging with environmental issues. This chapter first examines the linkages between business and the natural environment and uncovers the dominant themes which attempt to explain corporate engagement with the natural environment. The focus then shifts to actual corporate motivations uncovered by various studies and surveys, including an overview of motivations for corporate climate change action. These motivations are examined in the context of the dominant themes of corporate engagement with the natural environment to understand whether these motivations can be linked to specific themes. Next the concept of the evolution of sustainability consciousness is introduced with the intention of exploring a proposed evolutionary framework which ties back to the linkages discussed above. Finally the actions of corporate South Africa are examined in terms of sustainability and climate change actions to determine where this country fits into the framework of sustainability and consciousness which provides the starting point for the empirical study into corporate sustainability consciousness of South African companies.

2 Proposed linkages between environment and business organisations

Over the past few decades numerous concepts have been put forward to explain the linkages between business and the natural environment. These concepts fall broadly into three themes (Banerjee, 2002a:178): stakeholder, strategic and paradigmatic shifts. The contention of the stakeholder theme is that business is driven to interact

with the environment because stakeholders expect the company to take action. The strategic viewpoint proposes that companies take action on environmental issues because it drives profitability and therefore supports the ultimate goal of shareholder wealth maximisation. The concept of paradigmatic shifts highlights the idea that companies may be driven by values and moral responsibility to take action in respect of environmental issues which go beyond the current framework of the neoclassical economic paradigm (Banerjee, 2002a:178). This action is provoked by the realisation that efforts to address environmental issues in terms of the current stakeholder or shareholder framework do not go far enough to ensure global sustainability.

Before investigating real world corporate motivations expressed in various surveys and studies these themes are explored in more detail to understand the key concepts underlying each aspect. While Banerjee (2002a:178) made use of the phrase 'theoretical linkages' to describe the interaction between business and the environment the three themes identified are perhaps better described as conceptual rather than theoretical. Given the limited understanding and testing of corporate sustainability, it would appear that these themes are best understood from the perspective of a conceptual framework which provides the outline or basis for a study rather than in terms of a theoretical framework. This conceptual framework is discussed in more detail in 2.4 below.

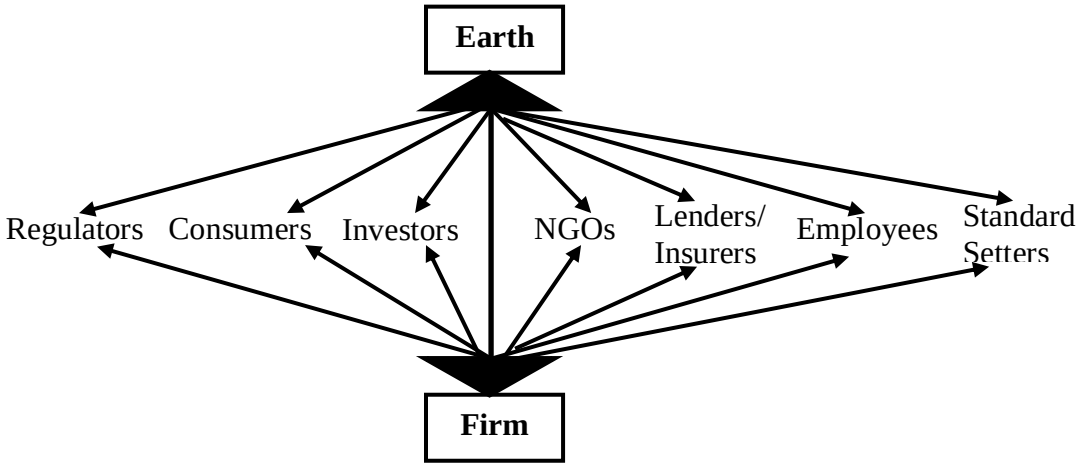
2.1 Stakeholder management linkages

Stakeholder management primarily deals with the relationship between the business and individuals or groups which are affected by or can affect the attainment of a business's objectives (Freeman, 1994:411). Stakeholders are usually divided into two main groups. The primary stakeholder group includes all those who are essential to the continued existence of the company, such as customers, suppliers and employees. The secondary group consists of individuals and groups that are influenced by, or can influence the attainment of a business's objectives, including government, the media and interest groups (Clarkson, 1995:106-107). While most stakeholder theorists include the natural environment as a stakeholder (Driscoll & Starik, 2004:55) there are varying views as to whether it is accorded primary or secondary status.

There are two ways in which business engages with the natural environment in terms of the stakeholder framework. First business can view the natural environment as a

primary stakeholder and therefore managerial decision-making explicitly includes the natural environment. This is the view supported by Driscoll and Starik (2004:69) who view the natural environment as the primordial stakeholder. The second manner in which the natural environment can be included in decision-making is through the actions of other stakeholders who represent the natural environment. Stead and Stead (2000:322) illustrate this concept in terms of the green stakeholder map, shown in figure 3.1, which they believe demonstrates the idea that even though the planet "may not sit down with the other board members" it has many willing representatives "to come to the table on its behalf". Business is therefore forced to consider its impact on the natural environment due to the importance which other stakeholders attach to acting responsibly in terms of the natural environment.

Figure 3.1 Green stakeholder map



Source: Stead & Stead (2000:322).

The key issue in terms of the stakeholder approach to the natural environment is a common concern debated in terms of the application of stakeholder management frameworks in general, which deals with how a business weighs up competing stakeholder claims. Nasi, Nasi, Phillips and Zyglidopoulos (1997:303) point out that different groups of stakeholders have different amounts of power depending on the potential impact that a stakeholder group has on the company if its needs are not met. Therefore more powerful stakeholders receive the most attention, and in the case of competing interest, precedence is given to the more powerful stakeholder group. This has implications for the natural environment which may be placed low on the list, or even ignored when competing interests arise. However, by the same token, when a

powerful enough stakeholder or group of stakeholders becomes concerned with a specific issue a legitimacy gap emerges and the company will need to respond (Nasi *et al.*, 1997:303). In this context a legitimacy gap is the difference between perceived corporate behaviour and societal expectations for corporate behaviour.

In terms of the stakeholder theme, company action will be motivated by outside pressure and influences. Action will be taken to reduce the legitimacy gap by ensuring that the company acts in accordance with the expectations of its key stakeholders. This would imply that companies would be reactive rather than proactive when it came to sustainability actions and would focus on those issues which are important to stakeholder groups which have the most influence and are able to exert pressure to dictate company responses to environmental issues.

2.2 Strategic linkages

The relationship between business and the natural environment in terms of strategic linkages is focussed on competitive or profitability considerations. Concepts such as 'green business' and the 'business case for sustainability' are often used to explain the idea that doing good for the environment can be good for business too. This represents an enormous shift in mindset from the traditional view that business needs to sacrifice performance to meet its obligations to society, with business predisposed to see societal and environmental issues as negative. Hart (2007:5) describes this as "the great trade off illusion" which he attributes to the vast amount of legislation which was promulgated in the last three decades of the 20th century. The combination of pressure from regulators and activists led to a widely held belief that environmental and social issues were costly problems for companies. The move in the late 1980s and 1990s to pollution prevention programs and other proactive strategies to recycle and reduce waste began to deliver cost savings which allowed companies to recognise that, in certain cases, they could improve their competitive position and profitability, while at the same time providing benefits to the environment and society.

Numerous papers have been published extolling the virtues of corporate greening strategies (Holliday, 2001; Porter & van der Linde, 1995; Reinhardt, 2007). In addition business books such as *Green to Gold: How smart companies use environmental strategy to innovate, create value and build competitive advantage* (Esty & Winston, 2006) provide examples and strategies of how to profit from the so-

called 'green wave'. Reinhardt (2007:43) goes so far as to caution that not all environmental problems create money-making opportunities. His view is that managers need to determine which environmental investments create shareholder value. He highlights five approaches including product differentiation, "management" of competitors through the imposition of private regulations or shaping the regulatory agenda, cutting costs through eco-efficiency, management of risk to reduce costs associated with lawsuits, boycotts etc, and finally the redefinition of the market by means of systematic changes and innovative thinking. Reinhardt concludes that environmental problems should be viewed through a business lens which will enable management to determine "when it *really* pays to be green" (Reinhardt, 2007:59). In a similar vein, Holliday (2001:134) notes that "sustainability strategies will fail unless they create or increase shareholder value." In the case of Du Pont he points out that such value was created initially through driving efficiency, risk reduction and the identification of new products and markets. Porter and van der Linde (1995) explore the linkages between environmental actions and competitiveness. They are of the opinion that environmental improvement provides a competitive opportunity through resource productivity and innovation. The common theme in all of this literature is business can profit by adopting certain actions in response to environmental problems. Key areas are driving eco-efficiency, managing risks and innovating to capture new markets.

Strategic linkages therefore address environmental issues through market forces and are sometimes seen from the perspective of 'business-as-usual (except greener)' Banerjee (2003:163). Banerjee (2003:165) is of the view that as long as issues continue to be rationalised from a competitive advantage perspective no radical shift in worldview is possible. The end result is a "policy of reform that avoids the necessity of having to examine deeper philosophical causes of ecological crisis" (Purser, Park, & Montuori, 1995:1075). The proponents of a deeper reform policy find their voice in the increasing amount of literature that addresses the need for a new paradigm for business.

2.3 Shifting paradigm

The call to move 'beyond greening' is increasingly appearing in academic and management literature. In his book *Capitalism at the Cross Roads*, Hart (2007:14) notes the view expressed by Bill McDonough, co-author of *Cradle to Cradle*, who

likened greening to heading in the wrong direction, but at a slower speed, whereas sustainability and going beyond greening would imply turning around and setting off in the right direction. Gladwin *et al.* (1995:900) adopted a less radical view noting that greening moves companies in the right direction, however gaps remain in reaching the ultimate sustainability destination. Numerous papers detail a different approach to businesses' interaction with the environment (Gladwin *et al.*, 1995; Purser *et al.*, 1995; Shrivastava, 1995a). Most of these papers highlight the need for a paradigm shift and the development of a new worldview for business, which takes into account the interconnectedness of business and the environment.

The new paradigm takes a holistic worldview where the world in viewed as interconnected and integrated, rather than the isolated and mechanistic neoclassical view which prevailed in the past century (Capra & Pauli, 1995:2). Capra and Pauli (1995:9) see business playing an integral role in this paradigmatic shift as companies increasingly realise that competitive advantage needs to be substituted with sustainable advantage. They believe that issues that must receive focus in terms of building a sustainable advantage will be ethical standards, moral commitment and driving high environmental performance. The shift to sustainability will, in their opinion not require new technology, rather they are of the view that integrating the six principles of ecology into business will drive this process. Capra (2003:202) details the six ecological principles being: networks, cycles, solar energy, partnerships, diversity and dynamic balance is his book *The Hidden Connections: A science for sustainable living*, and is of the opinion that developing this ecological literacy is the first step towards global sustainability.

Shrivastava (1995a:938) views the issue from the perspective of ecologically sustainable development in which there is an awareness of the limits of nature to support growth. Corporations would need to contribute to ecological sustainability by developing total quality environmental management (TQEM), competitive strategies that are ecologically sustainable, technology-for-nature swaps and finding ways to reduce the impact of populations on ecosystems. The potential benefits to companies cover a range of issues from those associated with traditional green strategies (cost reduction, competitive advantage etc) to benefits which are realised when there is a value change which moves from the traditional short term economic rationale to a

focus on long term survival through the application of ecological rationality (Shrivastava, 1995a:956).

The competing paradigms of environmental management (traditional greening strategies) and ecocentric responsibility (which recognises that the destiny of human and nature are interconnected) are examined by Purser *et al.* (1995). They argue that environmental management is focused on short-term temporary solutions to ecological problems. The move to green consumerism, while a step in the right direction, still creates the mindset that consumption can continue unabated. Environmental management is therefore seen as an incremental approach to a problem that requires radical resolution strategies. Fundamentally new approaches are therefore required in the interactions between corporations and the environment. Whether such radical changes are possible remains unclear. The current legal, economic and financial framework in which managerial decision making takes place do not appear to lend themselves to such a radical change (Johnson, 1996:609). However, Purser and Montuori (1996:612) argue that is it precisely due to the fact that these traditional frameworks do not support ecocentric responsibility that a new paradigm is necessary.

Gladwin *et al.* (1995:878) take a slightly different approach to the problem of finding a new paradigm. They first set out to define the central characteristics of sustainable development which they assert are inclusiveness, connectivity, equity, prudence and security. In the context of these components the opposing views of technocentrism and ecocentrism are appraised to determine congruence with a worldview supportive of sustainable development. Their analysis leads them to conclude that technocentrism and ecocentrism both fail to include all components. They then introduce the emerging concept of sustaincentrism, which the authors feel "transcends or supersedes, at once both negating what is dysfunctional and preserving what is beneficial in the alienated poles of technocentrism and ecocentrism." (Gladwin *et al.*, 1995:896). In their opinion this paradigm is most congruent within the context of sustainable development.

The common themes of interconnectedness and interdependence in the business-natural environment context and the recognition of natural limits to growth appear to be driving the shift to a new paradigm. The variety of approaches illustrated in the

above literature is considered to be useful in the development of a new paradigm and continued debate is expected to strengthen the ultimate paradigm that emerges.

Company interactions with the environment which are motivated by ethical and moral imperatives to care for the environment represents a shift away from the neoclassical paradigm of business, towards a more holistic, integrated and sustainable business paradigm.

2.4 Proposed framework:

The key motivating factor for action in terms of each theme can be summarised as follows in response to the question: "Why does your company take action in respect of environmental issues?":

- Stakeholder: "because our key stakeholders expect us to take action"
- Strategic: "because it makes or saves us money"
- Paradigmatic shift: "because we are morally obligated to care for the environment due to the fact that our current way of doing business has resulted in environmental degradation and we need to adopt a new way of interacting with the environment which takes a holistic view and is sensitive to the interconnected world in which we live."

Broadly the relationship between business and the natural environment can therefore be characterised in terms of three dominant driving forces: legitimacy, the financial business case and moral responsibility. Schaltegger and Burritt (2005:201) identified a list of some of the main reasons given for addressing sustainability issues from economic and business literature and conversations with managers. This list can be used to highlight some of the underlying drivers of the three dominant drivers as listed below:

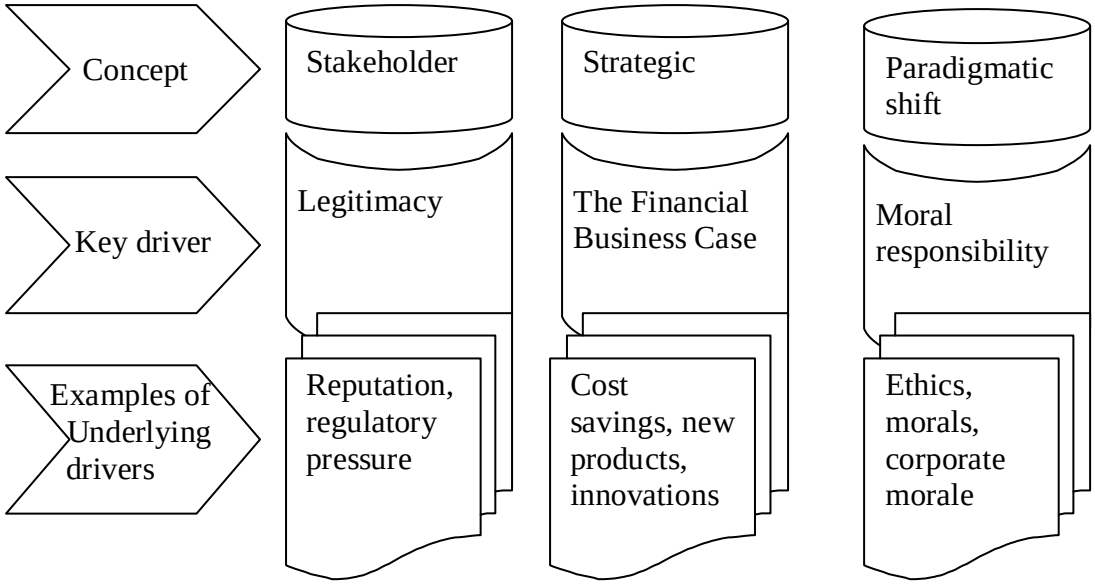
Legitimacy: Legal compliance, personal risk and reputation of managers, improving corporate reputation, maintaining legitimacy and "social licence to operate", promotion of self-regulation and influence of future direction of regulation.

The financial business case: increasing competitiveness, cost reduction, integration of parallel activities of shared services units, managing business risk, business opportunities and reference point for innovations, increasing shareholder value, and brand value.

Moral responsibility: Ethics, role of corporations as drivers of economic and social development, moral commitment of managers and individual employees.

In terms of the above categorisation it is possible to construct a proposed framework which highlights the interactions between the three concepts, the dominant drivers and the underlying drivers as illustrated in figure 3.2. .

Figure 3.2 Proposed Conceptual framework



A study conducted by Bansal and Roth (2000) appears to reach similar conclusions regarding the key motivations for ecological responsiveness. Their study analysed data from 53 companies in the UK and Japan over a three-year period (Bansal & Roth, 2000:717). The aim of the study was to understand 'why companies go green', and reached the conclusion that there were three key motivations: competitiveness, legitimation and ecological responsibility. Competitiveness was driven by profit motivations with decision making done from a cost: benefit perspective. Firms motivated by legitimacy were focused on the firm's survival through compliance with norms and regulations. Decisions were based on the costs and risks associated with non-compliance. Firms motivated by ecological responsibility appeared to be driven by ethical and moral obligations, basing decisions on ethical criteria rather than on financial gain. There appears to be a connection between these motivations and the themes discussed above with competitiveness tying back to strategic linkages (the financial business case for sustainability), ecological responsibility linked to

paradigmatic shifts, and legitimation connected with stakeholder management and attempts to close the gap between stakeholder expectations and company actions.

In the next section the results of various surveys and studies are analysed to determine whether these tie back to the framework and can be categorised in terms of the three dominant themes.

3 Corporate Motivations

3.1 Sustainability motivations

In order to understand whether actual company motivations for sustainability actions fit into the above framework it is useful to review the outcomes of two international surveys which were carried out to obtain an understanding of business responses to sustainability issues.

In the survey carried out by PWC (2002) respondents revealed that the top three reasons for adopting sustainable strategies were: enhanced reputation, competitive advantages and cost savings. For those who had not adopted sustainability practices the top three reasons were: no clear business case, lack of key stakeholder interest and lack of senior management commitment. Therefore motivations were dominated by legitimacy concerns in terms of reputation, financial business case considerations linked to competitive advantage and cost savings. The key reasons for not acting on sustainability appear to be driven by legitimacy (lack of stakeholder interest) and financial business case issues (lack of business case).

The focus on legitimacy and financial business case linkages were also apparent in a recent survey carried out by the Economist Intelligence Unit (EIU, 2008) which investigated the impact of sustainability on business. The three biggest benefits of adopting sustainable practices (other than compliance) were the ability to attract and retain customers, improved shareholder value and increased profitability, all three key financial business case considerations. Other aspects of the survey continued to highlight the driving forces of financial business case and legitimacy concerns. In developing a sustainability strategy, companies ranked the following objectives as critically important: increasing revenues, enhancing brand reputation and compliance with regulatory and legal obligations. The following major barriers to making progress on sustainability goals were identified: the risk that sustainable practices would raise costs in comparison to competitors, difficulties in developing targets,

measures and controls to entrench sustainable practices within the organisation, difficulty in aligning social and environmental activities with corporate strategy and shareholder/investor pressure to deliver financial progress in the short term making it difficult to pursue long term sustainability goals.

Table 3.1 summarises these outcomes and illustrates the major focus on legitimacy and financial business case concerns.

Table 3.1 Summary of key outcomes of sustainability surveys

Survey	**Survey question**	**Key sustainability drivers**		
		Legitimacy	**Financial business case**	**Morality**
PWC (2002)	Top three reasons for adopting sustainable business practices	enhanced reputation	competitive advantages; cost savings	
PWC (2002)	Top three reasons for **not** adopting sustainable business practices	lack of stakeholder interest	no clear business case	lack of senior management commitment
EIU (2008)	Biggest benefits organisation hopes to achieve by adopting sustainable business practices (beyond those of compliance)		attract & retain customers; improved shareholder value; increased profitability	
EIU (2008)	Critically important objectives for a sustainability strategy	enhancing brand reputation; compliance with regulatory and legal obligations.	increasing revenues	

Legitimacy and financial business case concerns were also highlighted in a study conducted by Banerjee (2001:507), which aimed to reveal management perceptions of corporate environmentalism. His findings were that companies were more reactive to stakeholders that could directly impact on profitability and growth such as customers and regulators, and therefore the establishment of the legitimacy of green stakeholders was a difficult task. In line with financial business case motivations, most action appeared to originate from a focus on the economic bottom line with cost: benefit analyses determining the suitability of environmental projects.

The conclusion is repeatedly reached (Banerjee, 2001:507; Springett, 2003:84) that sustainability strategies are focused on legitimacy and financial business case issues and business does not appear to have undergone a fundamental paradigm shift. This has implications for efforts to move to global sustainability as it would appear that the current sustainability consciousness and awareness of companies remains firmly routed in the current paradigm, where financial motivations drive corporate action in respect of sustainability initiatives.

3.2 Climate change strategies

Climate change, as a relatively 'new' issue on the corporate sustainability agenda, is receiving greater attention and companies are increasingly reporting on climate change as part of their sustainability reports (KPMG, 2007:33). The Global Reporting Initiative G3 sustainability reporting guidelines require disclosure of "Financial implications and other risks and opportunities for organisations activities due to climate change." (Global Reporting Initiative, 2000) and in South Africa 26% of companies surveyed in 2006 addressed climate change in their sustainability reports (KPMG, 2006:27).

The question that then arises is whether corporate reaction to climate change is also driven by legitimacy and financial business case concerns, or whether there is some sign of a paradigm shift. There is a growing body of literature dealing with business reaction to climate change and the introduction of climate change strategies (Hoffman, 2005; Hoffman, 2006; Kolk & Pinkse, 2004; Kolk & Pinkse, 2005; Lovins & Lovins, 1997). The main focus is on the risks and opportunities arising from climate change, and the resultant impact on the bottom line. A study by KPMG (2007:33) noted that companies seemed to identify and take action on opportunities

presented by climate change action, with less of a focus on the management of risks. The authors suggest that this might be as a result of the fact that the general short term focus of companies would lead them to tap into profit opportunities currently presenting themselves through energy efficiency and related action, while risks from climate change, being a more distant threat would not be considered at this stage. The 'business case' for climate change is a key theme of much of this literature (Hoffman, 2005; Hoffman, 2006; Lovins & Lovins, 1997). Statements such as "The earth's climate can be protected not at a cost but at a profit" (Lovins & Lovins, 1997:1) and "Firms that incorporate climate change into their core business strategies will be in the best position to take advantage of emerging opportunities and gain competitive advantage" (Hoffman, 2006:vii) highlight the view that taking action on climate change will positively impact on the bottom line and therefore emphasise financial business case drivers as key motivational aspects underpinning climate change action.

A number of studies have been carried out to determine corporate motivations for climate change actions. Table 3.2 summarises the key outcomes of the studies and highlights the focus on legitimacy and financial business case drivers, with some attention paid to issues of morality. The studies are discussed in more detail below.

Table 3.2 Summary of key outcomes of corporate climate change responses

Study	**Aspect**	**Key sustainability drivers**		
		Legitimacy	**Financial business case**	**Morality**
Hoffman (2005)	Drivers for voluntary climate actions	preparing for regulation; elevating corporate reputation	operational improvement; accessing new sources of capital; improving risk management; identifying new market opportunities; enhancing	enhancing human resource management (improve morale)

			human resource management (retention of key staff)	
Hoffman (2006)	Motivation for undertaking climate action	reputation	cost savings	social responsibility (linked to corporate values)
Hoffman (2006)	Top drivers of climate related strategies	improving company reputation among consumers	desire for increased operational efficiency; remaining competitive with industry peers.	consistency with existing corporate culture; protecting the global climate; social responsibility
Hoffman (2006)	Top measures of success of climate related strategies	anticipating and influencing regulation; elevating corporate reputation	energy efficiency; operational improvement; cost savings	protect the global climate
Okereke (2007)	Top motivations for corporate climate actions	credibility and leverage in climate policy development; fiduciary obligations	profit; guiding against risk	ethical considerations

Okereke (2007)	Top drivers of corporate climate actions	regulation and government directives; investors pressure	energy prices; market shifts; technological change	
Bayon *et al.* (2007)	Top 5 reasons corporations cite for participating in the voluntary carbon market	influence future regulatory requirements and policy setting; preparing for potential regulatory requirements	competitive differentiation; better access to capital; ability to recruit, retain and reward staff.	inclusion in company wide corporate social responsibility and sustainability strategies
Hamilton *et al.* (2008)	Top 5 Customer motivations for buying offsets	anticipation of regulation; PR/branding	sales of products	corporate responsibility
McKinsey (2008)	Top factors which influenced companies to take climate change into consideration	corporate reputation; media attention to climate change; regulation; consumer requests or preferences		senior executives personal convictions

Hoffman (2005:23) suggests that the drivers for voluntary climate actions range from preparing for the eventuality that emission reductions become mandatory, to looking for opportunities to reap strategic and economic benefits. The so-called 'business

case' for climate action suggests that action taken by companies can have a direct impact on the bottom line through reduction in costs and increases in revenues driven by product and service innovation and the management of risks. Given the linkages to profitability of implementing a coherent and comprehensive climate change strategy, new research is emerging linking share price performance to the introduction of climate change strategies (Innovest, 2007:26). In addition, research is being undertaken to determine which industries will be most impacted in a carbon-constrained future, and which companies are best placed to benefit from such constraints (Carbon Trust, 2006b; Llewellyn, 2007; Woods & Wilder, 2005) which may ultimately influence share price performance. All of these studies support the business case for climate change and focus on the financial implications of taking action on climate change, once again emphasising the dominance of the strategic concept and its resultant focus on the financial business case.

However the financial business case is not the only motive driving climate change action. Hoffman (2006:22) identified some aspects of new paradigm thinking in terms of moral responsibility when his study of top drivers of climate change identified elements of social responsibility and protecting the global climate alongside issues of operational efficiency. However when companies were asked which measures of success were most important for climate change strategies the focus was on energy efficiency, operational improvement, cost savings and anticipating and influencing climate change regulations. Issues such as protecting the climate and social responsibility were also ranked as important but appeared further down the list. This seems to imply that while "doing the right thing" may be seen as a motivating factor, the benefits derived from adopting climate change strategies are seen primarily from the perspective of legitimacy and financial business case considerations.

A study carried out by Okereke (2007) differentiated between factors driving climate change action and motivational factors. His view is that drivers force business to take action in circumstances where they would not ordinarily have done so, in this study key drivers were identified as energy prices, market shifts, regulations, investor pressure and technological change. Motivators, which Okereke (2007:481) defined as factors which would result in action as part of the company's core business focus to maximise profits, were identified as profits, the ability to influence climate policy development, meeting fiduciary obligations, risk management and finally ethical

considerations in respect of protecting the company's reputation. Therefore, once again the motivating factors focus on legitimacy and financial business case concerns, with an aspect of morality expressed in terms of ethical concerns. A survey carried out regarding climate change action taken by companies (McKinsey, 2008:5) highlighted aspects of legitimacy and morality in the top reasons for climate change actions.

Some of the key reasons given for corporate participation in the voluntary market are clearly driven by legitimacy and financial business case issues for example anticipation of future regulations, competitive differentiation, marketing of carbon neutral product and recruitment and retention of staff (Bayon *et al.*, 2007:34; Taiyab 2006:16). On the other hand, there are indications that company motivations also include doing the right thing and protecting the environment (Bayon *et al.*, 2007:34; Hamilton, Sjardin, Marcello & Xu, 2008:67) which would point to a degree of ecological and moral responsibility entering into business strategies. However, it is difficult to ascertain the importance this plays when decisions are taken to engage in voluntary actions and whether this aspect is merely an added benefit, or a core driving factor.

3.3 Linking back to the proposed framework

The above discussion of different studies and surveys highlights varying reasons and motivations for corporate action in terms of sustainability and climate change actions. It would appear that all underlying drivers can be categorised in terms of the three main groupings of drivers, being legitimacy, the financial business case and morality which in turn tie back to concepts of stakeholder, strategic and paradigmatic shifts. Although companies may have underlying drivers from all three themes, it would appear that there is a dominant theme which characterises their engagement with the natural environment.

4 Is corporate sustainability consciousness evolving?

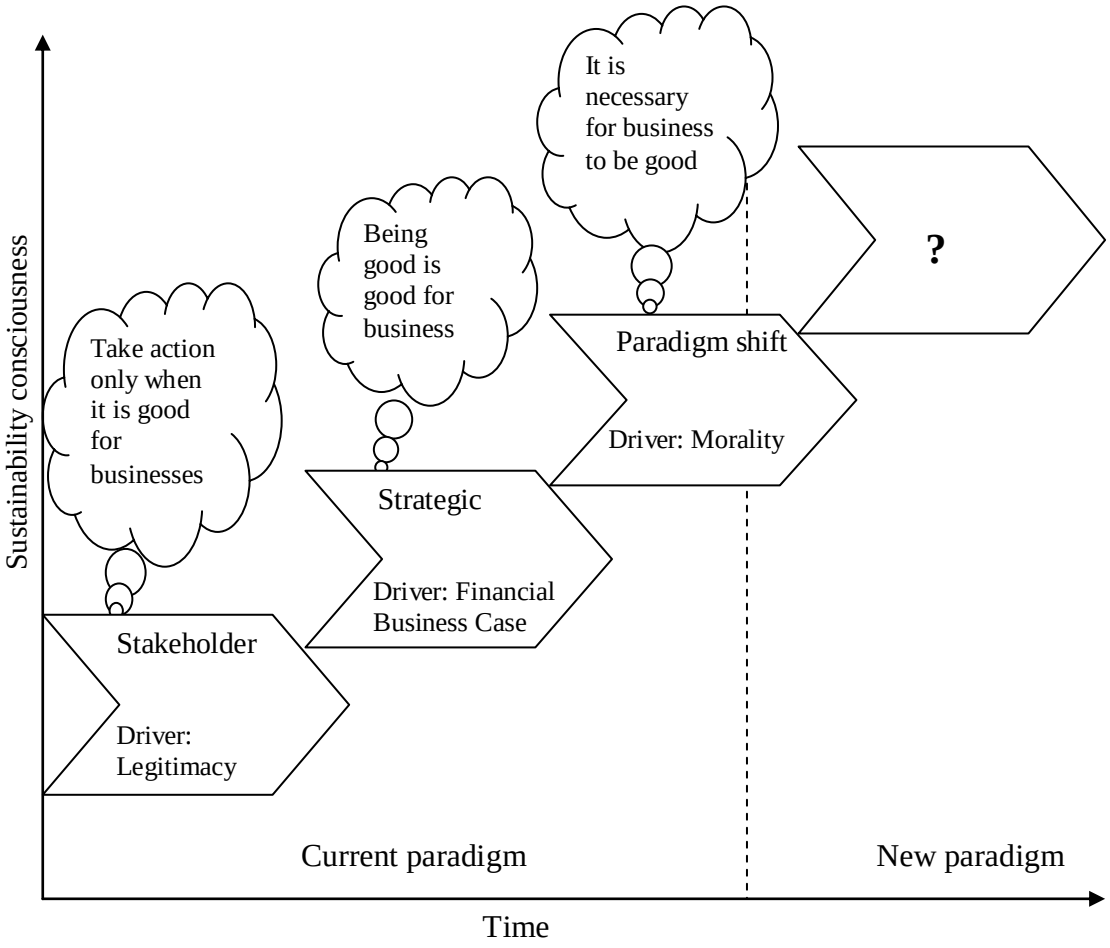
Having outlined the overall framework of corporate motivation for sustainability actions, a question that arises is whether company motivations are static and remain predominantly routed in one area of the framework or whether there is some kind of evolution of sustainability consciousness which begins with companies seeking legitimacy and moves towards a higher level of sustainability awareness in terms of

which aspects of morality become key motivators. Many have explored the concept of evolution of human consciousness (Laszlo, 2007:117) a recurring theme is the move from ego-bound to transpersonal consciousness which recognises interconnectedness with the biosphere. Is it possible that corporate sustainability consciousness can also evolve bringing about a shift from a self-centred profit focus to an interconnected altruistic viewpoint?

There is a growing body of literature that suggests that some aspect of evolution and progress underlie corporate approaches to sustainability. Zadek (1999:6) explains it as a shifting discourse which begins with the view that companies take action when it is good for the business, this moves to a view that being good is good for a business, until finally the view becomes "it is necessary for business to be good" (Zadek, 1999:6). Elkington (1999:41) discussed the evolution in terms of waves. Wave one was environmentalism driven from the outside by environmentalist calls to heed the damage which business was doing and the limits to growth. The second wave was characterised by 'green business' and the cross-over of environmentalism into corporate environmentalism. Elkington views the third wave as sustainability, with business increasingly recognising their connection to society and the environment and taking action to ensure that business is conducted in a responsible manner to achieve global sustainability. Hart (2007:14) explains the progression from obligation to opportunity and then finally a reorientation which takes business 'beyond greening'.

Figure 3.3 illustrates the concept of the proposed evolutionary process beginning with legitimacy concerns dominating corporate thinking, moving through financial business case motives towards a morality driven perspective. As can be seen in figure 3.3 the aspects of legitimacy and the financial business case are part of the current business paradigm which has a narrow financial capital focus. Businesses operating at these levels of sustainability consciousness continue to see sustainability from a financial standpoint. Efforts such as the triple bottom line attempt to include social and environmental aspects into the current paradigm, however sustainability is not about the bottom line and performance. Companies therefore drive the development of sustainability strategies which meet the needs of the current paradigm by impacting on the bottom line, but which fall well short of what is actually required to move towards global sustainability.

Figure 3.3: Proposed evolution of corporate sustainability consciousness



Source: Own observation.

The ideas highlighted in the growing body of literature dealing with a new paradigm for business, would appear to imply that new concepts and motivations will emerge as part of the new business paradigm, in which there will be "significant changes in how business function and what is valued by them" (Giacalone & Eylon, 2000:1221). Companies driven by morality appear to be moving towards this new paradigm through the recognition of the need to expand the focus of business beyond that of the financial bottom line. Albert Einstein was of the view that no problem could be solved from the same level of consciousness that created the problem. It would appear that the current paradigm of business driven by pure profit motivations in a financial capital orientated context is not sustainable given the continued deterioration of natural and social capital. Therefore a new consciousness is required to solve environmental and societal problems. This view is supported by proponents of a new paradigm for business who require a move away from the current dominant

neoclassical, post industrial paradigm, to a more inclusive and sustainable business paradigm.

The sustainability worldview of companies would be expected to influence the drivers of sustainability actions, and ultimately where a company would be placed on the continuum of sustainability consciousness. However, the factors that cause a shift in consciousness in a company or result in one company embracing moral responsibility while another continues to focus on legitimacy issues are not well understood. Investigations appear to focus on corporate culture (Howard-Grenville, 2006:48) and management attitudes, beliefs and values (Vazquez & Liston-Heyes, 2008:179) in explaining the divergences.

The study into South African actions in terms of climate change investigates the differences in the levels of evolution in terms of corporate sustainability consciousness and factors driving this evolution.

5 Motivations of corporate South Africa

From the international surveys and studies discussed above, it would appear that the key drivers for sustainability are legitimacy and the financial business case, and this is echoed in the motivations for climate change strategies, with some indication that elements of morality might also be driving corporate action with respect to climate change mitigation initiatives.

The question that arises is whether South African companies are motivated by the same factors as their international counterparts when it comes to sustainability investments, and how this translates in terms of their response to climate change issues. Investigation of these questions forms the basis of the empirical part of this study, however before proceeding to analyse these questions through interviews and case studies with selected South African companies, this section contains a general overview of the South African corporate sustainability landscape and highlights the views of sustainability drivers in this market.

As discussed in Chapter 2, South Africa has an advanced sustainable development framework from a macro perspective. In addition, corporate sustainability is explicitly included in the King II Report (King, 2002:6), therefore corporate sustainability efforts might be expected to be far advanced. No comprehensive survey has been carried out in terms of sustainability in the South African corporate sector, however a

specialist sustainability research panel, comprised of twenty professionals from the corporate, academic and NGO fields identified that South African companies are reputation-, issues-, and compliance-driven when it comes to the issue of sustainable business practice (Trialogue, 2007b:10). Legitimacy concerns would appear to drive sustainability action as companies respond reactively to stakeholder concerns. The same research panel (Trialogue, 2007b:13) highlighted that in terms of the total sustainability field, South African companies often led their international counterparts with respect to social issues, such as BEE transformation, HIV and Aids, poverty issues etc, mainly driven by the unique history and socio-economic challenges faced by South Africa. However, the panellists were of the opinion that South Africa lagged its international counterparts when it came to environmental issues. The general view was that responses to environmental issues were still mainly compliance driven with a companies often focussing on economic growth and social development to the detriment of the environment. However, given the interrelatedness of all three aspects, this is a worrying trend, especially in light of the warnings regarding the adverse effects that will be felt from both an economic and social perspective if environmental degradation continues.

Other forces which have been identified as driving South African sustainability responses include compensating for lack of government action in terms of social issues, fear of litigation, requirements to conform to international standards and efforts to enhance brand and marketing efforts (Bezuidenhout *et al.*, 2007:68). Once again the key theme would appear to be legitimation and some elements of the financial business case.

To further investigate the forces driving sustainability in South Africa, it is useful to consider the area of corporate social investment (CSI) spend where data is available to track the trends of corporate spend on social and environmental issues. South African companies have a reasonable track record in terms of CSI with spend increasing from R1.54 billion in 1998 to R3.2 billion in 2007 (Trialogue, 2007a:72). The question that arises is whether this spend is related to companies doing good for the sake of doing good (i.e. morality), or whether this is a response to outside pressures (i.e. legitimacy). If the development of CSI in South Africa is examined over the past 10 years it becomes apparent that one of the major drivers of increased focus on CSI has been an increasingly prescriptive approach from Government in terms of obligations

placed on business to partner with government with respect to socio-economic development efforts (Trialogue, 2007a:17). This would appear to indicate that business is responding to legitimacy issues by focussing on issues which government requires them to address. The development of the Department of Trade & Industry's Code of Good Practice and the proliferation of sector transformation charters have renewed the focus on CSI, with the Black Economic Empowerment (BEE) Codes requiring 1% of net profit after tax to be spent on socio-economic development. An examination of corporate spend on CSI initiatives reveals that the majority of CSI initiatives, representing 87% of total CSI budgets, are focussed on social issues such as education, health and HIV/Aids, job creation, training and social development while environmental initiatives attracted only 5.2% of CSI expenditure in 2007 (Trialogue, 2007a:79). It is thought that the recent high profile coverage attached to climate change issues might lead to companies redirecting CSI spend to environmental issues (Trialogue, 2007a:163), however if legitimacy concerns are the dominant drivers in a South African corporate context, then the risk is that companies will continue to focus on fulfilling the expectations of government regarding socio-economic development, to the detriment of the environment.

However, CSI expenditures only show one aspect of the bigger sustainability picture focussing on how companies spend their profits. Of greater importance in terms of corporate sustainability is how companies generate these profits. Do they take environmental and social issues into account in terms of their day to day business practices? There is limited information available to determine the extent of sustainability activities directed to environmental issues in a South African context as one of the key issues faced is how to differentiate between stated or revealed motivation versus implied or embedded motivation. Many companies now produce sustainability reports, and highlight various initiatives and actions. However there appears to be a wide gap between what companies say and what companies do when it comes to ecologically sustainable development with most companies not committed to full-scale internalisation of environmental costs, reducing waste, remedying prior environmental impacts and looking for clean technology alternatives (Bezuidenhout *et al.*, 2007:85). The general view is that South African companies, with a few exceptions, have not embedded sustainability into their business strategies and values (Trialogue, 2007b:11). However, a survey conducted for WWF (du Plooy, 2006:46-

47) gave a different view with 72% of respondents claiming that environmental sustainability was part of their company's vision and 80% claiming that environmental sustainability was part of their company's core values. The discrepancy in views between company perceptions of their sustainability values and actions, and external perceptions complicate efforts to understand sustainability in a South African corporate context. Hamann (2006:191) is of the opinion that discrepancies do not necessarily result from companies "wilfully misrepresenting their impacts" but rather result from the "different perceptual lenses applied" to issues such as sustainable development. If this is the case it reiterates the importance of understanding what the sustainability worldviews are of companies in South Africa to meaningfully interpret their sustainability actions.

The above discussion has set out some of the perceived drivers of corporate sustainability actions in a South African context. The dominant theme appears to be that social aspects receive the most attention from South African companies, who appear to be driven primarily by legitimacy concerns. In order to further investigate these issues the remainder of this study will focus on South African corporate responses to climate change.

Climate change is considered by many to be one of the key challenges facing humanity in the 21st century. It represents a unique snapshot of the sustainability challenge, highlighting the interconnectedness of economic, social and environmental issues. Decisions taken in respect of economic and social policies have direct and indirect impacts on the climate, and at the same time economic growth and social development are impacted by climate change. Southern Africa is expected to be one of the areas that will be worst affected by climate change (Trialogue, 2007b:158) and therefore climate change mitigation efforts should be a top priority for both government and business in South Africa. However, the reaction of business has been mixed with many businesses doing little or nothing to reduce their carbon footprint (Trialogue, 2007b:167). The recent energy crisis in early 2008 has probably done more to raise awareness of energy efficiency than the fact that according to DEAT (2008) the country is one of the top 10 emitters of GHG primarily as a result of the burning of fossil fuels, once again emphasising the reactive stance of many businesses in South Africa.

Currently there is little information available concerning the motivations for climate change action from a South African corporate perspective. One of the first surveys conducted in respect of South African climate change response was the Carbon Disclosure Project's South African report in 2007. The results of CDP for South African companies (Tyler, 2008:32) revealed a high awareness of climate change issues, 89% of responding companies believed there were business opportunities associated with climate change, with 82% considering climate change to represent commercial risks. However, companies appear to have taken very little action in terms of these risks and opportunities, with only 36% reporting the implementation of emission reduction programs with targets. There appears to be very little engagement with government on the issues of climate change, and only 25% of companies disclosed that they considered the possibility of future emission caps for South Africa. This would appear to indicate that South African corporate response to climate change mirrors its reactive stance in terms of general sustainability issues, however some companies do appear to be taking action. Therefore investigating this aspect of corporate sustainability could provide insights into the differing motivations and worldviews of companies in South Africa in terms of their response or lack of response to climate change issues.

6 Conclusion

The framework proposed in section 2.4 highlights three key areas which set out particular conceptual linkages between business and the natural environment. An investigation of international surveys and studies indicates that the drivers of corporate actions both in terms of sustainability and climate change can be divided between these three areas. Dominant drivers appear to be legitimacy and financial business case considerations highlighting the continued financial capital focus of corporate sustainability actions. There are indications that companies can evolve in terms of their sustainability consciousness and that some companies are more evolved than others, however the factors driving this evolution are not well understood.

There is little information on what drives sustainability actions from a South African corporate perspective, however the general perception would appear to be that the key motivation for sustainability actions is legitimacy concerns. The suggestion that South African companies are issues driven and reactive in terms of sustainability issues appears to be carried over into climate change issues too where few companies appear

to be proactively engaging in respect of climate change action. However those companies taking action could represent some form of evolution in terms of corporate sustainability consciousness.

Chapter 4 outlines the research method selected for the empirical phase of the study and provides an overview of the process followed in terms of selection of case studies and the collection and analysis of data.

Chapter 4: Research methods

1 Introduction

The empirical part of this study focuses on investigating the underlying drivers of corporate sustainability action from a climate change perspective among South African companies and determining whether there is an element of evolution in respect of the concept of corporate sustainability consciousness. Chapter 2 and 3 have led to the development of a proposed conceptual framework of corporate sustainability and the focus of the remainder of the study is on empirically testing this conceptualisation and adjusting or extending the proposed framework.

This chapter examines the research methods available for empirically testing the proposed conceptual framework and highlights the method selected and the reasons for selection. Next the process followed in selecting the research subjects is examined and the chapter concludes with an overview of the research process followed in terms of the selected research method.

2 Alternative research methods

The selection of an appropriate research method depends on the particular environment being investigated, and the nature of the research problem (Johnson & Harris, 2002:100). A distinction can be drawn between structured and unstructured research environments (Arnold, 1982:52; Johnson & Harris, 2002:100) with the former depicting environments where there is a reasonable level of existing knowledge, with known variables and relationships between variables. In contrast, an unstructured research environment would typically display little existing knowledge with little known about constructs, variables and relationships between variables. Arnold (1982:52) suggests that a structured environment would need to meet two pre-conditions. First the phenomenon studied needs to be highly structured and second, a clear understanding of the structure needs to exist. The table below provides an overview of the impact of structure on the research process.

The decision as to which strategy to use is therefore a function of the structure of the research environment, as illustrated in table 4.1, and the research question posed. A structured research environment generally lends itself to quantitative research, whereas more unstructured environments tend to require qualitative research.

Table 4.1 Implications of Structure on the Research Process

Environment	**Structured**	**Unstructured**
Research Method	Survey Experiment	Ethnography Grounded theory Case study
Research Techniques	Fully structured; closed ended techniques	Semi-structured; open ended techniques
Data collection tools	Questionnaire Closed end interviews Documents	Open ended interview Observation Documents
Outcome	Generalise from sample to population (primarily deductive)	Pattern recognition, theory development (primarily interpretive)
When is it appropriate to use	Large body of literature Well developed theory to test Variables are known	Little, if any literature Little, if any theory Variables unknown
Some issues to consider	Potential bias in sampling and response Need to know what to ask AND what the potential answers are Require well worked out theoretical scheme or analytical framework Relatively inflexible	Choice of subject or case requires theoretical rather than statistical sampling Researcher bias Potential lack of objectivity Creates continual reality check Flexibility

Source: Arnold, 1982; Creswell, 1994; Johnson & Harris, 2002; Thomas, 2004.

However, the distinction between qualitative and quantitative is often misleading as various tools and techniques used in both of the above areas have qualitative and quantitative elements (Gephart, 2004:455). The distinction between qualitative and quantitative research is considered to be oversimplified, with suggestions that a

distinction is rather made been objective and subjective approaches (Morgan & Smircich, 1980:497). The positivist research tradition supports an approach that uncovers facts and test hypotheses and therefore occupies the structured, objective end of the continuum. An interpretive research tradition focuses on describing meaning and obtaining understanding and occupies the unstructured, subjective end of the spectrum (Gephart, 2004:455). This is not to say that either of the two approaches is correct or incorrect, their applicability depends on the specific circumstances of the study being undertaken. There are advantages and disadvantages in using structured (quantitative) research methods and unstructured (qualitative) research. The following section highlights some of the key issues which were considered in the selection of an appropriate research method for this study.

2.1 Structured (Quantitative) research

One of the key strengths of quantitative research is the ability to generalise findings from a sample to a broader population. Hypotheses can therefore be generated and tested. However, this is subject to addressing a host of factors, including issues of replicability, reliability, external and internal validity (Johnson & Harris, 2002:102). One of the popular methods of data collection entails conducting surveys, however a number of problems are encountered in survey based research. These problems relate to issues of bias in terms of sample selection and response bias as a result of the fact that certain participants may choose not to answer a survey instrument or supply answers which they believe are ‘correct’ rather than true which could lead to incorrect conclusions being drawn regarding the total population. Added to this are factors surrounding who actually answers the questionnaire, and more importantly their level of knowledge regarding the subject matter.

Perhaps the most significant drawback of the survey method is the limited ability to investigate context (Yin, 1994:13). As Johnson and Harris (2002:102) highlighted, “you only get answers to the questions that you ask”. This is therefore the essence of the issue when making a decision to follow a structured approach, as all questions need to be identified prior to commencing the investigation, and more importantly, the range of possible responses need to be known. In a field where relatively little is known about the subject matter under investigation or the range of responses that can be expected, a survey approach could result in the exclusion of key issues and

constructs and an incomplete understanding of all variables and relationships between variables.

2.2 Unstructured (Qualitative) Research

As highlighted in table 4.1 there are various research methods which are categorised as qualitative. All of the methods undertake in-depth studies of a limited number of cases in their natural setting. Case study research is sometimes seen as a collective term for the various methods applied in this field. However underlying methods can be discerned from the data collection tools used, and the method of analysis applied to a particular case, in general the methods can be divided into ethnography, grounded research and case studies. Qualitative research has its origins in the field of ethnography with a focus on field work and immersion in the culture which is being studied. Ethnographic studies typically focus on obtaining in-depth insights into organisational culture following extended periods of time observing a particular organisation. Therefore studies which focus predominantly on field work and observation techniques are sometimes classified as ethnographic studies. Another classification, that of grounded theory, is applied to studies that derive theory through an iterative process of data collection and theory refinement. This technique was first described in 1967 by Glaser and Strauss in their research monograph *The Discovery of Grounded Theory: Strategies for Qualitative Research* (Partington, 2002:136). The twin pillars of constant comparison and theoretical sampling are hallmarks of this particular research strategy, with grounded theory following an iterative process where a researcher continues to collect data and refine theory until no new evidence is found, this process is known as 'category saturation' and is a key requirement for complete theory development (Suddaby, 2006:636).

The third research method mentioned in table 4.1 is case study research. It has in the past been excluded from formal research strategies, however this has changed considerably with it becoming an increasingly common technique in accounting research (Ryan, Scapens & Theobald, 2002:142). Yin (1994:13) considers case study research to be a "comprehensive research strategy". This method overcomes many of the drawbacks of surveys; in particular it can provide greater insights into a particular area through the use of multiple data sources, semi-structured interviews, and open ended questions which allow the researcher to follow up on particular cues which emerge in the research process. For these reasons, it has been suggested that case

studies are useful in areas where theory is less developed (Ryan *et al.*, 2002:149). More generally, it has been suggested that case study research has three main purposes: to provide description, to build theories and to test theories (Eisenhardt, 1989:535; Thomas 2004:128). Descriptive studies seek to explain phenomena where little is known of the particular phenomenon being studied. In respect of theory building, a case study approach has the key advantage of empirical validity as a result of the real world environment in which theory generation occurs. However the narrow focus of case studies generally lead to theories which explain specific phenomena, and therefore restrict the ability to create 'grand' theories applicable in a more generalised sense (Eisenhardt, 1989:547). Theory testing allows for comparisons between existing or proposed theories or frameworks and real world situations.

Commonly cited drawbacks of case study research include issues regarding the ability to generalise from a limited number of studies, and the problem of equivocal evidence or biased views which might influence conclusions (Yin, 1994:9). However, the latter can be overcome by ensuring rigour in case study research design, and the former issue of generalisation needs to be understood in the context of analytical generalisation, rather than statistical generalisations. Statistical generalisations result from conclusions drawn about a population or universe as a result of the observations in a particular sample. Case study research should not be used for statistical generalisations as cases are not selected as sampling units. Rather cases should be selected for their ability to assist in theory development and testing using the method of analytical reasoning in terms of which a "previously developed theory is used as a template with which to compare the empirical results of the case study" (Yin, 1994:31). According to Ryan *et al.* (2002:150) case studies facilitate theory development as existing theories or concepts are used to interpret observations arising from case study research, and these observations are in turn used to modify, refine or reject the original theory or concept. In light of the above, it is clear that case studies can be a useful analytical tool for theoretical and conceptual framework development in new or poorly understood areas.

2.3 Selection of method

Empirical investigations into the field of corporate sustainability, and more recently climate change, have used a number of methods and research tools include conducting surveys using questionnaires (Banerjee, 2002a; EIU, 2008; PWC, 2002) and

documentary evidence (Okereke, 2007) and carrying out case studies using interviews and documents (Bansal & Roth, 2000).

However, as the above discussion has demonstrated, it was necessary to determine which research process or strategy was most applicable in light of the specific study and its research environment. As chapter 3 illustrated, the corporate sustainability environment is not well understood. While theories to explain corporate behaviour have begun to emerge from an international perspective (Bansal & Roth, 2000), theories explaining the actions of companies in respect of general sustainability in a South African context touch on high level issues but are not well developed. In addition, given the focus of this particular study on climate change strategies, theories to explain corporate climate change actions are limited.

All of the above issues highlight that variables, relationships between variables and constructs in this particular research area are not fully understood. Therefore, making use of structured research methods such as a survey to attempt to answer the research questions could result in the omission of key issues leading to an incomplete understanding of the research area. Knowing what the right questions are to ask, and understanding the range of possible responses is thus not feasible in this particular research area.

The ability of qualitative research methods to follow a more interpretive process focussing on description and understanding meanings and implications (Gephart, 2004:457) highlight the suitability of this method to areas where the level of existing knowledge makes it difficult to find specific variables and constructs to test. The key advantage of flexibility and ongoing learning that occur in a qualitative research process provide the opportunity to gain deeper understanding of the phenomenon being studied, and allow the study to expand to include additional insights gained in the research process.

Therefore, from a research environment perspective, an unstructured qualitative research approach was preferred. The second issue to consider was the aim of the study and determining the most appropriate qualitative research method and data collection tools. In light of the fact that the study aimed to understand whether the proposed framework developed in Chapter 3 was applicable in the South African sustainability context, particularly as it relates to voluntary climate change strategies,

following a case study method which allowed for the testing of the proposed conceptual framework in real world situations was the preferred method. The other two research methods outlined above, ethnography and grounded theory were not considered ideal for this study. Ethnography is a time consuming process given that the investigator needs to be immersed in the culture of the organisation being studied, and take part in the day to day activities as either a participant or observer. This was not feasible given the time constraints of this study, as well as the aim of the study to investigate multiple organisations rather than a single organisation (discussed further in section 3.2). The method of grounded theory was also not appropriate in terms of this study as the purpose of this study was to test theory rather than to develop theory, with the latter being the key objective of the grounded theory method.

Although case studies were traditionally perceived to be "soft" research, in many respects, "the "softer" a research strategy, the harder it is to do" (Yin, 1994:16). Therefore it is important to select the appropriate methods and research design to ensure successful case study research. In order to ensure that these criteria were met, section 3 considers the type of case study to be undertaken, whether single or multiple case studies are appropriate in the context of this study, and the selection method of cases. Section 4 outlines how quality research design was ensured in this study.

3 Case study development

3.1 Type of case study

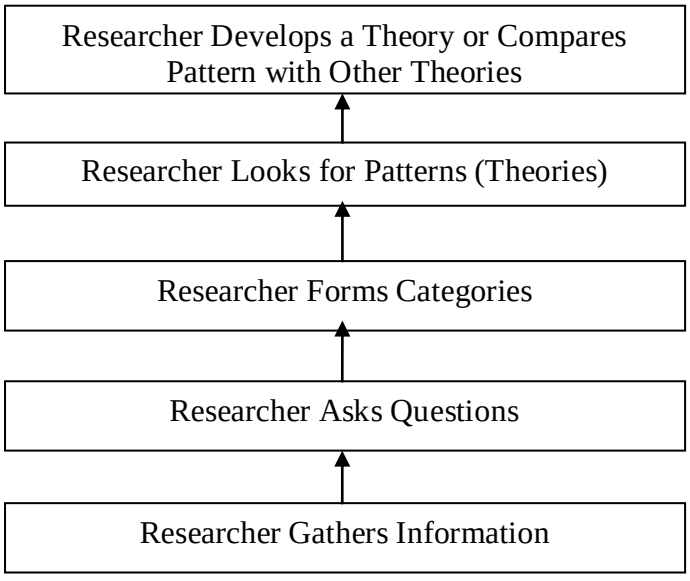
Case study research can be broadly categorised as either positive or interpretive research. Ryan *et al.* (2002:147) highlight the key differences between these two categories, with positive research focussed on developing general theories through exploratory case studies which contribute to idea and hypothesis generation and interpretive research focusing on developing frameworks "capable of explaining the holistic quality of observed social systems and the practices of human actors" (Ryan *et al.*, 2002:147). Therefore interpretive research contains elements of both an exploratory and explanatory nature in the development of particular case studies.

A key differentiating factor is the mode of analysis used by the researcher, with a choice of deductive, or alternatively, pattern analysis. The deductive model allows the researcher to move from a specific observation to a more general conclusion, using case studies to develop and sometimes test hypotheses and is therefore more suited to

positive research. However, using deductive approaches, in case study research, is generally only seen as a preliminary or first step in a particular research study, where a hypothesis is developed. The crucial work of hypothesis testing needs to be carried out using other methods which are more suited to statistical generalisation. Any attempt to use deductive reasoning in case study research to test hypotheses usually leads to statistical generalisation problems due to the limited number of observations. In this respect deductive reasoning, applied in a case study context, is recognised as an acceptable method to generate hypotheses but not to test them (Ryan *et al.*, 2002:148).

The pattern model uses empirical observations to contribute to developing an understanding of how a system operates, without necessarily predicting future outcomes, lending itself more to interpretive research. While deductive models suit circumstances where relationships between variables are stable and should be used primarily for hypothesis generation, pattern models allow analysis in a dynamic environment where variables and relationships continually change (Ryan *et al.*, 2002:148). Figure 4.1 sets out the process followed in pattern driven reasoning.

Figure 4.1 The Inductive Mode of Research in a Qualitative Study



Source: Creswell, 1994:96

Therefore, in the context of this study, interpretive research was undertaken using pattern models to analyse the data. The implication was that cases would be selected for their ability to assist in understanding the system rather than their ability to

contribute towards hypothesis generation. In this respect, cases were analysed in terms of the conceptual framework, proposed in Chapter 3, to determine its ability to explain observations emerging from these selected cases. Depending on the outcome of the study, the framework could then be modified or extended to encompass the issues emerging out of specific cases.

3.2 Single vs. multiple case studies

Single cases are usually selected when they represent a "critical" or "extreme or unique" case (Yin, 1994:39). Multiple cases, on the other hand, allow for the researcher to follow a replication process. In this context replication can be viewed from two perspectives, first literal replication, and second theoretical replication (Yin, 1994:46). Literal replication aims to determine whether similar results are produced from multiple cases, whereas theoretical replication case studies are selected to produce "contrasting results but for predictable reasons" (Yin, 1994:46). Therefore the former is used to compare cases while the latter is used to contrast selected cases which are predicted to differ in terms of the proposed theory or conceptual model being tested.

In this respect, this study made use of multiple cases and explored aspects of both literal and theoretical replication. The literal replication logic applied in this study investigated whether multiple cases fitted into the proposed conceptual framework. In addition, a cross sectional analysis was carried out to determine theoretical replication in terms of which contrasting results were sought from various cases based on perceptions about the level of sustainability evolution displayed by a particular case.

3.3 Selection of case studies

For the multiple case selection procedure it is important to note that the decision as to the number of cases to study does not revolve around selecting a "representative" sample of cases, as the intention is not to create statistical generalisations, rather the case selection should be based on identifying cases that are distinct (to provide theoretical replication) and cases that are comparable (to allow for literal replication). All selections therefore support theory development and testing rather than being seen from a sampling perspective.

To determine which companies to select, consideration needed to be given to the theoretical or conceptual elements the study intended to uncover. This empirical phase

of the study focused on determining the applicability of the conceptual framework in real world situations. The study therefore needed to determine whether the drivers of voluntary climate change action in corporate South Africa could be categorised in terms of the three areas identified in the conceptual framework (legitimacy, financial business case and moral responsibility) and whether there were differences in the drivers of companies perceived to be leaders in the field of sustainability compared to companies who are perceived to be less responsible or sustainable.

As the research area was particularly undeveloped from a South African perspective, the intention was to limit the scope of this study both from a complexity and subject matter perspective to allow for initial theory testing. Therefore, from a complexity perspective, the study focused only on a limited number of industries in South Africa. From a subject matter perspective the case studies focused on corporate climate change strategies and responses as part of overall corporate environmental sustainability strategies.

The figure 4.2 sets out the steps which were followed to select appropriate cases, adapted from Eisenhardt (1989:536) and Yin (1994:38).

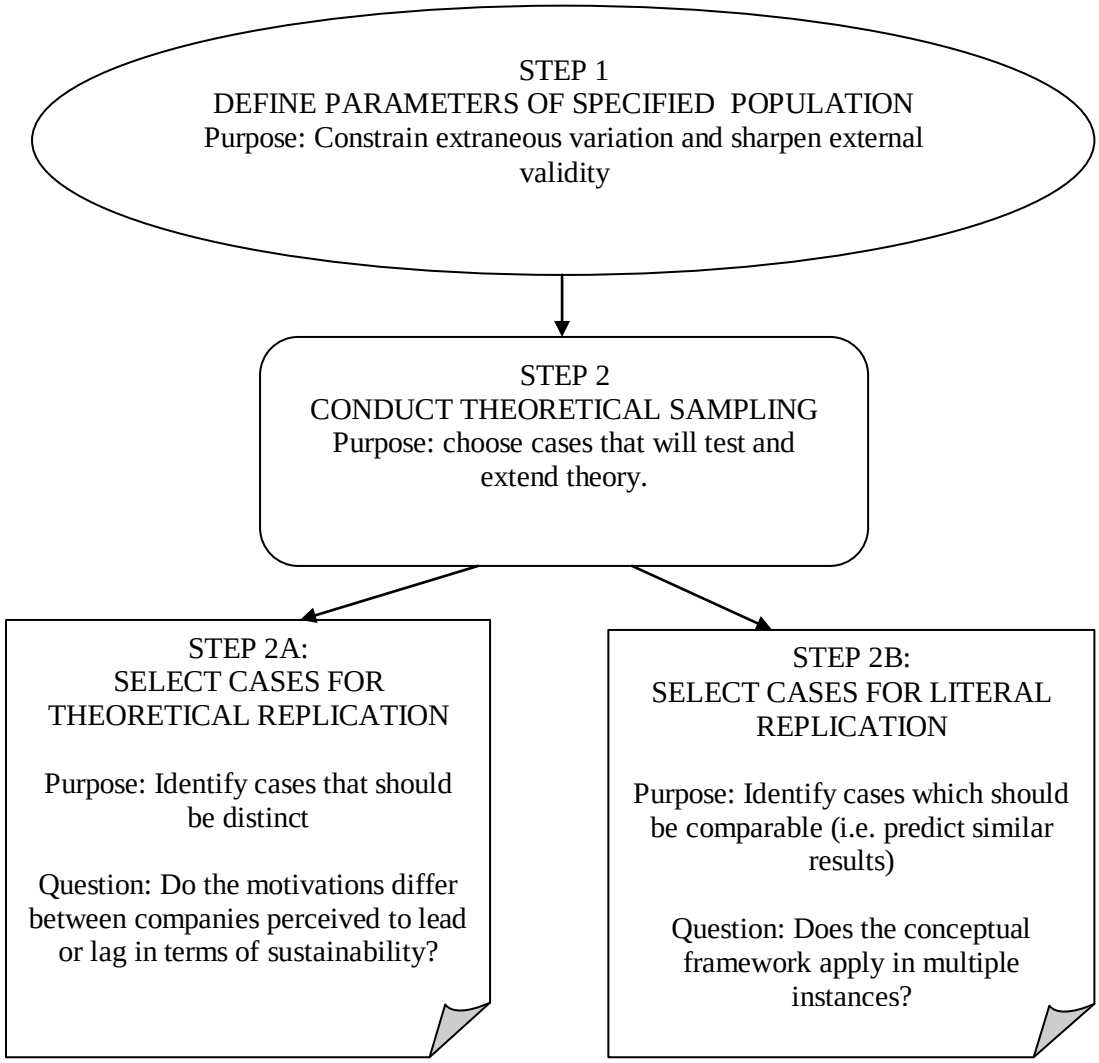
Step 1: Define population parameters

For the purposes of this study the population parameters needed to define which companies would be included in the universe from which specific case studies were selected. A primary consideration in specifying the population for this study was that there needed to be an external sustainability rating for all companies in the population to allow for identification of companies that are perceived to lead and lag in terms of sustainability. In addition, in order to facilitate access to information in terms of annual financial accounts and sustainability reports, the companies needed to be public companies listed on the JSE Securities Exchange.

Therefore the initial population parameters are summarised as follows:

1. Companies must have a sustainability ranking accorded to them by a third party.
2. Companies must be listed on the JSE Securities Exchange

Figure 4.2: Overview of selection of cases



Source: Adapted from Eisenhardt (1989:536) and Yin (1994:38).

The challenge in meeting the first parameter specified above, was the lack of information regarding corporate sustainability ratings in a South African context. Most studies that have been carried out focus on sustainability reporting standards rather than on identifying sustainability leaders. However in recent years, this situation has changed with the introduction of the Accountability Ranking. The Accountability Ranking (Accountability, 2007), provides an external rating of perceptions of corporate responsibility and accountability of the top 51 South African companies listed on the JSE (refer to Annexure I for details of the 2007 rating). The Accountability rating evaluates, using publicly available information, the level of accountability that companies display to their stakeholders in terms of the socio-economic impact of their business operations. In South Africa, the research is conducted by the UNISA Centre for Corporate Citizenship and focuses on measuring

key aspects of strategy, governance, engagement and impact in terms of specific socio-economic and environmental considerations (Accountability, 2007; Trialogue, 2007b:32). Therefore given that the companies analysed in terms of the Accountability ranking meet all of the population parameters specified above, the population for this particular study consisted of the top 51 companies listed on the JSE in 2007 (as ranked by turnover in terms of the Financial Mail Top Companies Report 2007 (Financial Mail, 2007)).

Step 2: Conduct theoretical sampling

Step 2 required the identification of suitable cases from the population defined in step 1. If the proposed conceptual framework outlined in chapter 3 was applicable it was expected that the following statements would hold:

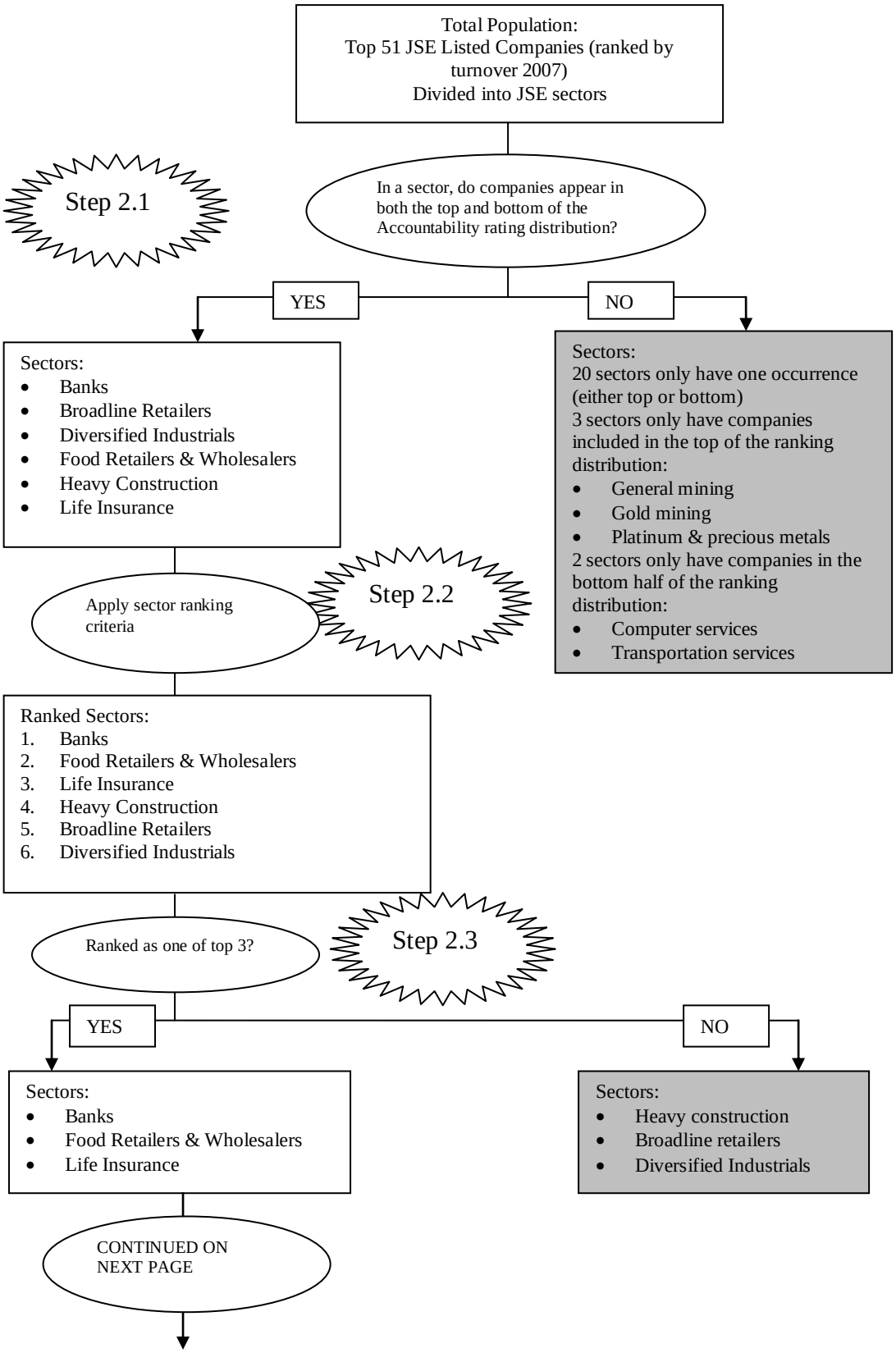
1. Company motivations for voluntary climate change action are expected to fall into the three categories described in the conceptual framework.
2. Companies who are considered to be more evolved from a corporate sustainability consciousness perspective are expected to display different motivations or drivers than companies considered less evolved in terms of sustainability consciousness.
3. The abovementioned outcomes should apply to more than one industry

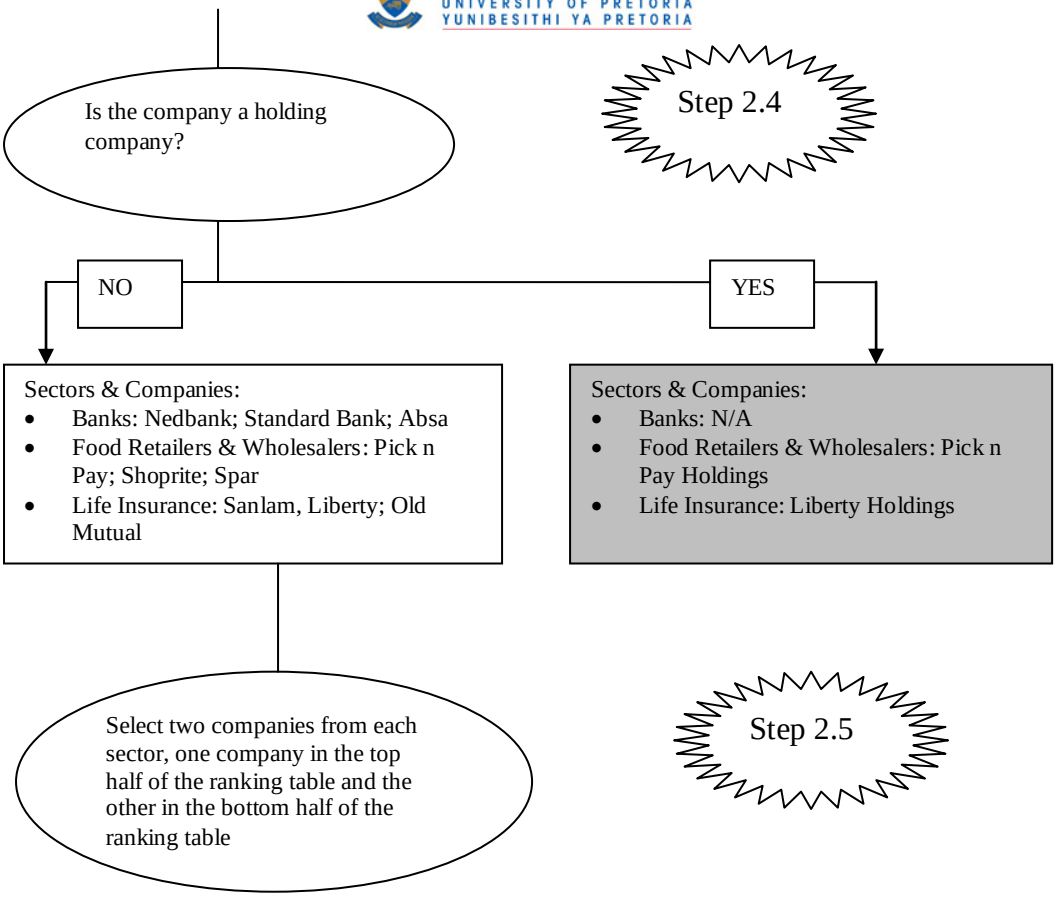
As previously mentioned the study focused on testing both theoretical and literal replication in terms of the cases selected for this study. From a theoretical replication perspective the study aimed to discover whether motivations corresponded to the conceptual framework in general and whether differences were observed between companies that lead and lag in terms of sustainability. From a literal replication perspective the study aimed to discover whether these outcomes held in more than one industry.

The process followed to select the final industries and companies included in this study is illustrated diagrammatically in figure 4.3. The elimination process required the application of predominantly objective criteria, however in certain instances subjective criteria were used, this is explained in more detail below.

The flow diagram illustrates the following process of selection and elimination. Prior to the commencement of the selection process companies were grouped into their respective sectors (as per the JSE sector classification).

Figure 4.3: Process followed to select cases from overall population:





Step 2.1: The primary requirement for theoretical replication is that a particular sector needs to have companies in both the top and bottom half of the Accountability rating distribution to allow comparisons to be drawn between companies that lead and lag in terms of sustainability in a particular sector (the company rated as 26 out of 51 was considered the cut off point between the top half and bottom half of the ratings). Therefore this step in the selection process eliminated all sectors with only one company in the population, and all sectors with companies clustered only in the top, or only in the bottom of the Accountability rating distribution. The remaining six sectors each fitted the criteria for theoretical replication. However, due to time constraints, it was decided that a total of three sectors would be selected from which to draw companies to include as case studies. It was assumed that three industries would provide sufficient information for the literal replication aspect of this study allowing the testing of the applicability of the conceptual framework across three sectors.

Step 2.2: In order to determine which three sectors to select the following ranking criteria were considered:

i. Homogeneity of the businesses and operating environment of companies in a particular sector.

ii. Level of knowledge and experience of investigator with respect to each sector

iii. Any other factors which should be considered.

Factor (i) was included to ensure that any extraneous variables which might complicate the comparison between leading and lagging companies in a particular sector were eliminated, Therefore preference was given to sectors which contained companies with more homogenous business and operating environments (Banks, Food and Wholesale Retailers, Insurance and Heavy Construction).

In terms of factor (ii) the investigator in this study has extensive experience in the financial sector, having worked in this sector for 10 years, and being a CFA charterholder. This experience was expected to provide additional insight into the cases considered in the banking sector and to a lesser extent, the insurance sector. In addition, given the nature of the food and wholesale retailers sector, the investigator has interacted with this sector as a consumer, which was also expected to provide additional insights into this sector.

Additional factors considered in terms of (iii) above highlighted that the choice of food retailers as a study group has previously been recommended for environmental study purposes (Bansal & Roth, 2000:719) due to three key factors: the wide range of ecological issues facing food retailers; firms in this sector are usually fairly similar in terms of the products they offer, their ecological impact and their company structure and size; and companies in this sector have not been extensively studied in respect of their ecological policies providing opportunities for uncovering fresh insights. These issues are relevant from a climate change strategy perspective and would appear to apply in a South African context. Therefore the choice of this sector was expected to enhance this study for the abovementioned reasons.

Step 2.3: The combined effect of factors (i) (ii) and (iii) resulted in three sectors emerging as preferred sectors in terms of this study: Banks, Food & Wholesale Retailers and Insurance. The other three sectors were eliminated from the selection process.

Step 2.4: A decision was taken to eliminate any holding companies included in the sectors as the focus of this study is on the operational entity and not the holding

company. In both cases where holding companies were eliminated, the underlying operational subsidiary remained in the population from which cases would be drawn.

Step 2.5: The final step in the selection process focussed on selecting a company in the top half and bottom half of each of the selected sectors. These were the companies which were subjected to further analysis as case studies. In total six cases were analysed (two from each of the selected sectors).

The selection process adopted in this study resulted in the selection of companies in industries considered to be low impact from a climate change perspective when considering direct impacts. However, all of the selected sectors have far reaching indirect impacts as a result of financing and investment decisions related to high impact companies in the banking and insurance sectors, and the ability to influence supply chain dynamics in respect of the food retailers sector. The results of this study might differ for higher direct impact companies who may have different motivational factors. Investigating these differences falls outside the scope of this study and is an area requiring further research.

To facilitate greater co-operation and hopefully elicit a truer reflection of company motivations, all respondents were assured that their responses would remain anonymous, and that companies would not be identified by name. In order to maintain confidentiality of the respondents and companies each of the three industries selected in terms of the process outlined above was allocated a specific identifier (A, B or C) and within each industry the company in the top half of the Accountability ranking was categorised as 1 (i.e. A1, B1, C1) and the company in the bottom half of the ranking was categorised as 2 (i.e. A2, B2, C2).

4 Case study research process

In order to ensure quality research design for this study, the four tests proposed by Yin (1992:32) being construct validity, internal validity, external validity and reliability were applied. In summary, construct validity was achieved through the use of multiple data and evidence sources. Using pattern models of analysis to interpret case study findings contributed towards internal validity. External validity was achieved through carrying out replication logic across the case studies reviewed. Finally, reliability was enhanced through the use of a case study database and implementation of a case study protocol.

The following sections highlight the course of action followed in each phase of the research process and where the abovementioned tests fit into the process. Figure 4.4 provides a diagrammatic overview of the process. Phase 1 of the research process which focused on the initial development of a conceptual framework has been outlined in chapter 2 and 3.

5 Empirical research (Phase 2)

5.1 Selection of cases

Section 3 discussed the selection process followed to determine the actual companies considered in terms of the case studies. The replication logic applied in the selection of cases contributed towards ensuring external validity.

5.2 Design data collection protocol – Case Study Protocol

The case study protocol sets out the field procedures which were followed, the case study questions which were posed to the respondents and the guide used for the case study report. This application of this protocol enhances reliability and assisted in reducing errors and bias. The case study protocol is outlined in the following sections.

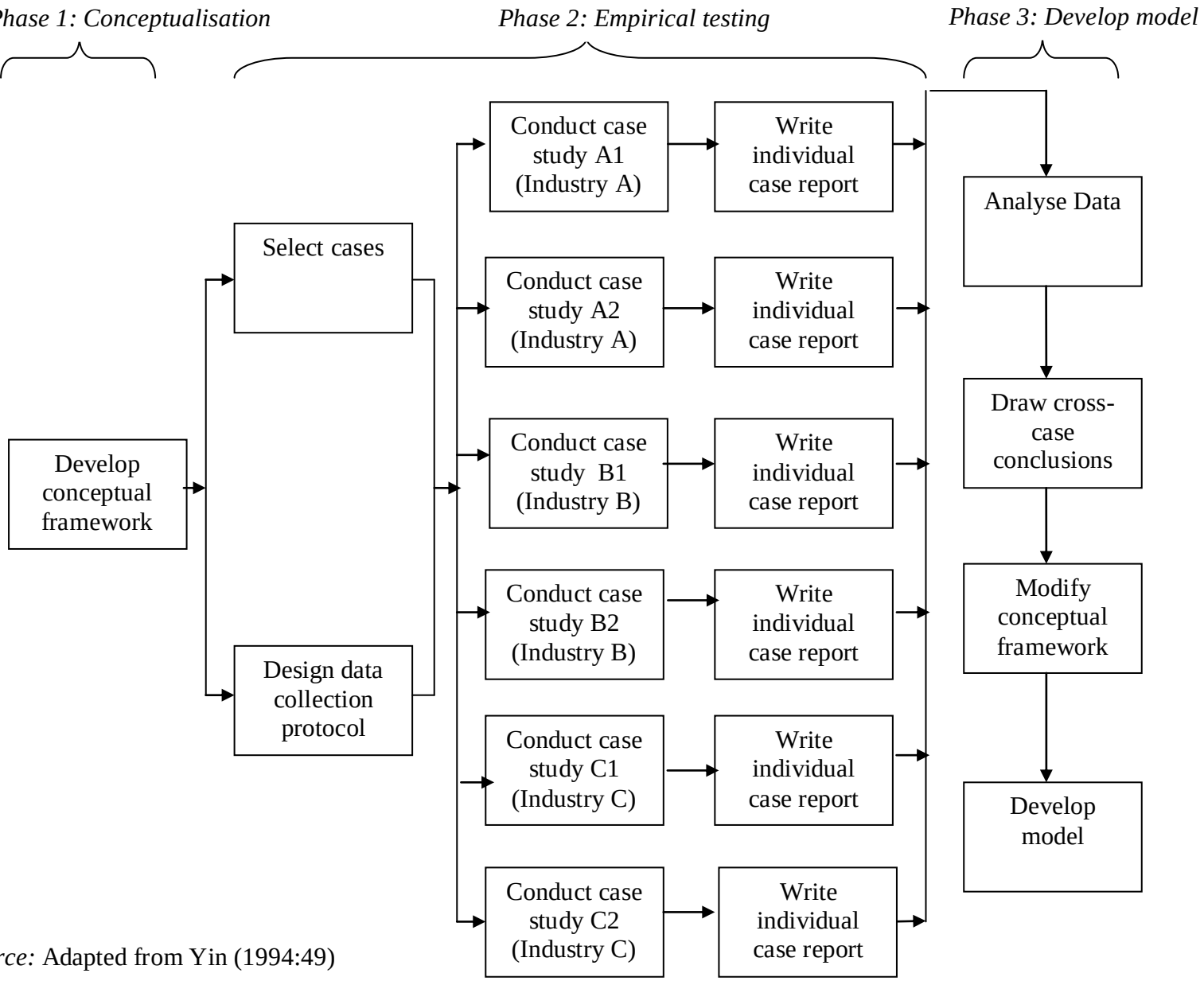
5.2.1 Field procedures

A combination of data collection tools were used in each case study. The resultant data collected through the use of multiple tools allowed for the triangulation of data which contributed to both a deeper understanding of the company under review, and allowed for construct validation.

The following data collection tools were used for each case study:

- Documents: annual reports, sustainability reports and any other publically available information in respect of voluntary climate change activities at each company.
- Semi-structured interviews: interviews were conducted with relevant individuals at each company.

Figure 4.4 Case study research process:



Source: Adapted from Yin (1994:49)

The procedure followed to collect the data for the documentary review encompassed a detailed examination of each of the selected company's websites, annual reports and sustainability reports. In addition, internet searches were conducted to ascertain whether any additional information had been published in respect of the climate change actions of the companies under review.

For the purposes of the interview phase of this study, information contained in company reports and on the company websites, regarding the primary contact person for sustainability or climate change issues, was used to identify the relevant individuals at each company. Once these individuals had been identified, telephonic or email contact was made to ascertain their willingness to be interviewed for this study. Where an individual was not available to be interviewed, they were asked to recommend a colleague in the company who would be able to assist.

The interviews were conducted in January and February of 2009 with the individuals responsible for sustainability and environmental issues at each of the six selected companies. Each interview was taped, with the respondent's permission, and later transcribed by the researcher.

The main sources of supporting documentation were company annual reports and sustainability reports (either included in the annual report or issued as a separate report) and company responses to the Carbon Disclosure Project (CDP) (Incite Sustainability, 2008). It was discovered that most other information contained on the company websites and in various policy documents duplicated the content of the information contained within the sustainability or annual reports. Therefore, to avoid duplication, analysis was restricted to the main sources identified above. Annual and sustainability reports available on company websites as at 1 February 2009 were analysed. The Carbon Disclosure Project questionnaire responses for 2008 (CDP 6) were downloaded from the Carbon Disclosure Project website in October 2008.

5.2.2 Case study questions

In order to discover the motivations and consciousness of companies undertaking voluntary climate change mitigation actions, three broad areas were addressed

I. Understanding the sustainability values of companies in terms of the level and degree of human and nature connection and interaction. The categories

highlighted by Gladwin *et al.* (1995:883) ranging from ecocentric to technocentric were used as the basis for testing these values.

II. Understanding the motivating factors underlying company action in respect of climate change mitigation and whether these differ between companies (as set out in the proposed conceptual framework).

III. Understanding whether there is an impact on company value as a result of voluntary climate change actions, considering both financial and non-financial aspects of value.

Each of these broad areas was investigated by posing a number of questions as part of the semi-structured interview process. The information obtained in the documentary review was used to supplement information gathered in the interview process. The process followed is highlighted in figure 4.5 and explained in further detail below. Specific questions and statements are contained in annexure II, numbers in the flow chart in figure 4.5 correspond to question numbers in annexure II.

5.2.2.1 Section A: Sustainability Values

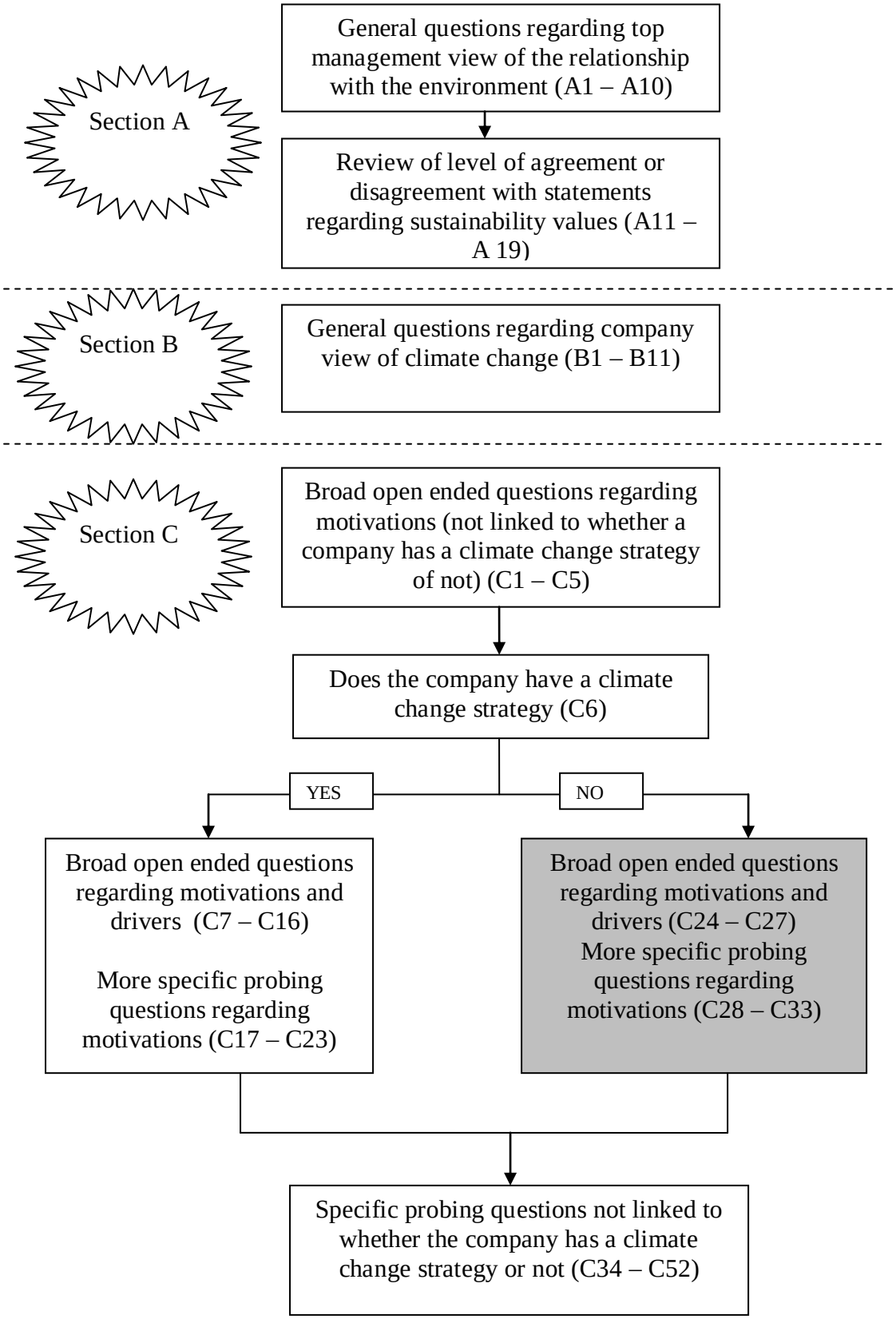
The purpose of this section was to discover the sustainability values driving corporate action in terms of environmental issues. The section begins by using statements regarding the firm's interaction and relationship with the natural environment and interrogating the level of agreement or disagreement, the majority of these statements were adapted from Banerjee's study which considered an environmental orientation scale (Banerjee, 2002a:184). The focus then shifts to an analysis of specific statements regarding the business and natural environment relationship (extracted from Gladwin *et al.,* 1995). The statements highlight technocentric or anthropocentric views which are thought to be the dominant view or traditional management paradigm of business (Gladwin *et al.*, 1995:882; Shrivastava, 1995b:126). A rating of the level of agreement or disagreement in terms of the dominant view of the specific company would be expected to reveal to what extent the company's sustainability values differ from the technocentric view.

5.2.2.2 Section B: Company response to climate change

This section aimed to understand what steps have been taken from a strategic point of view to deal with climate change at a company level. The main objective of this section was to obtain a high level understanding of the degree of climate change

awareness and strategic action in a particular company. This information was supplemented with information obtained in section C.

Figure 4.5 Flow chart of interview questions



5.2.2.3 Section C: Motivations

If the proposed conceptual framework was applicable it was expected that company motivations for voluntary climate change action would primarily be driven by legitimation, the financial business case or moral responsibility. In addition, companies who are considered to be more evolved from a corporate sustainability consciousness perspective were expected to display different motivations or drivers than companies considered less evolved in terms of sustainability consciousness. The purpose of section C was to discover the extent to which the above views were correct.

This section first posed general open ended questions to understand motivations for climate change action (or the lack of action). In order to understand if motivations and drivers fitted into the proposed conceptual framework it was important that no leading questions were posed in this section which might pre-empt the selection of motivating factors.

The second part of this section focused on asking more probing questions to understand the degree to which legitimacy, the financial business case or moral responsibility (or any further category uncovered by the initial questions) played a role in driving specific actions. A number of the questions in section C were adapted from the EIU study of company sustainability (EIU, 2008).

5.2.3 Guide for case study report

A report was generated for each individual case study. In general the report contained three sections, corresponding to the three broad areas of investigation: sustainability values, motivations and whether there is an impact on the value of the company taking voluntary action.

The information in the reports was then used to draw cross-case conclusions which ultimately formed the basis for the refinement of the conceptual model and development of a proposed scientific model.

5.3 Conducting case studies and writing individual case reports

Chapter 5 details the key outcomes of the individual case reports.

6 Developing a Model (Phase 3)

6.1 Overview of data analysis

In order to facilitate the final phase of the study, the data collected in the interviews and reviews of supporting document was analysed to determine the applicability of the proposed conceptual framework. The key technique employed for data analysis was interpretative pattern recognition, which assisted in enhancing internal validity. The outcomes of the documentary review and interviews were analysed in terms of the motivational drivers that emerged. In addition, differences and similarities between companies in a specific sector and between different sectors were also highlighted and analysed further to determine if any distinctive patterns or relationships that emerge.

The following sections outline the data analysis techniques employed in this study, the software tools which facilitated the analysis, and the data collection and analysis process which was followed.

6.2 Qualitative data analysis techniques

While there are many procedures employed to generate meaning from qualitative data (Miles & Huberman, 1994:245) the ultimate choice of analytical method depends largely on the objective of the analysis. Two basic categories of qualitative text analysis methods are context analysis and grounded analysis (Easterby-Smith, Thorpe & Lowe, 2002:245; Johnson & Harris, 2002:113). Both tactics involve applying a coding procedure in terms of which qualitative data is coded into categories. These categories are either determined in advance, which is usually the case in context analysis, or arise during the coding process when conducting a grounded analysis (Johnson & Harris, 2002:113; Kvale, 1996:192). Grounded analysis forms part of the grounded theory process discussed in section 2.2 above, therefore the categories need to emerge from the data and ultimately lead to the development of new theory. Content analysis is more focussed on the frequency of occurrence of specific concepts which link to pre-specified theoretical categories.

A third method of analysis, which falls between the two extremes of content and grounded analysis combines the pre-specification of categories and the development of new categories which emerge out of the data (King, 1998:118). The term “template analysis” was used by King (1998:118) to describe this method which involves the

creation of an initial template from theory, experience or exploratory studies. The template is then refined following the analysis of qualitative data generated from a particular study, ultimately leading to the emergence of a final template. This method of analysis overcomes the rigidity of content analysis where all categories need to be pre-specified, which can limit the ability of studies to move outside the boundaries of existing theory. In addition, it takes cognisance of the fact that theory development and refinement does not take place in a void, and certain categories can therefore be pre-specified to assist with the ultimate analysis of the data. Template analysis is therefore well suited to studies which focus on theory or conceptual testing and refinement and this study therefore followed a template analysis approach.

6.2.1 Computer assisted qualitative data analysis

As previously mentioned, the key tests for quality in a qualitative study are construct validity, internal validity, external validity and reliability (Yin, 1994:33). Using multiple data sources addresses the issue of construct validity and the adoption of a case study protocol goes some way to ensuring reliability. However, even though pattern models of data analysis and replication logic are used in a qualitative data study to ensure internal and external validity it is often difficult to demonstrate that such methods were applied. It has been suggested, that the advent of computer assisted qualitative data analysis software (CAQDAS) has provided a methodological tool which can potentially enhance the research process through addressing concerns in respect of reliability (Duriau & Reger, 2004:383) and can increase rigour and flexibility in the research process (Lu & Shulman, 2008:106). Using computers for qualitative data analysis dates back to the early 1980s (Kelle, 1995:1) and a proliferation of software packages are now available to assist researchers (Darmody & Byrne, 2006:122; Duriau & Reger, 2004:382). The term commonly used to describe the process of using CAQDAS in qualitative data analysis is computer aided text analysis (CATA). Kabanoff (1997:507) defines computer aided text analysis as “any technique involving the use of computer software for systematically and objectively identifying specified characteristics within text in order to draw inferences from text.”

Some of the benefits of using CAQDAS include: the ability to handle large quantities of data; enhanced flexibility in terms of coding data; enhanced transparency as a result of the creation of an audit trail of the coding and categorisation process; enhanced validity and rigour arising from a more complete data analysis process; and

enhanced analysis arising from network and linkage capabilities of the software which affords the identification of patterns and linkages which might have been overlooked in a manual coding process (Duriau & Reger, 2004:383; Kelle & Laurie, 1995:27; Lu & Shulman, 2008:106; Smit, 2005:110; St John & Johnson, 2000:394). In general, the above mentioned benefits of using CAQDAS can be divided into three areas in terms of the issues they potentially help address, first, sampling limitations, second issues arising from coding reliability and validity (Kelle & Laurie, 1995:22) and third limitations of manual coding analysis. Each of these issues is discussed in more detail below.

Generally, the ability of computers to handle large data sets and the speed with which analysis can be conducted assists qualitative researchers who wish to make use of statistical sampling and draw resultant generalisations in terms of population characteristics. In the past, the manual method of qualitative data analysis restricted the size of the sample which could be analysed and therefore created problems in terms of the representativeness of the sample. However many qualitative studies, including this one, are not focused on statistical sampling, but rather on theoretical sampling and therefore the ability to handle large quantities of data is perhaps not as important as the other benefits which emerge as a result of coding reliability and validity.

Coding reliability concerns and issues of validity are addressed through the use of CAQDAS in a number of ways. While the software itself does not analyse the data (as opposed to the case of quantitative data analysis software) it provides a tool which assists in the management of data, (Rambaree, 2007:3) and provides a means of verifying that the procedures which a researcher claims to have carried out in terms of data analysis have in fact been adhered to, providing much needed transparency to the qualitative data analysis process (St John & Johnson, 2000:394). In addition, the use of CAQDAS enhances the rigour of the analysis process as a result of the fact that checks can be carried out to ensure that all data is analysed and that the researcher has not subjectively selected data to support their argument (Kelle, 2004:486), providing "a clear pathway to rigorous, defensible, scientific and externally legitimised qualitative research" (Lu & Shulman, 2008:107).

In addition to addressing the above issues, CAQDAS can enhance the manual qualitative data analysis process. The ability of the software to handle a large number

of codes, modify codes and code in multiple ways all enhance flexibility (St John & Johnson, 2000:394). The software also facilitates, through linkages created across data sets and the use of network concepts, the identification of patterns and linkages which might not have been uncovered in a manual analytical process (Duriau & Reger, 2004:383; Lu & Shulman 2008:106).

Although the benefits in terms of transparency and rigour are attractive, it is important to keep in mind that the software is a tool and that the underlying analysis and coding remain in the hands of the researcher who ultimately determines the quality of the conclusions drawn from the research process (Smit, 2005:109). Therefore CAQDAS was used to enhance transparency and rigour in this study, however the fundamental tests of quality research as outlined by Yin (1994:33) were addressed at each step in the process to ensure robustness in the ultimate conclusions drawn.

6.2.2 Selection of software

There are numerous CAQDAS packages available and selection of an appropriate package is based on a number of factors including: the amount of data and format of data; the methodology applied; preferred working style; amount of time available to master the software; and the availability of a particular package and peer support at the specific research institution where the study is carried out (Lewins & Silver, 2006:5). Two of the leading commercial packages are considered to be Atlas.ti and NVivo (Easterby-Smith *et al.*, 2002:128; Lewis, 2004:439; Rambaree, 2007:3). From a technical standpoint Atlas.ti was at a stage considered to be superior to NVivo (Lewis, 2004:461). However, the latest release of NVivo 8 in 2008 includes many of the features that were previously missing, and there is now very little to distinguish between the technical capabilities of either package. Both packages are suitable for the data analysis applicable to this particular study, therefore choosing between the two packages is mainly a function of access to and support of a package within the particular research institution, user friendliness of a particular package, and personal preference in terms of the operation and structure of each application.

In order to decide which of the two abovementioned packages to use, trial versions of both software packages were accessed and evaluated. Following the trial period, Atlas.ti was selected on the basis of its perceived user-friendliness, the ease with which it was mastered and the intuitive process followed in terms of the analysis

which allowed the researcher to remain close to the underlying data during the analytical process. In addition, there is peer support for this package within the research institution where this study was conducted.

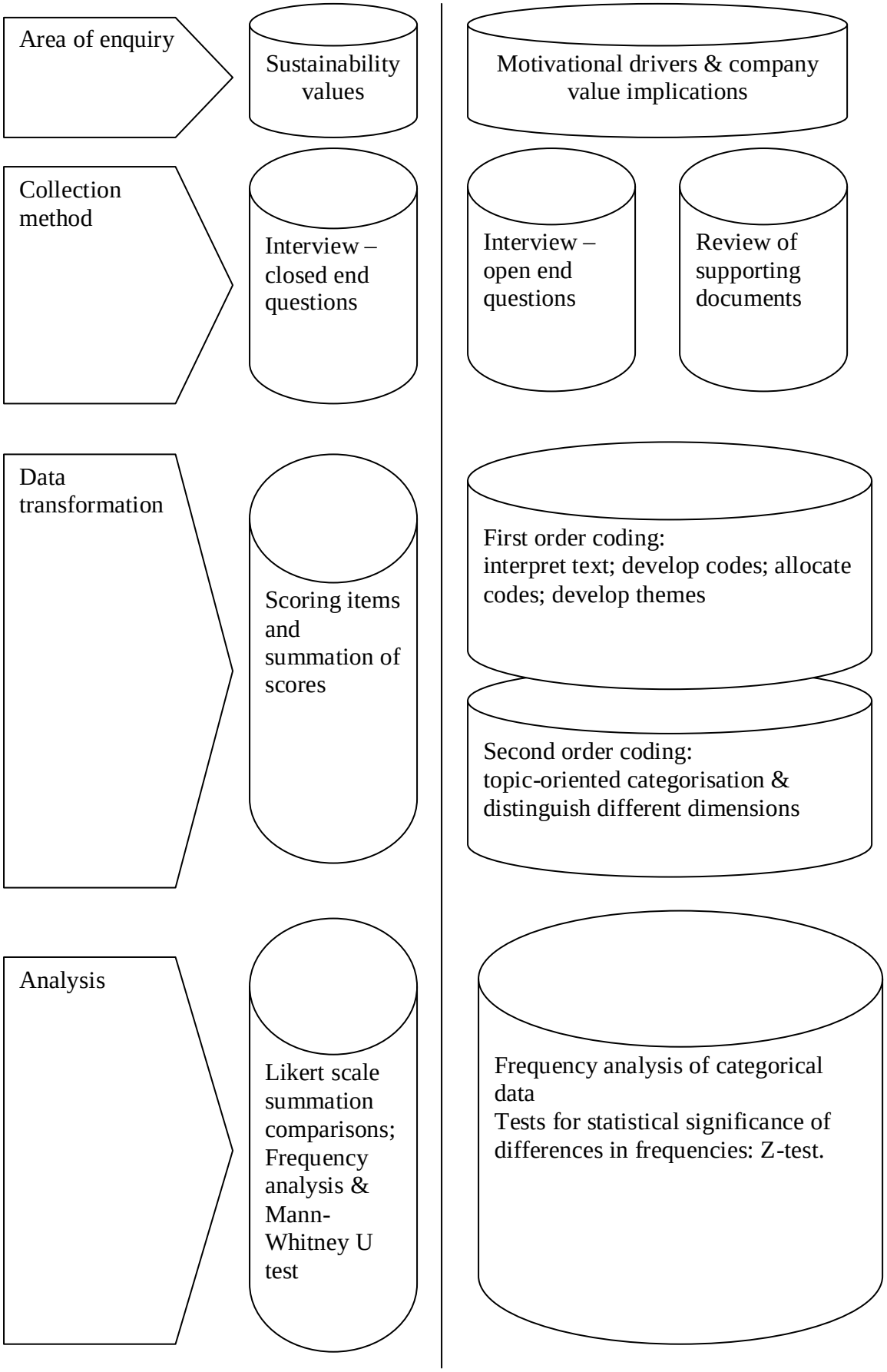
In summary, qualitative data analysis was carried out using a template analysis technique where some coding categories were pre-specified, and other emerged from the data analysis process. To enhance transparency and rigour, CAQDAS, in particular Atlas.ti was used in the analytical process to assist with categorisation and coding of transcribed data.

6.3 Overview of data analysis process

The data generated by the empirical study originated from two main sources, the interview and supporting documents. The interview had two distinct sections, Section A which contained closed-end scale response questions and section B and C which contained open ended questions. The closed end questions were introduced to obtain an understanding of the level of top management commitment to environmental issues and the worldview of each particular company (these issues are collectively referred to as sustainability values throughout this document) while the open ended questions and supporting documents facilitated the discovery of motivational drivers and value implications. The preparation and techniques used for analysing the closed-end questions is distinct from the preparation and techniques used for analysing the open-ended questions and supporting documents as illustrated in figure 4.6 which provides an overview of the process followed at each stage of the empirical study.

The exploratory nature of this study necessitated a case study based approach, therefore the empirical part of this study is a case based study of six South African companies in three industries. The statistical tests carried out investigate the significance of differences observed between various cases, and within a particular case and do not relate to the total population of the South African corporate market.

Figure 4.6 Process overview of data collection, transformation and analysis



6.3.1 Preparation of closed-end questions (Section A of Questionnaire)

The first section of questions were closed-end questions with responses based on a 5 point Likert scale (Strongly agree, agree, not sure, disagree and strongly disagree). The statements were divided into two sections. The first section tested the perceived level of commitment of the company's management team to environmental issues. The second section tested the dominant worldview of the company in respect of sustainability issues as perceived by the respondent and tested whether the company held technocentric views. In terms of the statements used to test the worldview of the company, respondents were instructed to answer in terms of the dominant view of their company (i.e. focusing on the corporate values of the company).

There were ten statements testing the first concept which allowed the respondent to score from 10 to 50, with 30 points being equivalent to a neutral position. If the respondents score is near 10 then this indicates that they perceive a low level of management commitment to environmental issues, whereas a score closer to 50 would indicate a high level of commitment to environmental issues.

There were nine statements testing the second concept which allowed the respondent to score from 9 to 45, with 27 indicating a neutral position. A score of close to 45 would indicate that the company held strong technocentric views with a low score closer to 9 indicating a lack of support for technocentric views. A score of 27 would indicate a neutral position. Table 4.2 provides an overview of the range of possible scores.

Table 4.2 Summary of Likert scale scores

Range of possible scores	Level of management commitment to environmental issues	Level of agreement with technocentric view as dominant view of company
High Score	50	45
Low Score	10	9
Neutral Score	30	27

Apart from the above summated scores, the frequency with which different categories were selected was calculated and displayed in bar charts. Finally, in order to determine whether the rankings differed between companies within a specific industry the Mann-Whitney U test was utilised. This test is recommended as the non-

parametric alternative to the t test (Siegel, 1956:116) and can therefore be used to analyse the ordinal data generated by Likert scales. Due to the high number of tied rankings resulting from a limited 5 point scale, a correction for ties was applied to enhance the accuracy of the test. Refer to Annexure III for further details regarding the test calculation.

6.3.2 Preparation of interview questions: (Section B & C of questionnaire)

Prior to analysing responses, each interview question was reviewed to determine the range of possible outcomes as summarised in table 4.3 below. The reason for this upfront classification was to ensure that all categories were equally addressed in the interview process to eliminate bias in responses which would be introduced if one particular category was overemphasised. In addition, sufficient broadly framed questions were required to allow for the possibility that additional motivational categories existed which were not captured by the proposed conceptual framework.

Table 4.3 Range of possible outcomes of open-ended interview questions

Categorisation	Description
M+	Highlights moral responsibility as a motivational driver
M-	Refutes moral responsibility as a motivational driver
F+	Highlights the financial business case as a motivational driver
F-	Refutes the financial business case as a motivational driver
L+	Highlights legitimacy as a motivational driver
L-	Refutes legitimacy as a motivational driver
B	Relates to one or more of the above categories, or alternatively another category not previously expected in terms of the proposed conceptual framework

In certain instances, a specific question was not categorised, either because it was a repeat of an issue already addressed in another question, or if the question provided background information on the climate change strategy adopted by the company or was merely a means to ascertain which question to proceed to (for example “Does your company have a climate change strategy?”).

6.3.3 Supporting document data

6.3.3.1 Preparation of CDP documents

Prior to analysing company responses to the CDP questionnaire, the questions were reviewed to determine the extent to which elements of moral responsibility, legitimacy and the financial business case were addressed to determine whether there were equal opportunities for companies to emphasise specific elements within their replies. The majority of the questions were broadly specified allowing a range of motivations to emerge, and where specific elements were addressed, the balance was maintained between the three conceptual framework elements.

6.3.3.2 Preparation of annual reports and sustainability reports

Due to the fact that sustainability reports address whatever elements the company wishes to highlight and that no structure is imposed on these reports from an external perspective, there was no need to ensure equal representation of all three conceptual elements prior to coding reports. The preparation of the documents for analysis therefore focussed on identifying the relevant areas of the reports which dealt with environmental actions, in particular climate change mitigation. In addition, the annual reports were reviewed to determine whether financial implications of environmental and climate change mitigation actions were included in the annual report.

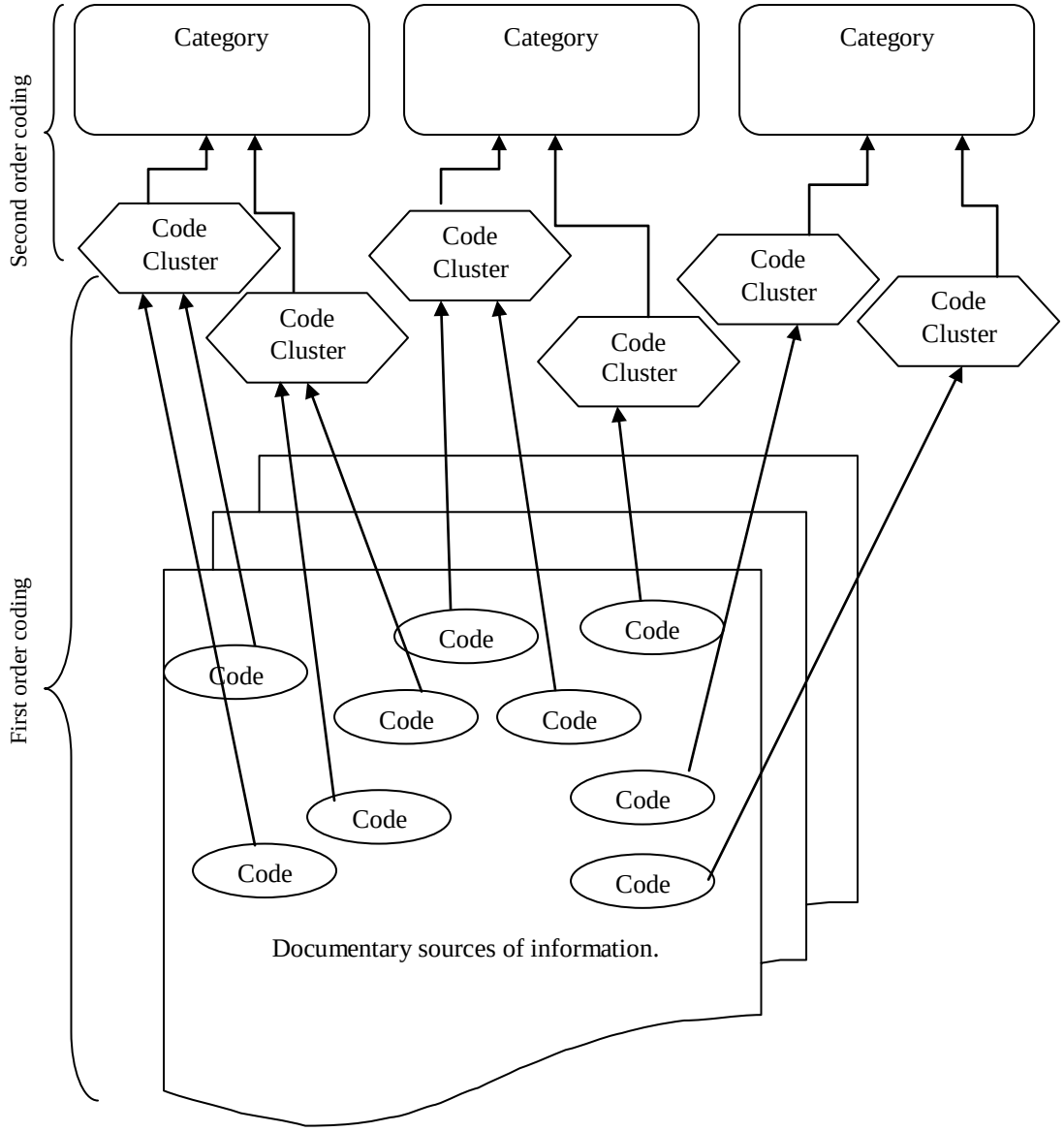
6.4 Transforming qualitative data

In order to analyse the information gathered in the various interviews and additional information contained in supporting documentation, the template analysis process, as described in section 6.2 was employed. This resulted in the use of certain pre-specified categories in the coding process, in addition to the introduction of new categories which emerged from the data analysis process. The main high-level categories which were pre-specified were the three concepts outlined in the proposed conceptual framework being the concepts set out as stakeholder, strategic and paradigmatic shifts. The key motivational drivers of legitimacy; the financial business case; and moral responsibility linked with these three concepts were therefore used as a starting point for the development of categories.

The case-oriented quantification process outlined by Kuckartz (1995) was employed to combine qualitative and quantitative elements in the analysis of the qualitative data. This involved firstly the interpretation of text in the interviews and supporting

documents, the development of codes and the allocation of codes to specific text. Thereafter, text segments with the same code were analysed to develop themes, which facilitated the analysis of relationships between various codes. The process outlined above was referred to by Kuckartz (1995:161) as first order-coding. The second phase of the case-oriented quantification focuses on classification and quantitative analysis, which Kuckartz (1995:161) termed second order-coding. This process begins with the grouping of text segments relating to a topic-oriented category and then progresses to distinguishing different dimensions. These dimensions are then coded with specific variables which can then be analysed using quantitative techniques. Figure 4.7 contains a high level overview of the coding and categorisation process.

Figure 4.7: Schematic overview of coding and categorisation



6.4.1 Coding analysis process

The key element of analysis within the study focused on coding the responses to the interview questions, and coding of supporting documentation. In order to ensure that this coding was done in a consistent and transparent manner, the following process was followed.

6.4.1.1 First order coding process:

The interview transcripts and supporting documents (being the CDP and annual and sustainability reports) were coded making use of the Atlas.ti software. Codes were developed during the coding process by capturing specific elements relating to the topic under review. These codes were then allocated to specific text segments in the interview transcripts and supporting documents where issues were highlighted that referred to a particular code.

Codes were then analysed to determine specific themes and connections between the specific codes using the networks functionality in Atlas.ti. This process resulted in the formation of code clusters. Code links were used to illustrate the relationship between a particular code and the code cluster, relationships could be either reinforcing or contradictory depending on the nature of the underlying statements which were initially coded.

6.4.1.2 Second order coding process

The next phase of analysis concentrated on linking the code clusters identified in the first order coding process with the pre-specified categories of the proposed conceptual framework, or developing new categories should the need arise. The result of the overall categorisation process was the allocation of the code clusters to the pre-specified categories. The next step in the process was the definition of the variables which would be used in the quantitative analysis of the data.

6.4.2 Quantitative translation

The inductive model of research followed in qualitative studies focuses primarily on forming categories and looking for patterns within the categories. The aim of the analysis of case study data in this particular study focused on the ability of the conceptual framework to explain observations emerging from the selected cases. Depending on the outcome of this analysis the framework would be modified and

extended if required to encompass all issues emerging from the cases. The clustering of codes and allocation to the high level categories provided the basis for the formation of categories which could then be analysed to highlight patterns and themes. To facilitate the process, a level of quantitative translation and analysis assisted in highlighting various dimensions of the cases under review.

The data generated by the coding process of section B and C of the interviews and all coding from supporting documentation is categorical in nature as the measurement scale is made up of a set of mutually exclusive categories. Due to the fact that the categorical variables do not have a natural order, they are considered nominal (Agresti, 1990:2) and any mathematical operations which are carried out focus on whether an object fits into a particular category or class (von Eye & Niedermeier, 1999:1). The most common analysis of such data is performed using univariate analyses through frequency counts where the results are expressed as percentages (Kuckartz, 1995:164).

The data generated from the coding process was therefore subjected to frequency analysis per category for each company for each of the three documents analysed (interview transcript, CDP document and the combined analysis of the annual and sustainability report). The frequency analysis and resultant bar charts facilitated the process of identifying motivational drivers and sub-drivers within specific companies and allowed comparisons to be made between companies in a particular industry.

To further enhance the analysis and assist in understanding the relationships between drivers both within and between companies, tests for statistical significance were carried out on the frequency data using the z-test (details regarding the calculation are contained in Annexure III). In addition to using this technique within each particular case, cross case comparisons were also carried out using the frequency data and the same method of determining statistical significance was employed.

6.5 Modifying framework and developing model

The outcomes of the data analysis process was linked back to the conceptual framework, which allowed the framework to be altered or extended to take into account any unique insights uncovered by the analysis. The variables that emerged and the relationships between the variables form the basis of a proposed scientific model.

7 Conclusion

Given the unstructured nature of the research environment and a lack of information and knowledge regarding key variables, constructs and relationships between variables, a qualitative research approach was preferred for this study. In light of the fact that this study aimed to understand whether the proposed framework developed in Chapter 3 was applicable in the South African sustainability context, particularly as it relates to voluntary climate change strategies, following a case study method which allowed for the testing of the proposed conceptual framework in real world situations was the preferred method. The study made use of multiple cases to allow for exploration of both literal and theoretical replication. The focus was on interpretive research using pattern models to analyse the data emerging from the cases. Qualitative data analysis was carried out using a template analysis technique where some coding categories were pre-specified, and other emerged from the data analysis process. To enhance transparency and rigour, CAQDAS, in particular ATLAS.ti was used in the analytical process to assist with categorisation and coding of transcribed data.

The study was limited to three sectors and focused on companies that were perceived to lead and lag in terms of sustainability to facilitate both a comparison of similarities as well as an understanding of differences between companies operating in the same sector and in different sectors. A combination of research tools were used including documentary reviews and semi-structured interviews.

Chapter 5 outlines the findings of the empirical phase of the study first focusing on issues relating to the sustainability values of the companies studied, and then examining the motivational drivers for voluntary climate change action. Finally conclusions are drawn regarding the applicability of the proposed conceptual model.

Chapter 5: Empirical study findings

1 Introduction

The previous chapter outlined the research method selected for the empirical part of this study. In addition, an overview was provided of the research process followed in terms of conducting the case studies on the six selected companies which facilitated exploration of the themes highlighted in the proposed conceptual model outlined in chapter 3.

This empirical study was designed to address three main areas of enquiry first understanding the sustainability values of the selected companies, second understanding factors motivating these companies to take voluntary action in respect of climate change mitigation, and third understanding whether there is an impact on company value as a result of the above-mentioned actions.

This chapter contains the results of the empirical study. The empirical findings are split into two sections, section 2 focuses on the analysis and findings in respect of sustainability values and section 3 outlines the analysis and findings in respect of motivational drivers and company value implications. The chapter concludes with an overview of the key issues which emerged from the case study process.

The notation outlined in table 5.1 is used in this chapter to maintain confidentiality of the respondents and companies as outlined in Chapter 4.

Table 5.1 Summary of notation used to identify companies

Industry	Company in the top half of the Accountability Ranking	Company in the bottom half of the Accountability Ranking
A	A1	A2
B	B1	B2*
C	C1	C2

* Company B2 submitted a revised version of the interview transcript following a review by the respondent's manager which was coded in addition to the first version of the transcript and these transcripts are identified as B2(1) for the first version and B2(2) for the second version in the analysis that follows. Further detail regarding this issue is contained in section 3.9.1.

2 Sustainability values:

2.1 Summarised findings

The purpose of the sustainability values statements was to determine the level of top management commitment to environmental issues, and to ascertain the dominant worldview of the company in terms of sustainability matters. The key issue was to discover whether there were any differences in a particular sector between a company rated in the top half of the Accountability rating and one rated in the bottom half. In addition, if differences existed, would this provide insights into differing motivations for climate change actions?

The table 5.2 summarises the Likert scale summated scores for section 1 and section 2 of the statement analysis per company. The following section highlights these comparisons per industry, and tests the significance of the observed differences.

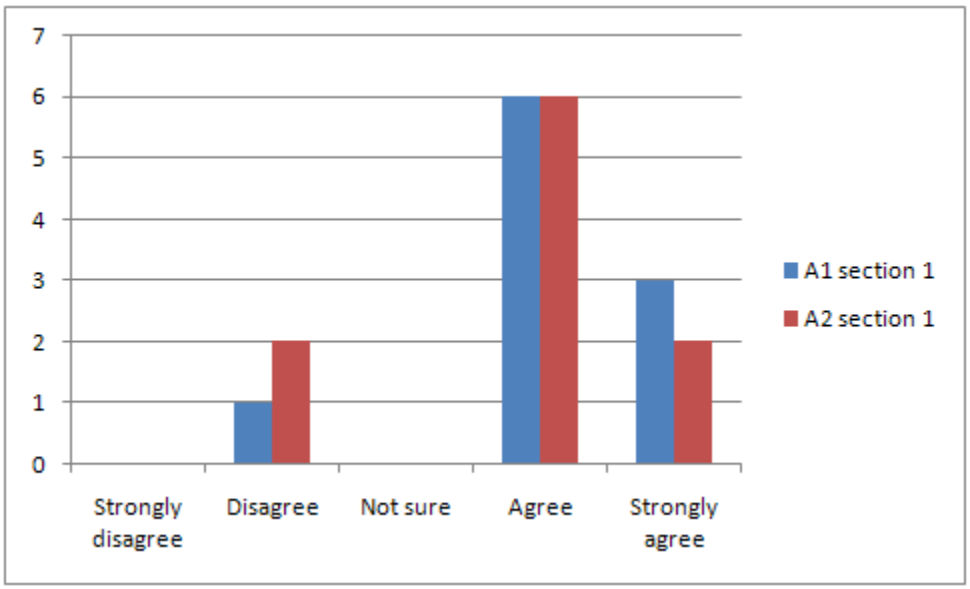
Table 5.2 Summary of Likert scale scores

Company	Level of management commitment to environmental issues	Level of agreement with technocentric view as dominant view of company
A1	41	18
A2	38	18
B1	40	13
B2 (1)	32	24
B2 (2)	32	23
C1	35	22
C2	34	20
Range of possible scores		
High Score	*50*	*45*
Low Score	*10*	*9*
Neutral Score	*30*	*27*

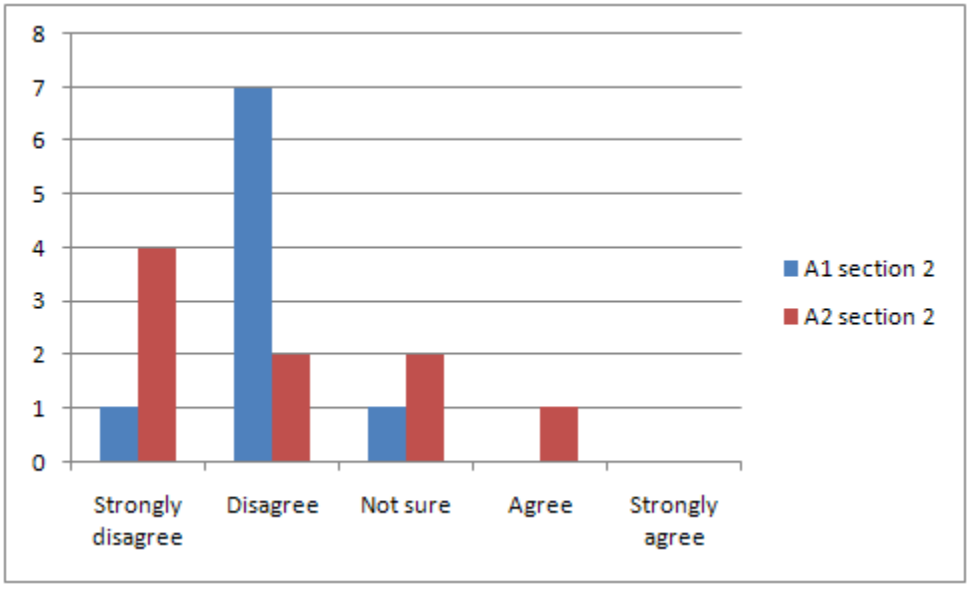
2.2 Findings per industry

2.2.1 Industry A

Graph 5.1 Perception of management commitment to environmental issues in industry A



Graph 5.2 Level of agreement with technocentric views in industry A



2.2.1.1 Company A1

The respondent indicated a relatively high level of management commitment to environmental issues with a score of 41 out of a maximum possible score of 50. The only response that was out of line with the general sentiment expressed by the respondent, that the management team was committed to environmental issues,

related to the statement which questioned the level of priority which the company gave to environmental issues when compared to other stakeholders, where the respondent indicated that environmental issues were less important than the requirements of other stakeholders.

When considering whether the dominant view of the company was technocentric, the score of 18 out of 45 indicated that the respondent was of the view that there was a low level of technocentric views within the organisation.

2.2.1.2 Company A2

The respondent indicated a relatively high level of management commitment to environmental issues with a score of 38 out of a maximum possible score of 50. There were two responses that were out of line with the general sentiment expressed by the respondent, that the management team was committed to environmental issues. The first related to the statement which questioned the level of priority which the company gave to environmental issues when compared to other stakeholders and the second focused on whether environmental concerns should be sub-ordinate to people's needs.

When considering whether the dominant view of the company was technocentric, the score of 18 out of 45 indicated that the respondent was of the view that there was a low level of technocentric views within the organisation.

2.2.1.3 Cross case comparisons

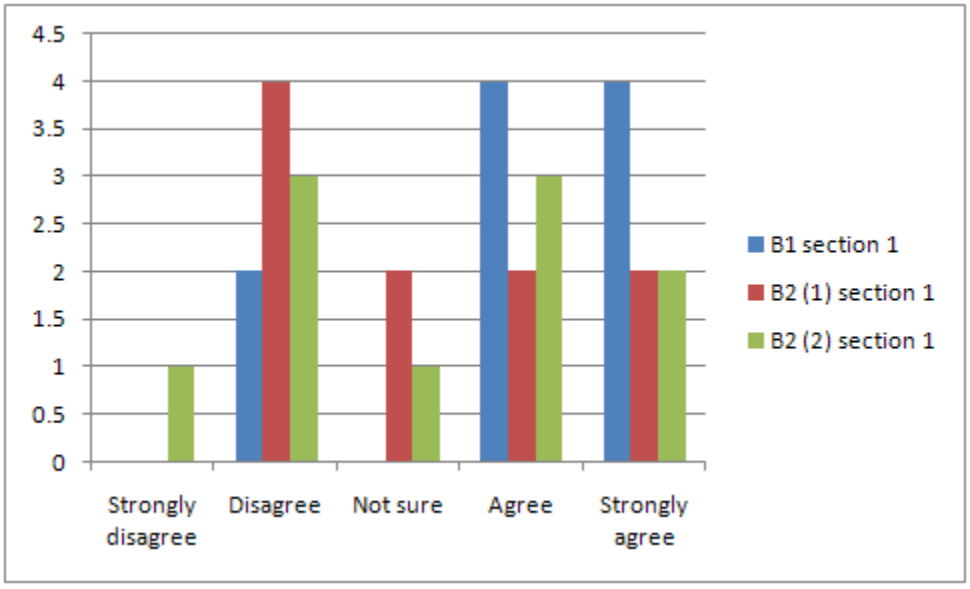
As depicted in Graph 5.1, both company A1 and A2 displayed very similar response patterns to the questions posed concerning management commitment, both illustrating a high level of agreement that their management teams were committed to environmental issues. The distributions in the two groups was not significantly different at the 90% confidence level (Mann–Whitney $U = 42$, z = 0.57, $n_1 = n_2 = 10$, P(1) = 0.2843 P(2) = 0.5687. Mann-Whitney corrected for ties: z(corrected) = 0.69, P(1) = 0.2451).

Respondents at both companies within industry A indicated that there was a level of disagreement with technocentric views within their organisations as illustrated in graph 5.2. The distributions in the two groups was not significantly different at the 90% confidence level (Mann–Whitney $U = 37$, z = 0.26, $n_1 = n_2 = 9$, P(1) = 0.23974 P(2) = 0.7949. Mann-Whitney corrected for ties: z(corrected) = 0.33, P(1) = 0.3707).

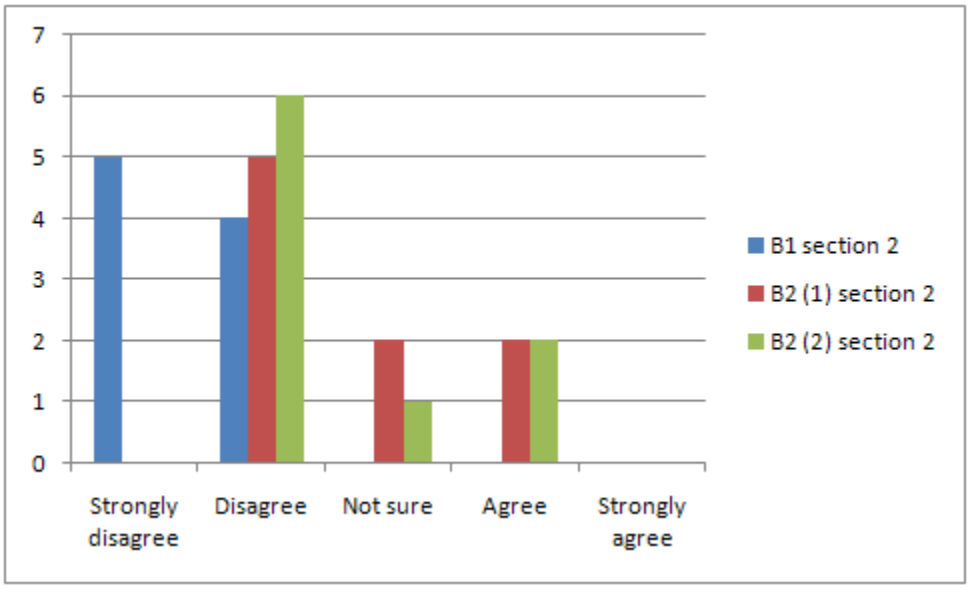
2.2.2 Industry B

As mentioned in section 1 above, two versions of the questionnaire were analysed for company B2 as the interview transcript was updated by management after the initial interview, further detail regarding this issue is contained in section 3.9.1. Therefore, graph 5.3 and 5.4 illustrate the differences in responses of both versions of company B2's responses contrasted with the responses of company B1.

Graph 5.3 Perception of management commitment to environmental issues in industry B



Graph 5.4 Level of agreement with technocentric views in industry B



2.2.2.1 Company B1

The respondents indicated a relatively high level of management commitment to environmental issues with a score of 40 out of a maximum possible score of 50. There were two responses that were out of line with the general sentiment expressed by the respondents that the management team was committed to environmental issues. The first related to the statement which questioned the level of priority which the company gave to environmental issues when compared to other stakeholders and the second focused on whether environmental concerns should be sub-ordinate to people's needs.

When considering whether the dominant view of the company was technocentric the score of 12 out of 45 indicated that the respondents were of the view that there was a very low level of technocentric views within the organisation.

2.2.2.2 Company B2

The respondent indicated a moderate level of management commitment to environmental issues with a score of 32 out of a maximum possible score of 50. This score remained consistent in both versions of the interview transcript, however the individual item scores changed slightly. There were a number of responses that were out of line with the view that the management team was committed to environmental issues. The first related to the statement which questioned the level of priority which the company gave to environmental issues when compared to other stakeholders, a second focused on whether environmental concerns should be sub-ordinate to people's needs. In addition, the respondent's perception was that management believed it was difficult to be a successful company and preserve the environment at the same time, and were of the opinion that there is a trade-off between doing good from an environmental perspective and doing well from a financial perspective.

When considering whether the dominant view of the company was technocentric, the score of 24 (first version of transcript) and 23 (second version of transcript) out of 45 indicated that the respondent was of the view that there was some level of disagreement with technocentric views within the organisation, however there were certain instances where the technocentric view still prevailed.

2.2.2.3 Cross case comparisons

While it appears that the respondents have different perceptions regarding the management commitment to environmental issues, with company B1 appearing to

show a higher level of agreement, the differences in the distributions of the rankings of the responses was not significant at the 90% confidence level for both versions of the transcript of company B2 measured against company B1.

(B1 vs B2(1): Mann–Whitney $U = 32$, z = 1.32, $n_1 = n_2 = 10$, P(1) = 0.0934 P(2) = 0.1868. Mann-Whitney corrected for ties: z(corrected) = 1.42, P(1) = 0.0778).

(B1 vs B2(2): Mann–Whitney $U = 33$ z = 1.25 $n_1 = n_2 = 10$, P(1) = 0.1056 P(2) = 0.2113. Mann-Whitney corrected for ties: z(corrected) = 1.34, P(1) = 0.0901).

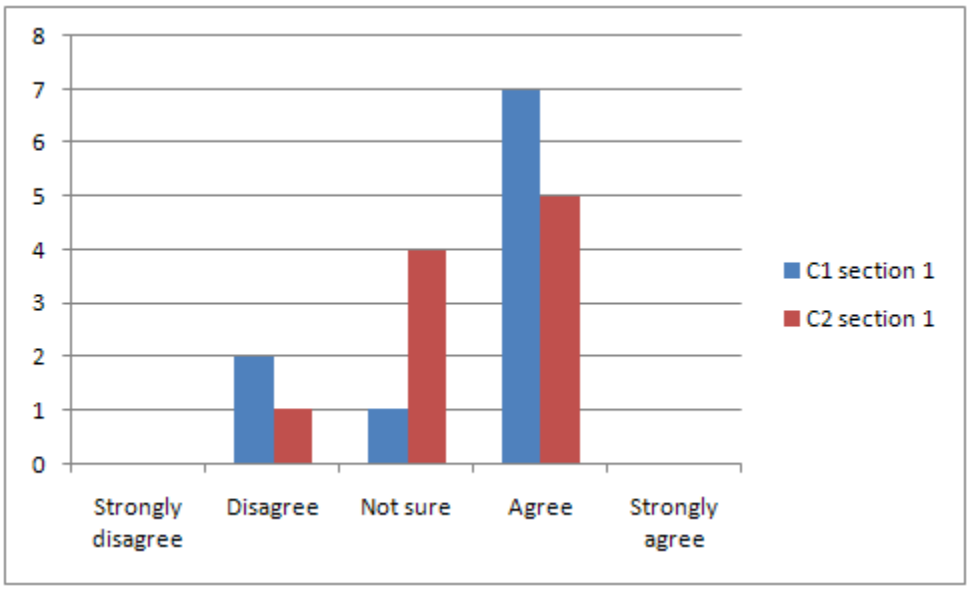
The respondent for Company B1 indicated that there was a high level of disagreement with technocentric views within their organisation, whereas the response from company B2 while still indicating a lack of support for technocentric views within the organisation, highlighted certain instances where technocentric views still held. The distributions in the two groups differed significantly at the 90% confidence level for both versions of company B2's transcript when compared with company B1

(B1 vs B2(1): Mann–Whitney $U = 71$, z = 2.65, $n_1 = n_2 = 9$, P(1) = 0.004, P(2) = 0.008. Mann-Whitney corrected for ties: z(corrected) = 2.92, P(1) = 0.0018).

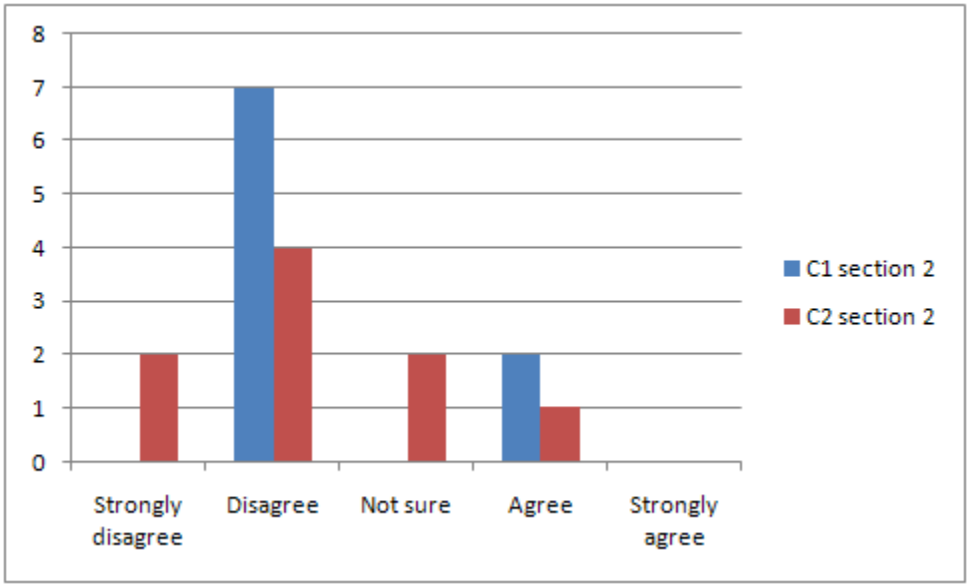
(B1 vs B2(2): Mann–Whitney $U = 69$ z = 2.47 $n_1 = n_2 = 9$, P(1) = 0.0068 P(2) = 0.0135. Mann-Whitney corrected for ties: z(corrected) = 2.80, P(1) = 0.0026).

2.2.3 Industry C

Graph 5.5 Perception of management commitment to environmental issues in industry C



Graph 5.6 Level of agreement with technocentric views in industry C



2.2.3.1 Company C1

The respondent indicated a moderate level of management commitment to environmental issues with a score of 35 out of a maximum possible score of 50. There were two of responses that were out of line with the view that the management team was committed to environmental issues. The first related to the statement which questioned the level of priority which the company gave to environmental issues when compared to other stakeholders and the second related to the belief that the company's financial well being was not dependant on the environment.

When considering whether the dominant view of the company was technocentric, the score of 22 out of 45 indicated that the respondent was of the view that there was some level of disagreement with technocentric views within the organisation, however there were instances where the technocentric view still prevailed.

2.2.3.2 Company C2

The respondent indicated a moderate level of management commitment to environmental issues with a score of 34 out of a maximum possible score of 50. There was one response that was out of line with the view that the management team was committed to environmental issues. This related to the statement which questioned the level of priority which the company gave to environmental issues when compared to other stakeholders. It should be noted that there were a number of instances where the respondent was not sure of the level of agreement or disagreement with a particular

item which resulted in the score reflecting a more neutral position than might otherwise have been the case.

When considering whether the dominant view of the company was technocentric, the score of 20 out of a possible score of 45 indicated that the respondent was of the view that there was a low level of technocentric views within the organisation.

2.2.3.3 Cross case comparisons

In industry C, graph 5.5 illustrates that both companies generally agree that their management is committed to environmental issues. The distributions in the two groups was not significantly different at the 90% confidence level (Mann–Whitney U = 43.5, z = 0.45, $n_1 = n_2 = 10$, P(1) = 0.3264, P(2) = 0.6527. Mann-Whitney corrected for ties: z(corrected) = 0.56, P(1) = 0.2877).

Both respondents from company C1 and C2 indicated that there was general disagreement with technocentric views within the organisation, however there was still evidence of some level of technocentricity within the organisation. The distributions in the two groups was not significantly different at the 90% confidence level (Mann–Whitney $U = 36$, z = 0.35, $n_1 = n_2 = 9$, P(1) = 0.3632 P(2) = 0.7263. Mann-Whitney corrected for ties: z(corrected) = 0.45, P(1) = 0.3264).

2.3 Conclusions: management commitment and sustainability values

Overall, the responses appeared to support the view that company management teams are committed to environmental issues. All respondents agreed that environmental issues were very important to top management and that companies had a responsibility to preserve the environment. However when it came to the priority in terms of which environmental concerns were addressed, all respondents were of the opinion that management would consider that financial responsibility to shareholders, finance providers, customers and employees would be more important than responsibility to environmental preservation. In all cases, differences observed between companies within each industry were not considered to be statistically significant.

In terms of the statements used to test the worldview of the companies, the scores would appear to indicate that companies show a lower level of affinity to the technocentric view, traditionally associated with business. All respondents expressed awareness within their companies of the limits to earth's resources. They all disagreed

with the view that environmental concerns have been exaggerated, and in addition, were not in agreement with taking a wait and see approach until scientific certainty in respect of environmental threats was achieved. However, when questioned as to whether individuals and companies should act in a self-interested manner to maximise utility and whether the optimal economic structure was one of free-market capitalism, views became more divided with a number of respondents choosing to not answer the issue in respect of free market capitalism on behalf of their companies.

Once again, the differences observed between companies within industry A and industry C were not significant. However in industry B, company B1 appeared to display a lower level of agreement with technocentric views when compared to company B2, with this difference considered to be significant at a 90% confidence level.

In general these responses need to be considered from the perspective that these are all low impact companies, and as such environmental commitment might be easier to demonstrate than in the case of a high impact company. In addition, the notion of social desirability bias could also play a role in the responses to this part of the interview. Social desirability bias is traditionally related to research in psychology and the social sciences and is seen as "the pervasive tendency of individuals to present themselves in the most favourable manner relative to prevailing social norms and mores" (King & Bruner, 2000:80). However, the issue is not limited to these fields, and the potential of social desirability bias to impact findings in terms of corporate environmentalism was highlighted by Banerjee (2002a:182). This might imply that the responses in respect of the statements in section A might reflect the view that the individual's felt they needed to project regarding their company's sustainability values rather than actual sustainability values held by the company.

Therefore, while the statements generally point to the fact that management are committed to environmental issues and that the dominant view of the company is not technocentric, the analysis of section B and C of the interview transcript and the supporting documents provide an opportunity to investigate whether these views are translated into action in terms of how companies are responding to the threat of climate change and the underlying motivations for such response.

3 Motivational drivers and company value implications

The questions in section B and C of the questionnaire focussed on the climate change response of each company and contained questions which probed the motivations for action taken in respect of environmental and climate change issues. The answers to these questions, together with a review of the supporting documents provided insights into motivational drivers. In addition, certain questions focused on the impact that voluntary climate change and environmental actions had in terms of the company's value, and these questions, in conjunction with a review of the supporting documents formed the basis for conclusions regarding the implications from a company value perspective.

As set out in chapter 4, the method adopted for coding the qualitative information in this study was the case-oriented quantification process outlined by Kuckartz (1995) which facilitates the combination of qualitative and quantitative elements in the analysis of the qualitative data. The results of the first order and second order coding process are outlined below.

3.1 First order coding process:

Codes were developed during the coding process by capturing specific elements relating to the topic under review which were highlighted in the interview transcripts and supporting documents. These codes were then allocated to specific text segments in the documents where issues were highlighted that referred to a particular code. A total of 129 codes were created in the coding process.

Codes were then analysed to determine specific themes and connections between the specific codes. This process resulted in the formation of 14 code clusters.

3.2 Second order coding process

The next phase of process linked the code clusters identified in the first order coding process with the pre-specified categories of the proposed conceptual framework, or developing new categories should the need arise. In order to accurately and consistently categorise code clusters, and the underlying codes, the following statements were used as guidelines to determine where a particular code fitted into the framework:

Legitimacy as key driver: The company takes action because stakeholders expect, or will soon expect it to take action.

Financial Business Case as key driver: The actions the company takes either make or save its money; all decisions are based on a cost benefit analysis. Where costs exceed financial benefit the company will not take action.

Moral Responsibility as key driver: It costs the company money or time to take action but the company regards it as the right thing to do.

Any code clusters which did not fit into one of the above categories were placed in a separate categorisation (Special) to determine if this particular response indicated a new category outside of the proposed conceptual framework.

While the above guidelines for categorisation enabled the categorisation of the majority of responses, there were a few instances where the allocation of a response to a particular category was not clear cut. In these instances relevant literature was sought to assist with the categorisation process. An example of this related to the coding of Environmental NGO partnerships. A number of the companies interviewed indicated that they had partnerships in place with Environmental NGOs as part of their response to environmental and climate change issues. These collaborations could be categorised as either moral responsibility, companies doing the right thing, or alternatively legitimacy, companies seeking legitimacy and social licence to operate through aligning themselves with a credible institution. There are relatively few research studies that deal with the investigation of the interactions between business and environmental NGOs (Deegan & Blomquist, 2006:343), however, a study conducted by Fiedler and Deegan (2007) investigated the motivations for environmental collaboration. Although their study focused on the building and construction industry in Australia, the motivations which emerged provide some assistance in categorising environmental NGO partnerships in terms of this study. Fielder and Deegan (2007:436) found that most interactions were seen as "a particularly useful way of satisfying the concerns of key stakeholders", in addition there was a "desire to appear credible or legitimate". An element of moral responsibility was observed in terms of responsibility to local communities, however the dominant motivational factors appeared to be driven by legitimacy issues. Based on the above research, and giving due consideration to the classification guidelines it

was decided that environmental NGO partnerships would be coded within the legitimacy coding network as part of the stakeholder engagement sub-driver.

The result of the overall categorisation process was the allocation of the code clusters to the pre-specified categories as follows:

Legitimacy category: regulatory and legal compliance; reputation; stakeholder engagement; and stakeholder pressure.

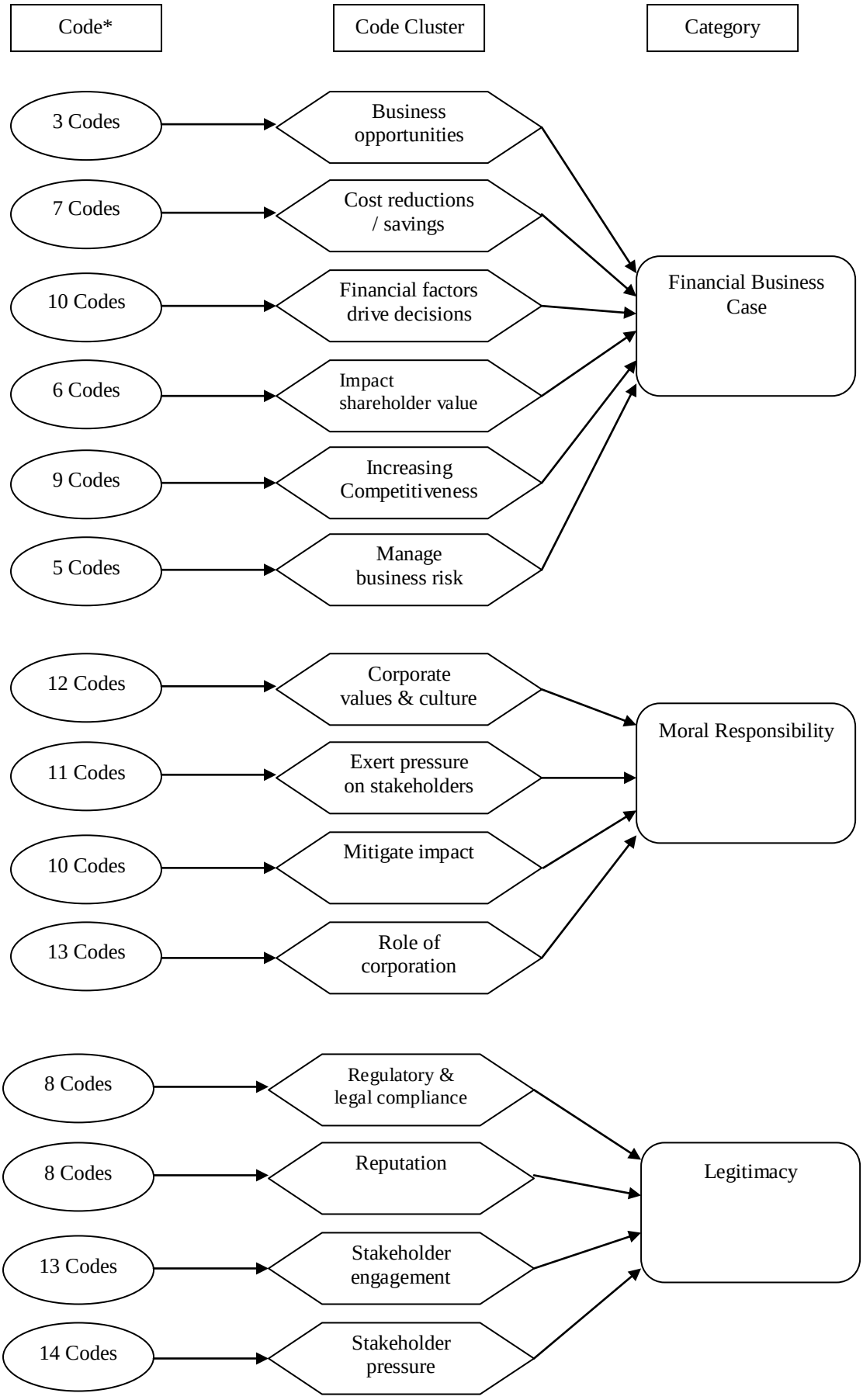
Financial business case category: financial factors drive decisions; cost reductions/savings; increasing competitiveness; impact on shareholder value; managing business risk; and business opportunities.

Moral responsibility category: corporate values and culture; the role of the corporation in terms of social and environmental responsibility; exerting pressure on stakeholders; and mitigating impact.

These code clusters therefore highlighted the key sub-drivers of each of the three main categories. The coding network diagrams are attached as Annexure IV and Annexure V contains a description of each sub-driver. Within each sub-driver, codes could either support or contradict that particular sub-driver and therefore each sub-driver has supporting codes (denoted with a plus sign in the analysis) and contradictory codes (denoted with a minus sign in the analysis).

The result of the categorisation process was that all motivational drivers highlighted in both the interview and supporting documents fitted into the three categories originally identified as part of the proposed conceptual framework, being the financial business case, legitimacy and moral responsibility. There did not appear to be any codes or code clusters which fell outside of this proposed categorisation. Figure 5.1 provides a schematic overview of the coding and categorisation process which resulted from the process outlined above.

Figure 5.1 Overview of final code clustering and categorisation



*Refer to network diagrams in Annexure IV for further details regarding individual codes

The six variable categories which were used in the quantitative analysis process were identified and defined as follows:

F+: all codes within the financial business case category which indicate support for the financial business case as the motivational driver.

F-: all codes within the financial business case category which refute the financial business case as the motivational driver.

L+: all codes within the legitimacy category which indicate support for legitimacy as the motivational driver.

L-: all codes within the legitimacy category which refute legitimacy as the motivational driver.

M+: all codes within the moral responsibility category which indicate support for moral responsibility as the motivational driver.

M-: all codes within the moral responsibility category which refute moral responsibility as the motivational driver.

A particular code could only belong to one of the above categories making them mutually exclusive categories.

3.3 Summarised findings: motivational drivers

This section sets out the summarised findings of the quantitative analysis carried out on the case study data. These findings are then discussed in further detail per case study in section 3.5 – 3.13.

Table 5.3 summarises the frequency (expressed as a percentage) of the occurrence of codes relating to each of the six categories for a particular company in the analysis carried out on a particular document, for example, in the interview transcript of company A1, text segments which were assigned codes which were classified as supporting the financial business case accounted for 39% of all text segments coded in the interview transcript. Section 3.5 – 3.13 discusses the findings in detail and highlights aspects related to statistical significance of differences displayed in table 5.3

Table 5.3 Summary of frequency distributions

Document analysed: Interview transcript						
	Financial		**Legitimacy**		**Moral Responsibility**	
Company	**F+**	**F-**	**L+**	**L-**	**M+**	**M-**
A1	39%	1%	22%	6%	27%	4%
A2	28%	8%	20%	8%	28%	10%
B1	35%	0%	28%	0%	35%	2%
B2 (1)	33%	6%	29%	6%	15%	10%
B2 (2)	33%	7%	22%	6%	24%	7%
C1	31%	10%	24%	10%	22%	4%
C2	24%	9%	15%	24%	15%	12%
Document analysed: CDP response						
	Financial		**Legitimacy**		**Moral Responsibility**	
Company	**F+**	**F-**	**L+**	**L-**	**M+**	**M-**
A1	42%	0%	23%	0%	33%	1%
A2	N/A	N/A	N/A	N/A	N/A	N/A
B1	43%	0%	28%	0%	29%	0%
B2	46%	0%	35%	12%	4%	4%
C1	33%	0%	29%	5%	31%	2%
C2	47%	0%	16%	5%	26%	5%
Document analysed: Annual & Sustainability Report						
	Financial		**Legitimacy**		**Moral Responsibility**	
Company	**F+**	**F-**	**L+**	**L-**	**M+**	**M-**
A1	25%	0%	25%	0%	50%	0%
A2	56%	0%	22%	0%	22%	0%
B1	35%	0%	24%	0%	41%	0%
B2	38%	0%	32%	0%	29%	2%
C1	34%	0%	17%	0%	48%	0%
C2	17%	0%	33%	0%	50%	0%

Table 5.4 Summary of statistical significance of differences

Company A1	**F+ L+**	**F- L-**	**F+ M+**	**F- M-**	**L+ M+**	**L- M-**	**F+ F-**	**L+ L-**	**M+ M-**
Interview	Yes	No	No	No	No	No	Yes	Yes	Yes
CDP	Yes	No	No	No	No	No	Yes	Yes	Yes
AR & SR	No	No	Yes	No	Yes	No	Yes	Yes	Yes

Company A2	**F+ L+**	**F- L-**	**F+ M+**	**F- M-**	**L+ M+**	**L- M-**	**F+ F-**	**L+ L-**	**M+ M-**
Interview	No	No	No	No	No	No	Yes	Yes	Yes
CDP	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
AR & SR	No	No	No	No	No	No	Yes	No	No

Company B1	**F+ L+**	**F- L-**	**F+ M+**	**F- M-**	**L+ M+**	**L- M-**	**F+ F-**	**L+ L-**	**M+ M-**
Interview	No	No	No	No	No	No	Yes	Yes	Yes
CDP	Yes	No	Yes	No	No	No	Yes	Yes	Yes
AR & SR	No	No	No	No	Yes	No	Yes	Yes	Yes

Company B2	**F+ L+**	**F- L-**	**F+ M+**	**F- M-**	**L+ M+**	**L- M-**	**F+ F-**	**L+ L-**	**M+ M-**
Interview version 1	No	No	Yes	No	Yes	No	Yes	Yes	No
Interview version 2	No	No	No	No	No	No	Yes	Yes	Yes
CDP	No	Yes	Yes	No	Yes	No	Yes	Yes	No
AR & SR	No	No	No	No	No	No	Yes	Yes	Yes

Company C1	**F+ L+**	**F- L-**	**F+ M+**	**F- M-**	**L+ M+**	**L- M-**	**F+ F-**	**L+ L-**	**M+ M-**
Interview	No	No	No	No	No	No	Yes	Yes	Yes
CDP	No	No	No	No	No	No	Yes	Yes	Yes
AR & SR	No	No	No	No	Yes	No	Yes	Yes	Yes

Company C2	**F+ L+**	**F- L-**	**F+ M+**	**F- M-**	**L+ M+**	**L- M-**	**F+ F-**	**L+ L-**	**M+ M-**
Interview	No	Yes	No	No	No	No	Yes	No	No
CDP	Yes	No	No	No	No	No	Yes	No	Yes
AR & SR	No	No	Yes	No	No	No	Yes	Yes	Yes

Table 5.4 illustrates the statistical significance of the differences observed in the frequency of coding relating to each category (as illustrated in table 5.3 above). The testing of statistical significance of differences between various categories assists in the process of ranking the relative importance of each category as a motivational driver for a particular company, and facilitates the process of identification of the dominant motivational driver, if one exists.

While testing for statistical significance enhances some of the conclusions which can be drawn from the data, the nature of the interview process is that a limited amount of questions could be addressed in the time period allocated and thus sample sizes in respect of the number of observations which could be coded remained relatively small which influences the outcome of tests for statistical significance. Therefore the approach taken in the analysis section which follows was to focus on the frequency distributions and observed differences to highlight patterns and relationships. Where differences were statistically significant this was noted in the analysis and strengthened the conclusions drawn from the data.

3.4 Individual case reports and cross case comparisons in respect of motivational drivers

The analysis of each case follows a standard template. The following areas are analysed per company:

Company response to climate change:

A summary of the company's strategies adopted in respect of climate change mitigation and review of actions taken to mitigate climate change impact is provided.

Motivations:

This section provides an outline of the motivational drivers which were highlighted in the interview process and then compares these to the motivations which the supporting documents (being the CDP and annual and sustainability reports) revealed. Frequency bar charts are used to illustrate differences and similarities. A summary of the statistical significance of differences in the frequency distribution is provided for each case study and key issues are highlighted in each discussion.

To illustrate how the information is presented in the tables and frequency bar charts, Annexure VI contains an overview using company A1 as an example.

Impact on company value:

This section deals with the impact of climate change mitigation actions on company value and highlights respondents' perceptions regarding the impact which climate change has on the company as well as investigating whether such impacts are discussed in the supporting documentation.

The supporting document review encompassed both mandatory and non-mandatory financial disclosures. Therefore the focus was on information contained in the annual reports of the relevant companies, including financial statements, notes to financial statements, value added statements, sustainability reports and any supplementary information contained on the company's website. Industry reviews and reports were also consulted to ascertain whether they contained any supplementary information which would be useful in obtaining a full picture of the companies' financial investment in climate change initiatives.

Cross case comparisons:

For each industry, the cross case comparison section focused on whether companies within one industry displayed different motivational drivers for their action on climate change. This was assessed in terms of the three motivational categories, being financial business case, legitimacy, and moral responsibility, taking into account the occurrence of statements which supported and those which refuted each category. In addition, within each particular category the data was analysed to determine whether the key sub-drivers were of similar importance or whether there were differences between sub-drivers.

The following sections contain an overview of the analysis of each case, followed by a cross case comparison per industry. Thereafter general observations and conclusions are covered in section 4.

3.5 Case study: Company A1

3.5.1 Introduction

The information regarding the person to contact in respect of sustainability related queries was prominently displayed on the company website. The individual, when contacted, was very accommodating and readily agreed to meet to discuss the company's approach to environmental issues and climate change.

3.5.2 General response to climate change

Sustainability features as one of the pillars of the company strategy. The company views climate change as a reality and it has featured at both a strategic and operational planning level within the organisation. The company intends taking a leadership role in climate change issues within its sector. The organisation believes that climate change will have a definite impact on their business model and is therefore actively managing this risk.

The respondent was of the opinion that regulatory intervention would be necessary to tackle climate change as companies were not moving quickly enough in terms of voluntary action. The company is of the view that emission caps will be introduced in South Africa and are already considering how they will respond to this.

In terms of response to the threat of climate change, the company has focussed on understanding its carbon footprint, and has carried out a travel analysis. The initial focus of their strategy is on internal issues such as travel, energy and fuel whereas the future strategy will focus on the broader carbon issues within the business and will also include elements of the supply chain. The company has an emissions reduction program in place and has set initial reduction targets for electricity usage (other target will be developed over time).

The company has made use of carbon offsets but views these as a last resort if they are unable to internally reduce emissions. The key issue they would consider in a deciding to buy offsets would be the nature of the offset project.

3.5.3 Company motivations

The following tables highlight the coding frequencies observed in the various documents analysed and the statistical significance of differences between observed frequencies across the coding categories. These summaries are discussed in more detail in the sub-sections which follow.

Table 5.5 Summary of coding frequencies

Company A1	**Financial**		**Legitimacy**		**Moral Responsibility**	
	F+	**F-**	**L+**	**L-**	**M+**	**M-**
Interview	39%	1%	22%	6%	27%	4%
CDP	42%	0%	23%	0%	33%	1%
AR & SR	25%	0%	25%	0%	50%	0%

Table 5.6 Summary of statistical significance of differences (90% confidence)

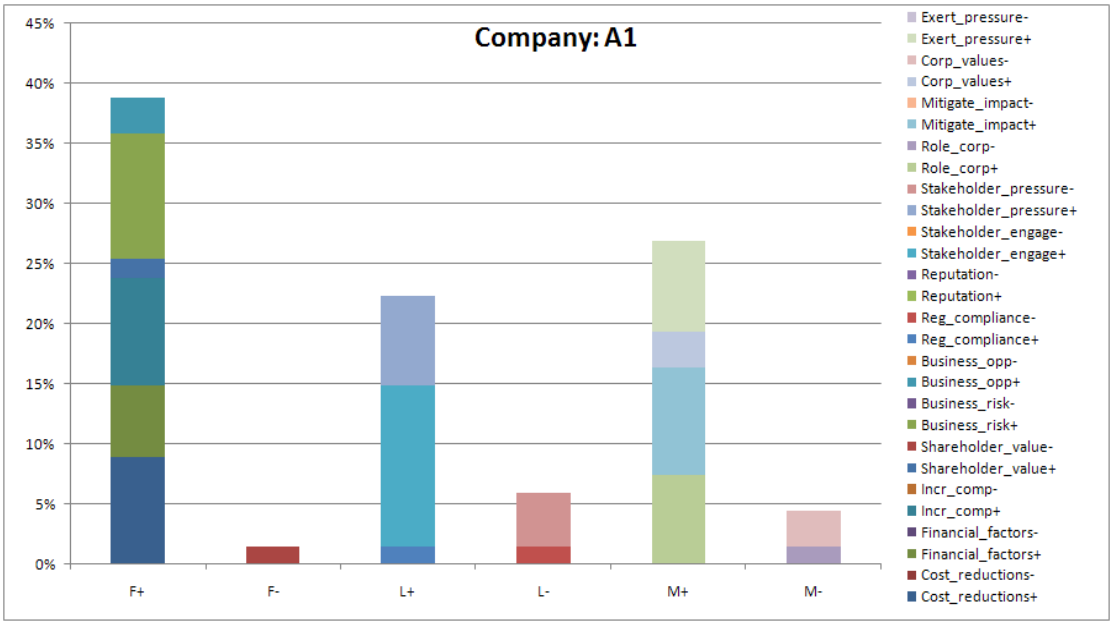
Company A1	F+ L+	F- L-	F+ M+	F- M-	L+ M+	L- M-	F+ F-	L+ L-	M+ M-
Interview	**Yes**	No	No	No	No	No	**Yes**	**Yes**	**Yes**
CDP	**Yes**	No	No	No	No	No	**Yes**	**Yes**	**Yes**
AR & SR	No	No	**Yes**	No	**Yes**	No	**Yes**	**Yes**	**Yes**

3.5.3.1 Interview

The company response to interview questions focused mainly on aspects which supported the key driver categories, with little evidence of a lack of support for any particular category. In each category, the difference between statements which supported a particular category and those which did not support each category was statistically significant.

As illustrated in graph 5.7, the dominant driver for environmental and specifically climate change action for this company appears to be the financial business case. The number of responses which corresponded with financial aspects (39% of total responses) outweighed both legitimacy based responses (22%) and moral responsibility responses (27%). The difference between the frequency of coding for the financial business case and those codes which supported legitimacy was statistically significant.

Graph 5.7 Frequency analysis of interview coding: Company A1



The sub-drivers within the financial business case focussed on issues related to managing business risk, increasing competitiveness and cost reductions and savings. The key aspect of business risk identified by this respondent focused on managing their supply chain, with the respondent noting that: "as a business we secure our supply for the future. Our business wouldn't exist without products." As such the company has proactively engaged with its suppliers in an attempt to mitigate the future impact of climate change on its supply chain.

Cost reductions and savings focus predominantly on energy efficiency initiatives. The focus on competitive positioning was highlighted by an emphasis on taking a leadership role in environmental and climate change issues. A recurrent theme highlighted by this respondent was the focus on the company brand and the resultant brand positioning, as the following quote reveals: "From a brand point of view it's the kind of thing that our brand gets involved in because we are a caring brand we are a South African brand and we care about environmental issues so they are important to us".

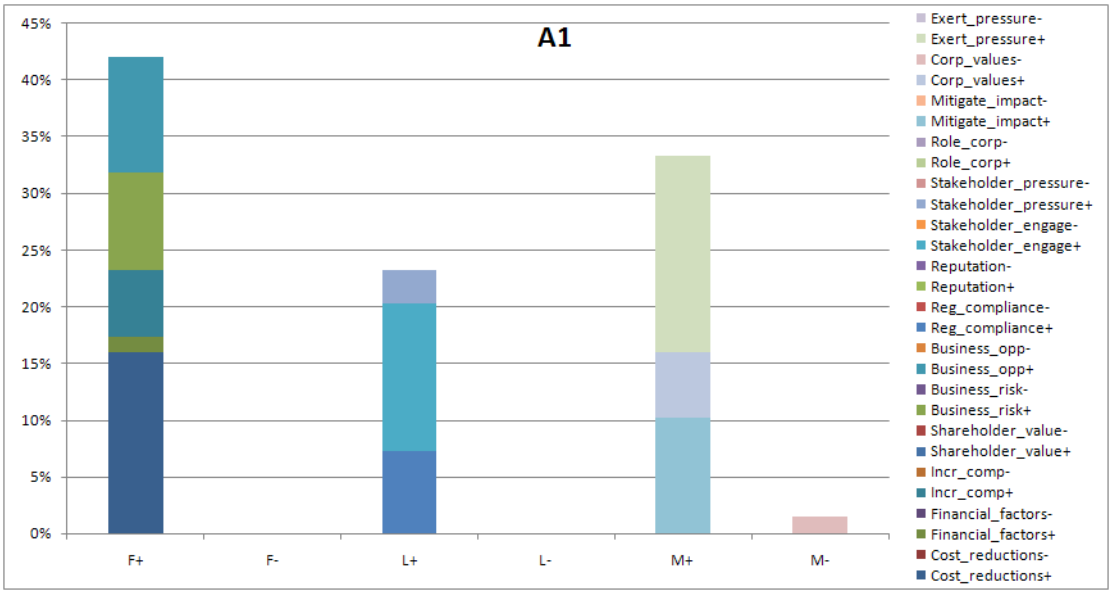
Moral responsibility featured as the secondary driver of voluntary action for this company. One of the key sub-drivers was mitigating impact through recycling, carbon offsets and supporting the development of green energy options. Exerting pressure on stakeholders by driving environmental awareness and encouraging behaviour changes in customers emerged as another sub-driver.

The third driver of voluntary action emerged as legitimacy. In this respect, the key focus of this company is on proactive engagement with stakeholders rather than waiting to react to specific stakeholder pressure, "we found that its quite important to be talking to all your stakeholders and finding out everything that they know about it *(environmental issues)* and what do they expect of us, and how do they see the role *(our company)* plays in engagement with them in the future and our actions, what are we actually doing. So the stakeholder engagement has become quite important." Pressure from stakeholders for the company to respond to climate change issues appeared to be limited. However some evidence existed that the top end of the consumer market might exert a level of pressure, as would international investors. From a local investor perspective, the respondent noted that there is a growing level of interest as local investors: "become more educated on many of these issues, and they had obviously been exposed to it through the international financial community

and also now that the CDP report has come out.....so the financial investment community are now far more versed on it and far more involved in asking lots of questions."

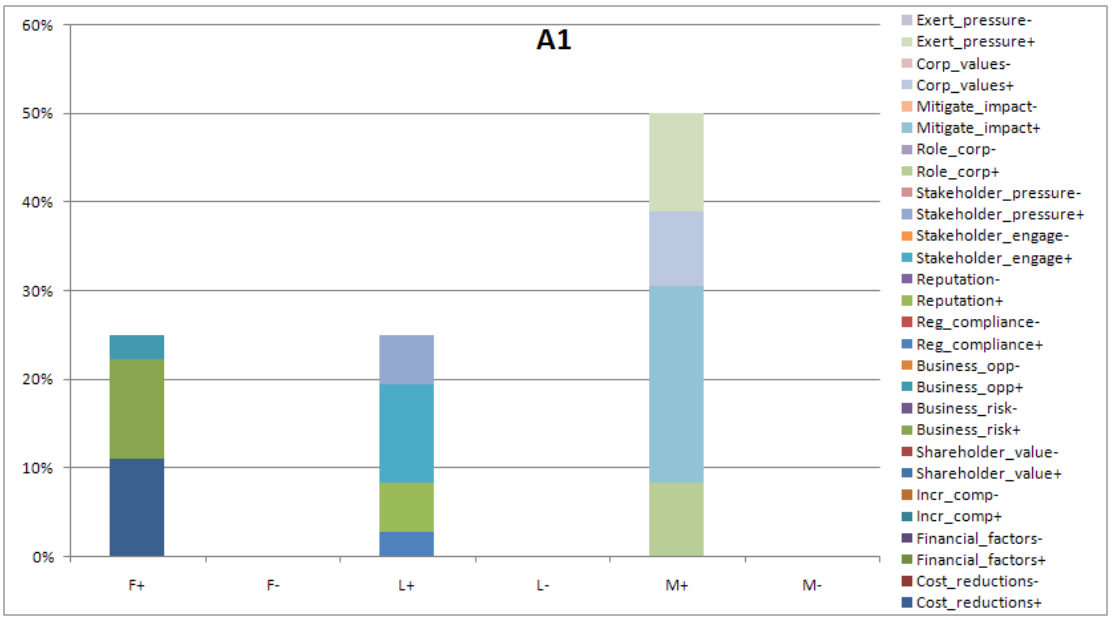
3.5.3.2 Review of supporting documents

Graph 5.8 Frequency analysis of CDP coding: Company A1



The ranking of the motivational drivers reflected in responses to the CDP questionnaire mirror those of the interview, starting with the financial business case, then moral responsibility and lastly legitimacy, once again the difference between the financial business case and legitimacy as a driver is statistically significant. However, despite this concurrence, there are differences in the weight of the sub-drivers which contribute to this overall picture. First, the financial business case sub-drivers in the CDP response focus more on cost savings and new business opportunities rather than on competitiveness and managing business risk. Stakeholder engagement still features as the dominant sub-driver within the legitimacy grouping, but elements of regulatory and legal compliance are in evidence as a result of the company's anticipation of legislation, and resultant engagement with regulators in terms of the establishment of climate change policies in South Africa. From the moral responsibility side, exerting pressure on stakeholders takes on a more dominant position as a sub-driver. This is mainly focussed on exerting pressure on suppliers in the form of green procurement initiatives.

Graph 5.9 Frequency analysis of annual report coding: Company A1



A review of the annual report reflects a different view of the dominant motivations for engaging in environmental action. Moral responsibility exceeds both the financial business case and legitimacy as the dominant driver, the differences between moral responsibility and both legitimacy and the financial business case are statistically significant. Within the moral responsibility grouping, the dominant sub-driver was the mitigation of impact where numerous references were made throughout the report in respect of efforts to reduce, reuse and recycle waste. Stakeholder engagement once again dominated the legitimacy grouping, with cost reductions and savings, coupled with management of business risk accounting for a large portion of the sub-drivers within the financial business case.

3.5.4 Impact on company value

A review of the annual report of this company revealed no specific disclosures in respect of climate change mitigation expenses or investments. However the sustainability report contains details of environmental indicators in respect of energy and water usage, waste and carbon footprint. The company discloses its total corporate social investment spend but does not provide a breakdown of this expenditure.

When the respondent was asked what impact the actions the company has taken regarding climate change have had on the bottom line the answer was: “I think positive, because even now, all the work that we have done, it really hasn’t cost us a

fortune. There's been no negative for us." This view was reiterated in the CDP questionnaire response which emphasised that no major investments had been made and that the focus had been on small projects with short payback periods. However, there was reference to the fact that the large investments required to reduce emissions might offset the savings achieved. Given the focus on energy efficiency as part of the overall climate change strategy, it is interesting to note that according to the company's CDP submission, electricity represents less than 1% of operating costs. When questioned in the interview as to what impact the actions taken have had on company value the answer was "Positive on the value, without a doubt". No reasons were given for this assertion.

A question in the interview regarding whether the company would make a substantial investment in climate change mitigation efforts, and whether this would only be done if benefits flowed to the company met with the response that any investment of this nature would need to produce some energy efficiency or green energy benefit before such an investment would be contemplated. When questioned on how the company would determine whether an investment in climate change mitigation was a good or bad investment, the respondent revealed that this was not something that they had given any thought to as yet.

3.5.5 Conclusion

The company's positioning as a sustainability (and climate change mitigation) leader, has resulted in it taking proactive measures to mitigate its environmental impact. From the interview it emerged that this company's voluntary response to the climate change threat is predominantly motivated by efforts to manage business risk, brand positioning and cost savings arising from energy efficiency drives. Secondary drivers focus on voluntarily mitigating the company's impact and opportunities created for legitimising the company's actions through proactive stakeholder engagement.

The interview and CDP analysis reveal similar patterns of motivations with a focus on the financial business case, however this focus shifts when analysing the annual and sustainability report where issues of moral responsibility come to the fore.

It appears that the company has not made any substantial investments in climate change mitigation efforts and those investments which have been made have had a

positive impact on the financial position of the company focusing primarily on driving operational efficiencies.

3.6 Case study: Company A2

3.6.1 Introduction

Information concerning the person responsible for sustainability issues was not available on the company's internet site. When the company switchboard operator was contacted telephonically the query was directed to the Human Resources department who then identified the relevant individual. The relevant individual is an executive manager who has additional responsibility for environmental issues. Once contacted the individual was amenable to meeting.

3.6.2 General response to climate change

The company, while aware of the threat posed by climate change, has not taken any action at this stage to develop or implement a particular climate change mitigation strategy. The company does not intend to take a leadership role in climate change issues within its sector. While environmental issues have featured at a strategic level, the company has not directly focused on climate change issues at either a strategic or operational level. There is awareness within the organisation of the potential threat that climate change poses, however this threat is not incorporated in the current 5 year planning process, and might, at most, be included as a footnote in the next 5 year plan. That being said, various operational initiatives have had a positive impact in terms of climate change mitigation, such as driving energy and fuel efficiencies. The respondent provided candid insight into the motivations for these initiatives pointing out that: "all the things we are doing we could hide them under the guise of environment but in fact they all make very good business sense".

The company considers itself to be relatively low impact in terms of climate change as a result of the sector in which it operates. The respondent did not given an indication that the company was considering how it could influence or be influenced by indirect impacts.

When questioned as to whether regulatory intervention would be necessary to combat climate change, the respondent was of the view that this would depend on the particular industry, with high impact industries requiring legislation, while voluntary mitigation action would suffice for low impact industries, such as the industry within

which the respondent's company operates. The respondent was of the opinion that emissions caps would be introduced in South Africa, however the timing and potential impact had not been considered by the company as they did not focus on these issues given the perceived low impact of their particular industry.

The company does not participate in the Carbon Disclosure Project as they are of the view that the costs incurred to answer the questions are high and that once they have answers to the questions in terms of their carbon footprint, emissions profile and related information this information will not fundamentally change their business model. According to the respondent: "we are not really going to achieve anything by knowing, it will cost us a lot of money." The company's approach is therefore to focus on the positive impact they can make in terms of educating and creating environmental awareness.

When questioned as to what actions competitors were taking the respondent was of the opinion that a lot of what was being done in the sector was PR, and that real tangible action was probably limited. With this in mind the respondent expressed the view that the company management does not want to be seen to be greenwashing mentioning that "we would really rather be seen to be doing nothing than to be doing greenwashing".

Despite not having an emissions reduction program in place or any emissions reduction targets, the company is considering buying carbon offsets to mitigate their impact. They have spent some time evaluating the carbon offset process and are primarily concerned with the legitimacy of the offset provider in terms of actually carrying out the particular offset activity which is sponsored by the purchase of the offset. The respondent mentioned that carbon offsets would be considered once the company had taken internal mitigation actions, and where further internal changes were not possible due to the nature of the company's business and area of expertise.

3.6.3 Company motivations

The following tables highlight the coding frequencies observed in the various documents analysed and the statistical significance of differences between observed frequencies across the coding categories. These summaries are discussed in more detail in the sub-sections which follow.

Table 5.7 Summary of coding frequencies

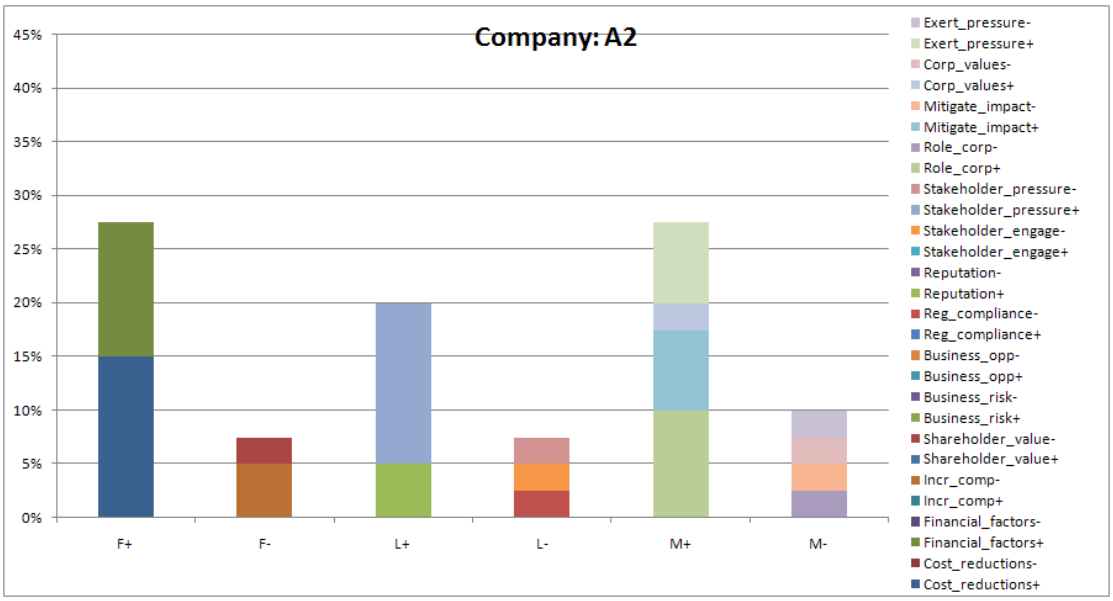
Company A2	Financial		Legitimacy		Moral Responsibility	
	F+	F-	L+	L-	M+	M-
Interview	28%	8%	20%	8%	28%	10%
CDP	N/A	N/A	N/A	N/A	N/A	N/A
AR & SR	56%	0%	22%	0%	22%	0%

Table 5.8 Summary of statistical significance of differences (90% confidence)

Company A2	F+ L+	F- L-	F+ M+	F- M-	L+ M+	L- M-	F+ F-	L+ L-	M+ M-
Interview	No	No	No	No	No	No	**Yes**	**Yes**	**Yes**
CDP	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
AR & SR	No	No	No	No	No	No	**Yes**	No	No

3.6.3.1 Interview

Graph 5.10: Frequency analysis of interview coding: Company A2



Graph 5.10 illustrates that there is no clear dominant motivational driver apparent from the interview coding. Both the financial business case and the moral responsibility motivational category each represent 27.5% of overall coding, with legitimacy trailing at 20%. Additional insights into motivational drivers are provided by the "negative" element categories where factors not supporting the moral responsibility category outweigh factors not supporting the financial category, which gives some indication that the financial business case might be slightly more important as a determinant of company motivations in this particular instance. While

none of the differences discussed above are statistically significant, they do provide some indication of factors driving environmental and climate change action for this particular company.

There is a clear focus in the financial business case on cost reductions and savings (15% of all coding for the interview) and the consideration of financial factors in decision making (12.5% of the coding for this interview). There is no evidence that this company is using climate change mitigation and environmental action to influence competitive positioning, manage business risk, increase company value or unlock new business opportunities.

The key sub-drivers of motivations in the moral responsibility category are: fulfilling the role of the corporate in terms of social and environmental responsibility, mitigating impact and exerting pressure on stakeholders. The main focus areas of the company are driving environmental awareness through various educational initiatives and encouraging behaviour changes in customers. Counteracting these positive associations with moral responsibility are responses which highlighted aspects of lack of support for moral responsibility, with the respondent admitting to lack of tangible action in respect of environmental and climate change action: "we are very aware of our impact and our place within it. But in terms of action there is still a way to go." In addition, the commitment of top management to environmental issues appears to be driven by financial rather than moral responsibility factors as noted by the respondent: "So we are not necessarily running out there reducing our impact for the sake of the environment we are reducing our impact because most of it makes good business sense"

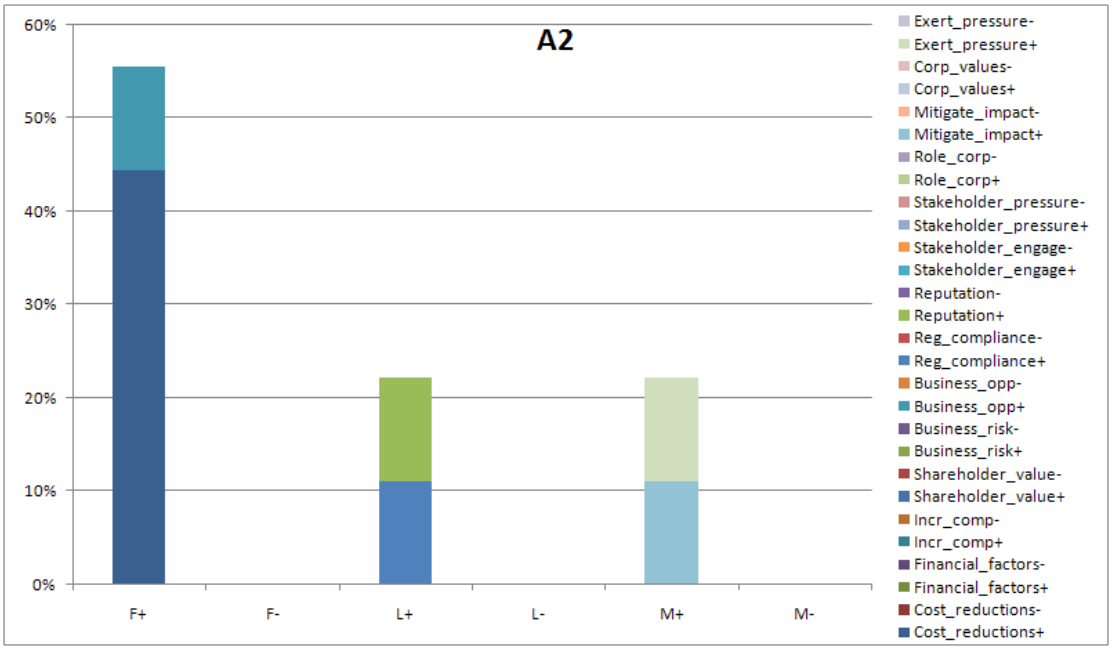
In terms of the sub-drivers of the legitimacy category, stakeholder pressure dominates with reputation featuring as another consideration which influences company action. Stakeholder pressure originates from a number of areas, but from a consumer perspective is limited to the top end of the market and even then it would appear that pressure is not necessarily transforming into definitive action from consumers, as the respondent put it "The talk far outweighs the actual action at point of purchase". In addition, the respondent mentioned that shareholders are increasingly asking what the company is doing in respect of environmental and climate change issues. It is interesting to note that this increased interest has not resulted in the company disclosing information regarding their efforts in this regard in the form of voluntary

initiatives such as the CDP. As mentioned earlier, the company is of the view that it is too expensive to derive and analyse the data for this initiative. There is no evidence of action originating from legal or regulatory pressure at this stage.

3.6.3.2 Review of supporting documents

As mentioned previously the company did not participate in the CDP and therefore the only supporting document considered was the company's annual report and sustainability report.

Graph 5.11 Frequency analysis of annual report coding: Company A2



This company has very limited information in their annual report regarding environmental and climate change issues. The lack of information in this respect curtails any extensive analysis of coding from this document and it should be noted that the differences illustrated in the above frequency analysis are not statistically significant due to the small number of observations which were coded in the annual report. The key motivational driver would however appear to be the financial business case where the sub-driver dealing with cost reductions featured prominently in terms of fuel reductions and energy efficiency initiatives. The focus areas of legitimacy were complying with requirements for good corporate governance and adopting standards in anticipation of possible future regulations. Moral responsibility issues focused on exerting pressure on stakeholders by driving environmental awareness initiatives, and focusing on mitigating impact through recycling and waste

management initiatives. The supporting documents highlight some of the same issues which the interview uncovered, however, it must be emphasised that there was very limited information provided by the company in respect of environmental and climate change in their annual report.

3.6.4 Impact on company value

The respondent did not highlight any aspects regarding the impact on company value, other than indirectly through the focus on cost reductions and operational efficiencies which "make good business sense". The company does not have any specific criteria in place for analysing the effects of investments in environmental and climate change initiatives and takes the view that: "the benefit is self evident, if we educate, if we are aiming for a million and we hit one well one is better than none." However, it would appear that the size and scale of investment is a key consideration in environmental projects.

The annual report does not contain specific reference to expenditures, investments or revenues associated with environmental or climate change initiatives and contains no environmental indicators on usage of energy, water or related resources.

3.6.5 Conclusions

The company is not taking a leadership position in terms of climate change mitigation action and its philosophy appears to be that the financial implications of any actions are of primary importance, while environmental considerations receive at best a secondary focus. It has no climate change strategy in place, and does not intend to develop one given the perceived costs associated with ascertaining its current carbon footprint. From an environmental action perspective this company appears to be primarily motivated by cost reductions and taking action which makes business sense but has a knock on positive impact on the environment. The company is however committed to driving environmental awareness and changing customer behaviour but the scale of projects and cost considerations remain top of mind. The analysis of supporting documents concurs with the focus on financial factors.

Actions taken by the company in respect of environmental and climate change action have focussed primarily on driving operational efficiencies with a focus on energy and fuel reductions.

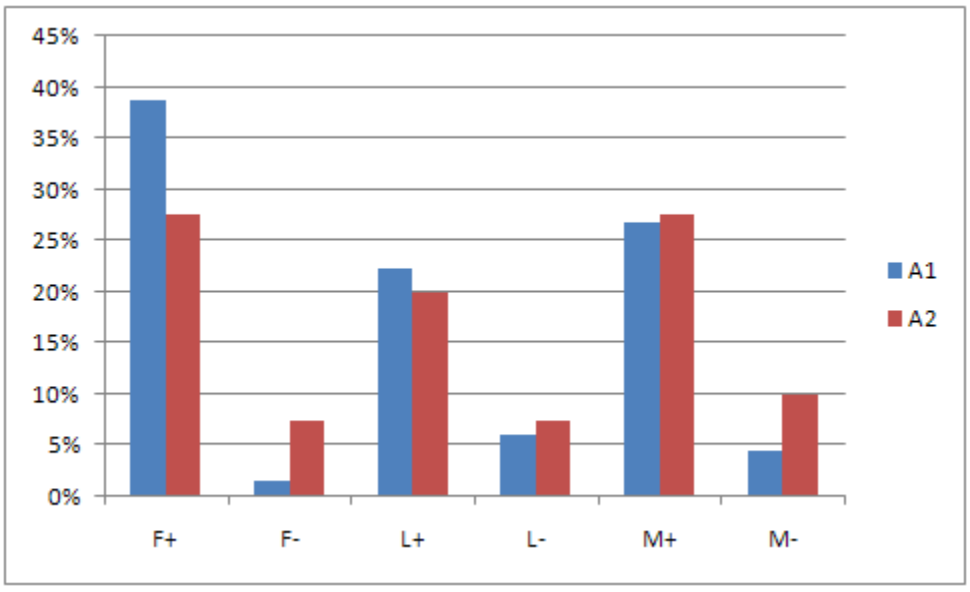
3.7 Comparison of company A1 and A2

3.7.1 General comparison

Company A1 has a climate change strategy in place and aims to play a leadership role in terms of climate change mitigation action. In contrast to this, Company A2 has no specific climate change strategy and does not intend to play a leadership role in respect of climate change mitigation. While Company A1 has a specific function within the company which focuses on sustainability issues, company A2 has an individual tasked with environmental issues in addition to the role the individual has as a managing executive with particular functional responsibility within the organisation.

3.7.2 Interview comparisons

Graph 5.12 Comparison of key drivers company A1 and A2: Interview

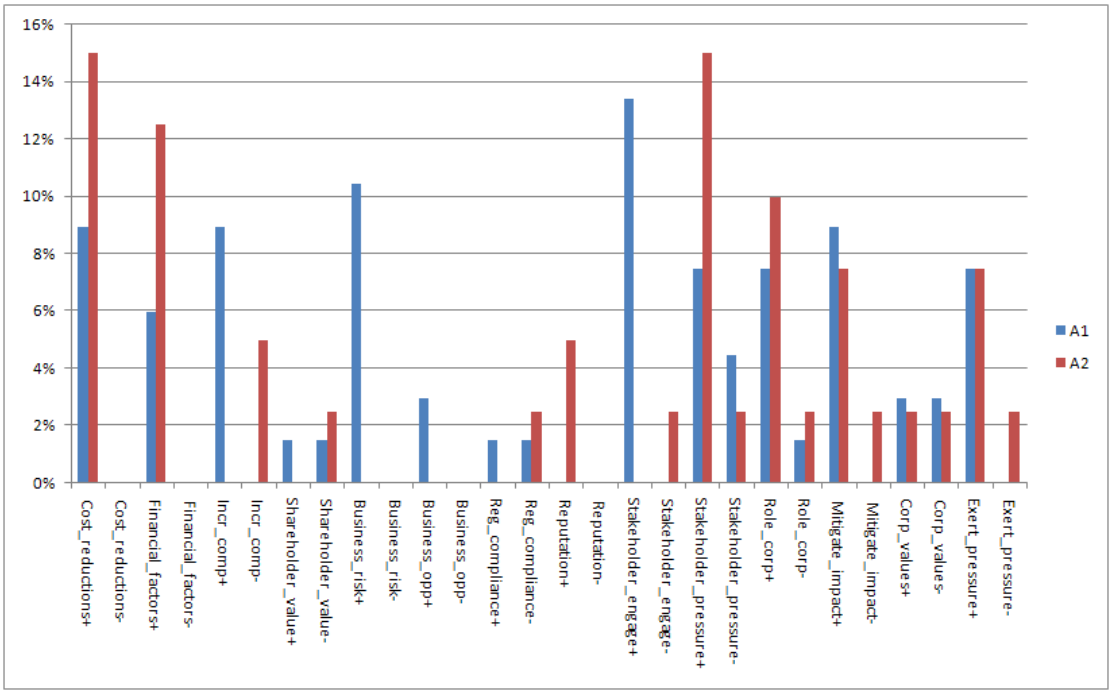


Both companies appeared to focus on the financial business case as a key motivational driver, with moral responsibility concerns ranking a close second for company A2. Both companies displayed some indications that legitimacy concerns drove certain aspects of their actions, however these did not feature as prominently as the financial and moral responsibility aspects. None of the differences between company A1 and company A2 in respect of the key driver categories are statistically significant.

If one considers the financial business case frequency analysis it is apparent that company A1 displayed a higher level of outright support for the financial business

case with very few statements not supporting the financial business case. In contrast, company A2 had a lower percentage of statements in support of the financial business case and a higher percentage of statements which did not support the financial business case when compared to company A1. Within the financial business case the sub-drivers of company A2 are only focussed on two aspects, being cost reductions and the consideration of financial implications in decision making. Company A1 on the other hand demonstrates a wider variety of sub-drivers supporting the financial business case and its focus on increasing competitiveness and managing business risk is statistically significantly different from company A2 which makes no mention of managing business risk and displays a number of statements which refute the idea that it is pursuing climate change actions to increase its competitiveness.

Graph: 5.13 Comparison of sub-drivers A1 and A2: Interview



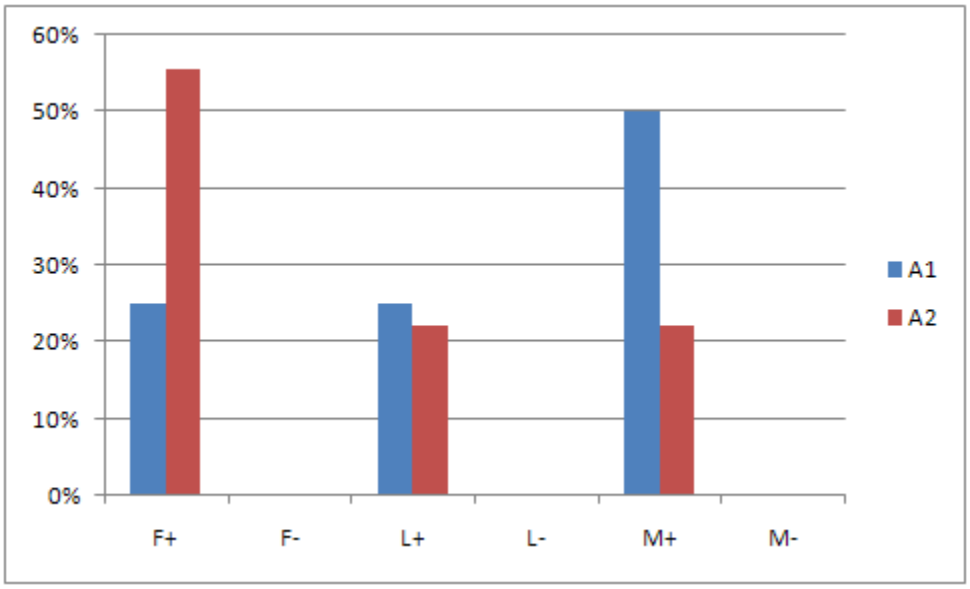
The differences in the profile of answers to the interview questions for company A1 and A2 are less apparent when one considers the legitimacy and moral responsibility categories. In both cases company A2 displays slightly higher levels of lack of support for these two categories. The underlying sub-drivers of moral responsibility motivational factors are very similar, however the sub-drivers of legitimacy focus on different aspects. In the case of company A1 the focus is on stakeholder engagement (where the difference is statistically significantly), whereas the analysis of company A2 reveals a much higher focus on stakeholder pressure.

These discrepancies between the two companies highlight that company A1 appears to see the adoption of climate change mitigation action as an opportunity to increase its competitiveness and stakeholder engagement while at the same time managing its business risk. Company A2 appears to be focused on reducing costs and reacting to stakeholder pressure. In some respects, the difference between company A1 and company A2 would therefore appear to be the adoption of a proactive stance versus a reactive stance.

3.7.3 Supporting document comparison

As company A2 did not take part in the CDP process no comparisons can be made regarding the CDP responses, other than to point out that voluntarily partaking in the CDP process reinforces the view that company A1 is displaying further evidence of a proactive approach to engaging on environmental and climate change issues with its stakeholders. The reasons supplied by company A2 for not taking part in the CDP process focused on the costs involved in obtaining the information required for the questionnaire and the fact that the information would not result in a change in their business model.

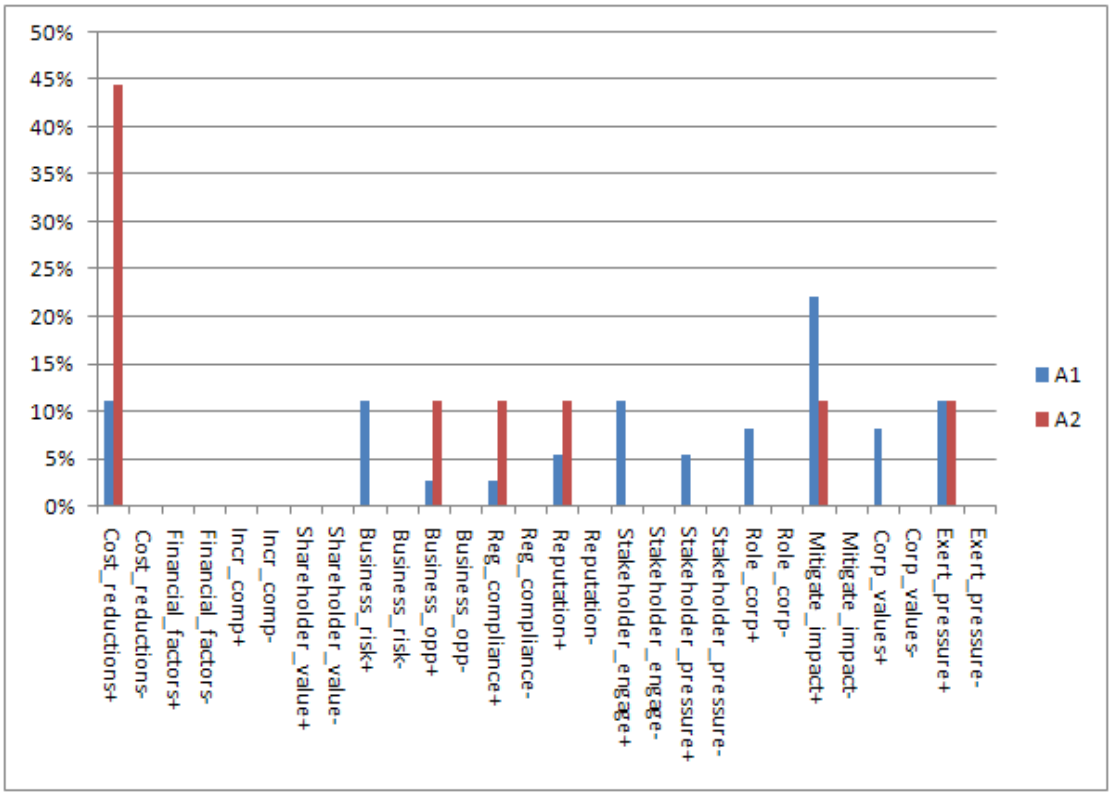
Graph 5.14 Comparison of key drivers company A1 and A2: Annual Report & Sustainability Report



When the coding analysis of the annual and sustainability reports of the two companies are considered it is clear that company A1 used the opportunity to emphasise elements of moral responsibility, while company A2 focuses on the

financial implications such as cost savings which arise from the environmental actions it has taken. The difference between these two categories is statistically significant.

Graph 5.15 Comparison of sub-drivers company A1 and A2: Annual Report & Sustainability Report



3.7.4 Conclusions:

There appear to be a number of differences between the approaches of these two companies with respect to climate change mitigation action. Company A1 appears to be focusing on proactively engaging with its stakeholders, anticipating the potential risk that climate change could bring to its business model and proactively managing this risk by engaging its supply chain. In addition, it is using the opportunity to raise its profile and position its brand to benefit from its proactive stance from a competitive positioning perspective.

Company A2 appears to focus on actions which primarily make business sense and which might have a secondary positive impact on the environment which results in most of its actions being directed to cost reduction and savings initiatives such as focusing on energy and fuel efficiency. The company does not appear to be taking a

proactive stance, other than in the area of driving environmental awareness through various initiatives using its distribution network.

3.8 Case study: Company B1

3.8.1 Introduction

The information regarding the person to contact in respect of sustainability related queries was prominently displayed on the company website. The individual, when contacted, was very accommodating and readily agreed to meet to discuss the company's views on climate change. However, due to time pressures on the manager of the area, the meeting was delegated to two team members from the sustainability area.

3.8.2 General response to climate change

The company explicitly includes environmental responsibility as part of its overall business strategy and aims to take a leadership position in its sector in respect of climate change mitigation action.

The company views climate change as serious and has developed a climate change position statement and strategy to measure and mitigate the company's impact. Climate change has featured at both a strategic and operational level and the company believes that climate change will impact on its business model both from a financial and reputational perspective. The company has an emissions reduction program in place and targets for emissions reduction have been set. The focus of the reduction targets at this stage are on paper usage, water, electricity and travel. Key initiatives undertaken to date have been focused on calculating the company's carbon footprint and undertaking various initiatives to "green" the company's existing buildings through focusing on energy efficiency initiatives.

The respondent believes that legislative intervention is essential, but that the company believes in taking the initiative and going beyond what is required by law. The respondent is of the view that emissions caps will be introduced in the near future.

3.8.3 Company motivations

The following tables highlight the coding frequencies observed in the various documents analysed and the statistical significance of differences between observed

frequencies across the coding categories. These summaries are discussed in more detail in the sub-sections which follow.

Table 5.9 Summary of coding frequencies

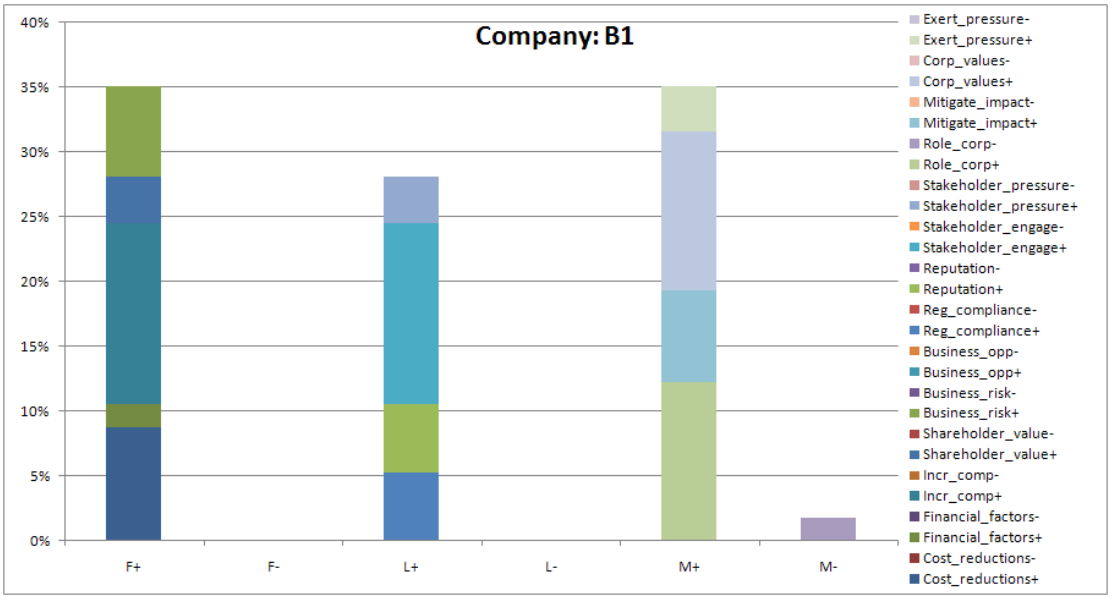
Company B1	Financial		Legitimacy		Moral Responsibility	
	F+	F-	L+	L-	M+	M-
Interview	35%	0%	28%	0%	35%	2%
CDP	43%	0%	28%	0%	29%	0%
AR & SR	35%	0%	24%	0%	41%	0%

Table 5.10 Summary of statistical significance of differences (90% confidence)

Company B1	F+ L+	F- L-	F+ M+	F- M-	L+ M+	L- M-	F+ F-	L+ L-	M+ M-
Interview	No	No	No	No	No	No	**Yes**	**Yes**	**Yes**
CDP	**Yes**	No	**Yes**	No	No	No	**Yes**	**Yes**	**Yes**
AR & SR	No	No	No	No	**Yes**	No	**Yes**	**Yes**	**Yes**

3.8.3.1 Interview

Graph 5.16 Frequency analysis of interview coding: Company B1



The company highlighted aspects within all three categories as drivers for action in respect of climate change. There was little or no evidence of a lack of support for any of the categories. The financial business case and moral responsibility considerations appeared to be the dominant motivational drivers for company B1, with legitimacy concerns accounting for the remainder of factors driving company action in this

respect. The differences between these three categories was however not statistically significant.

The key sub-driver of the financial business case category was increasing competitiveness with a focus on branding and brand positioning as a leader in environmental issues. With the desired outcome, according to the respondent, being that "people will actually come to us because they know we are supporting corporate social investment and specifically green issues." Other sub-drivers within the financial business case were cost reductions and savings, as well as a focus on managing business risk.

The key sub-driver within the legitimacy framework focused on stakeholder engagement where partnerships with environmental NGOs featured as a key strategic thrust and efforts were made to engage with both customers and staff through environmental initiatives and product offerings.

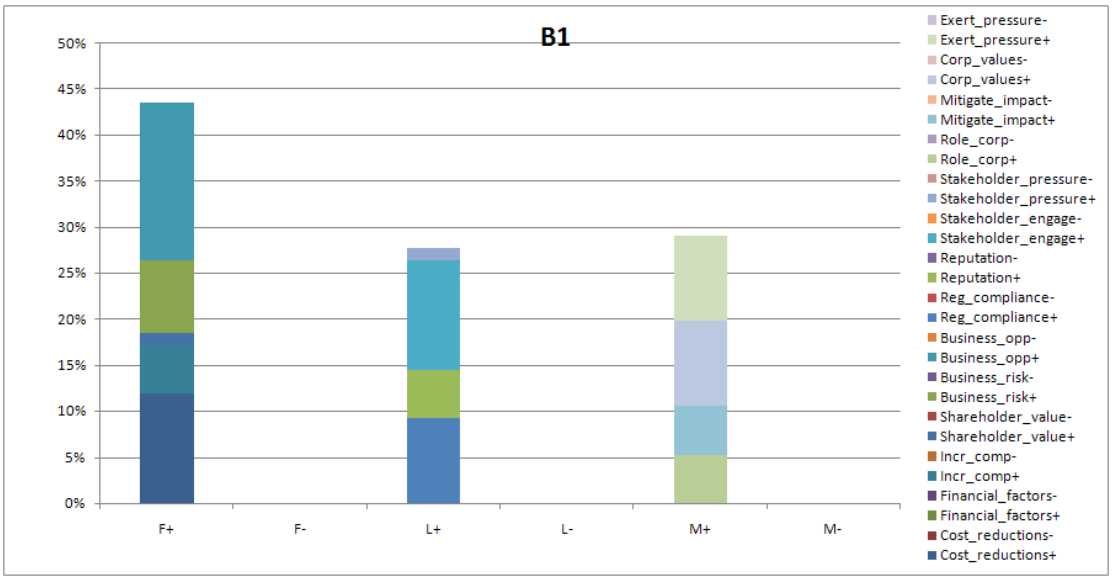
Corporate values and the company's role in respect of social and environmental responsibility were the key sub-drivers identified within the moral responsibility category. Issues highlighted included a very high level of top management commitment to environmental issues, the adoption of long term views in respect of environmental and climate change related projects and a general culture of environmental awareness and responsibility within the organisation. As one respondent mentioned the company is focused on "Being a leader as a corporate citizen. Actually walking the talk."

3.8.3.2 Review of supporting documents

The financial business case dominated the responses to the CDP, with over 40% of codes allocated to this category, compared to less than 30% for legitimacy and moral responsibility. The difference between the financial business case and the other two categories was statistically significant.

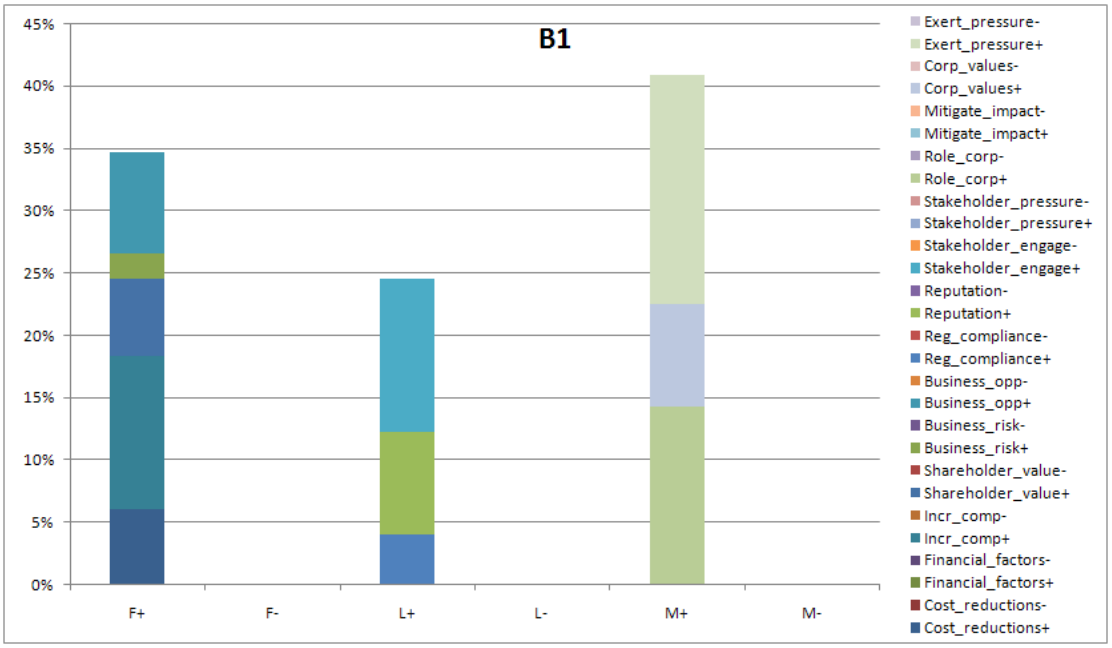
The issues highlighted in the interview with regard to the financial business case were again repeated in the CDP responses in terms of cost reductions and savings and managing business risk. However, where the interview highlighted issues surrounding increasing competitiveness, the focus of the CDP appeared to be on the many business opportunities which the company was exploring in light of the impact of climate change both internally and on its customers.

Graph 5.17 Frequency analysis of CDP coding: Company B1



The key sub-driver of legitimacy issues was the focus on stakeholder engagement which was in line with what was observed in the interview analysis. From a moral responsibility perspective, corporate values were once again seen as a key sub-driver, however exerting pressure on stakeholders took a more prominent position than was observed in the interview analysis.

Graph 5.18 Frequency analysis of annual report coding: Company B1



The annual and sustainability report revealed a focus on moral responsibility issues which exceeded mentions of financial business case issues by 5% and legitimacy

issues by more than 15%, with the latter found to be a statistically significant difference.

Within the moral responsibility framework exerting pressure on stakeholders featured as the most prominent sub-driver followed by the role of the company in terms of social and environmental responsibility and issues related to corporate values. These three issues featured in both the interview and CDP analysis although the emphasis was slightly different. However, the area of mitigating impact, which was mentioned in both the interview and the CDP did not feature in the annual and sustainability report.

Increasing competitiveness was a key sub-driver of the financial business case which is in line with what was observed in the interview, while another key theme continued to be cost reductions and savings. A further sub-driver was the identification of business opportunities, which was not highlighted in the interview, but featured in the CDP.

The dominant legitimacy sub-driver was stakeholder engagement mirroring what was highlighted in both the interview and CDP. Reputational issues featured more prominently in the annual and sustainability reports than it had in the interview and CDP analysis.

3.8.4 Impact on company value

The respondents were of the view that the company's climate change strategy would have a positive impact on the bottom line as a result of cost savings and competitive differentiation which would attract clients as environmental awareness grew. In addition, they were of the view that the impact on the company value would be positive as a result of goodwill and reputational issues. The respondents highlighted that the company's environmental credentials had assisted it in procuring funding from new capital sources.

The respondents were of the opinion that criteria used to evaluate potential projects would focus on the triple bottom line and not just financial impact. The criteria used to gauge the success of an investment in a climate change initiative would include issues such as cost savings, as well as stakeholder feedback.

Assessment criteria for evaluating future financial implications and risks are still under development. The company does not yet factor climate change issues in making

investment decisions, but is of the opinion that it will be more conscious of this in the future as a result of the introduction of reduction targets.

The company's annual report does not contain detail of environmental and climate change mitigation expenditure, investment or revenues other than in respect of corporate social investment spend for environmental initiatives which amounted to less than 0.2% of headline earnings. The company discloses environmental performance information regarding waste, recycling, energy and water consumption.

3.8.5 Conclusion

The company considers itself to be a leader in respect of environmental and climate change mitigation. Environmental issues feature at a strategic level within the company and the company puts great store in its environmental credentials.

The company appears to be taking a proactive approach to environmental issues and climate change in particular. The chance to play a leadership role and the brand positioning and competitive differentiation that this facilitates appears as an underlying theme in much of what is analysed.

Corporate values which support environmental initiatives are central to the strategy of this company and a high level of top management commitment to environmental issues appears to bolster the case for undertaking various initiatives. In terms of tangible actions taken however, the focus switches to the financial business case through energy efficiency initiatives and a focus on developing new business opportunities through the provision of new products to clients.

3.9 Case study: Company B2

3.9.1 Introduction

The company does not disclose information regarding the person responsible for environmental and sustainability issues on their website. Several phone calls were required to a number of business areas before the relevant person was located. However, although willing to meet to discuss the company's response to climate change, the respondent required a copy of the interview transcript in order to allow the respondent's manager the opportunity to review what had been said in the interview. The review of the transcript took six weeks as a result of management and structural changes within the respondent's area. When the transcript was eventually

returned numerous changes had been made to the responses provided by the respondent in the interview setting. In order to facilitate a comparison of changes made by management, both interview transcripts were analysed, while some changes resulted from additional information being furnished which the respondent had not been aware of, several changes were made to statements made by the respondent which resulted in differing motivations emerging from the updated transcript, further detail regarding this comparison is contained below.

3.9.2 General response to climate change

The company views climate change as a reality and a risk which faces the business. The company intends to adopt a fast follower approach to climate change mitigation efforts and does not consider itself a leader in climate change mitigation in its sector. At present the focus is on understanding where climate change might impact the company and how they will mitigate potential impacts. The company considers itself a low impact company from the perspective of direct climate change impact, however there is an awareness of potential to influence and be influenced by indirect impacts in their operating environment. The company believes that emissions caps will be introduced in the next few years.

Climate change has featured at a strategic planning level only in so far as it forms part of the monthly information pack which the CEO reviews. However numerous initiatives have been undertaken at an operational planning level the main focus of which has been on driving energy efficiency. The company believes that climate change will fundamentally impact its business model and to this end has launched a project to manage customer risk profiles.

The company is in the process of developing a climate change strategy which forms part of the overall environmental strategy. Baseline data for energy and water consumption are being sourced, however there have been delays in getting this information. Once the information is available, the company will be in a position to set targets. There would appear to be pressure from the majority shareholder in terms of adopting climate change targets with a view to eventual carbon neutrality at a Group level.

The company would consider buying offsets, especially given the need to assist with Group carbon neutral targets. However they would use a combination of internal

mitigation actions and offsets. Important considerations in an offset project would be price, project and the reputation of the provider.

3.9.3 Company motivations

The following tables highlight the coding frequencies observed in the various documents analysed and the statistical significance of differences between observed frequencies across the coding categories. These summaries are discussed in more detail in the sub-sections which follow.

Table 5.11 Summary of coding frequencies

Company B2	**Financial**		**Legitimacy**		**Moral Responsibility**	
	F+	**F-**	**L+**	**L-**	**M+**	**M-**
Interview version 1	33%	6%	29%	6%	15%	10%
Interview version 2	33%	7%	22%	6%	24%	7%
CDP	46%	0%	35%	12%	4%	4%
AR & SR	38%	0%	32%	0%	29%	2%

Table 5.12 Summary of statistical significance of differences (90% confidence)

Company B2	**F+ L+**	**F- L-**	**F+ M+**	**F- M-**	**L+ M+**	**L- M-**	**F+ F-**	**L+ L-**	**M+ M-**
Interview version 1	No	No	**Yes**	No	**Yes**	No	**Yes**	**Yes**	No
Interview version 2	No	No	No	No	No	No	**Yes**	**Yes**	**Yes**
CDP	No	**Yes**	**Yes**	No	**Yes**	No	**Yes**	**Yes**	No
AR & SR	No	No	No	No	No	No	**Yes**	**Yes**	**Yes**

3.9.3.1 Interview

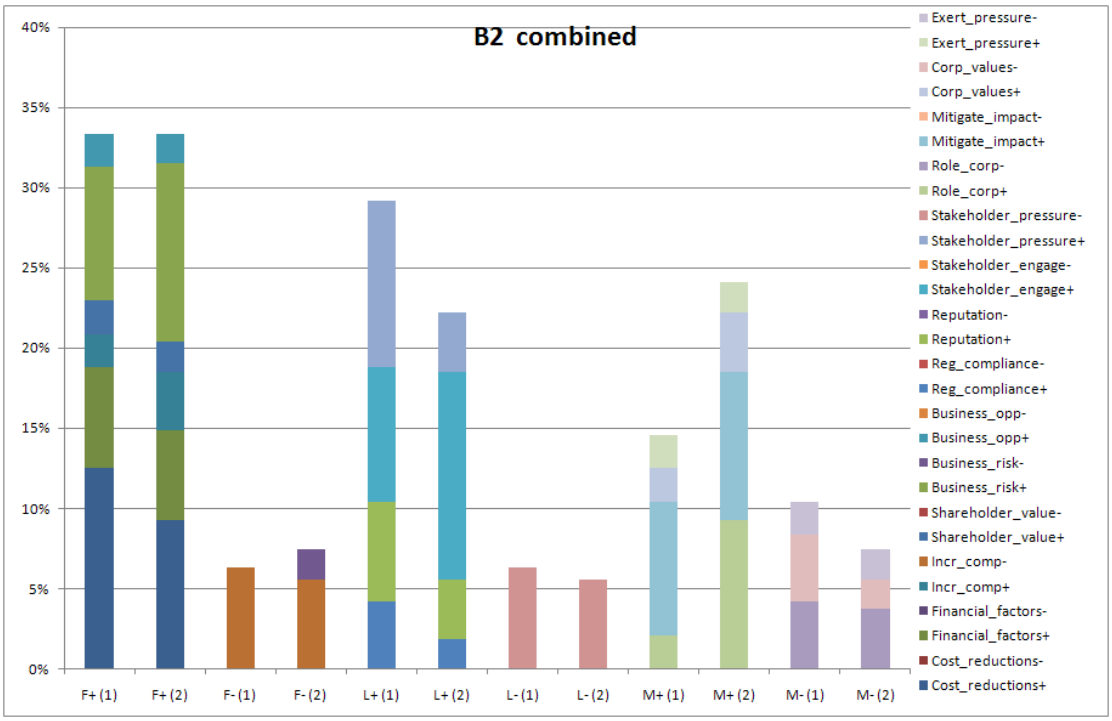
As previously highlighted, the response to this interview was analysed twice, first based on the responses provided by the respondent during the interview and second based on the transcript as altered by the respondent's manager. Graph 5.19 depicts both analyses.

Both versions of the interview transcripts highlighted aspects of support for and lack of support for the three categories of drivers. In most instances however the support for the particular category outweighed the lack of support, with the difference considered to be statistically significant, however, in the first version of the interview

transcript, the difference between support for and lack of support for the moral responsibility category was not statistically significant.

In both versions of the transcript, the financial business case was seen as the dominant motivational driver. However, the ranking of the moral responsibility and legitimacy categories changed from the first to the second version of the transcript. Initially legitimacy ranked above moral responsibility (and the difference between moral responsibility and the financial business case was statistically significant). In the second version of the transcript, moral responsibility marginally exceeded legitimacy issues, with no statistical significant differences between any of the categories.

Graph 5.19 Frequency analysis of interview coding: Company B2



From the perspective of the financial business case, the key sub-drivers were cost reductions and savings, and managing business risk, in the second version of the transcript, the focus on managing business risk received greater emphasis than in the first version and various projects linked to managing business risk and customer risk profiles were highlighted. There was little evidence that the company was motivated by issues related to increasing competitiveness or positioning their brand, and in both versions of the interview transcripts statements contradicting this motivational driver were recorded such as the respondent noting that: “The major objective is not necessarily to get a lot of marketing out of it.”

In terms of the key sub-drivers within the legitimacy category, the first version of the interview transcript emphasised issues relating to stakeholder pressure, stakeholder engagement and reputation. From a stakeholder pressure perspective, there were numerous references to adhering to the requirements of the majority shareholder in terms of environmental and climate change initiatives. The respondent noted this as one of the factors driving the change in the company's relationship with issues relating to the natural environment highlighting that the company "is forced to pick up whatever they *(the majority shareholder)* are doing as well". The second version of the transcript removed most references to the pressure from the majority shareholder, and the key sub-driver coded for legitimacy in this updated version was stakeholder engagement where initiatives linked to communication with stakeholders and engaging with the community were highlighted.

From a moral responsibility perspective, both versions of the transcript emphasised the mitigation of impact as a key sub-driver however the second version of the transcript focused on a number of issues which highlighted the company's role in terms of social and environmental responsibility. For example, the following statement was given in response to a question concerning the benefits that the company was hoping to derive from implementing a climate change strategy: "It allows *Company B2* to be a good corporate citizen - improving social, economic and environmental benefits for all".

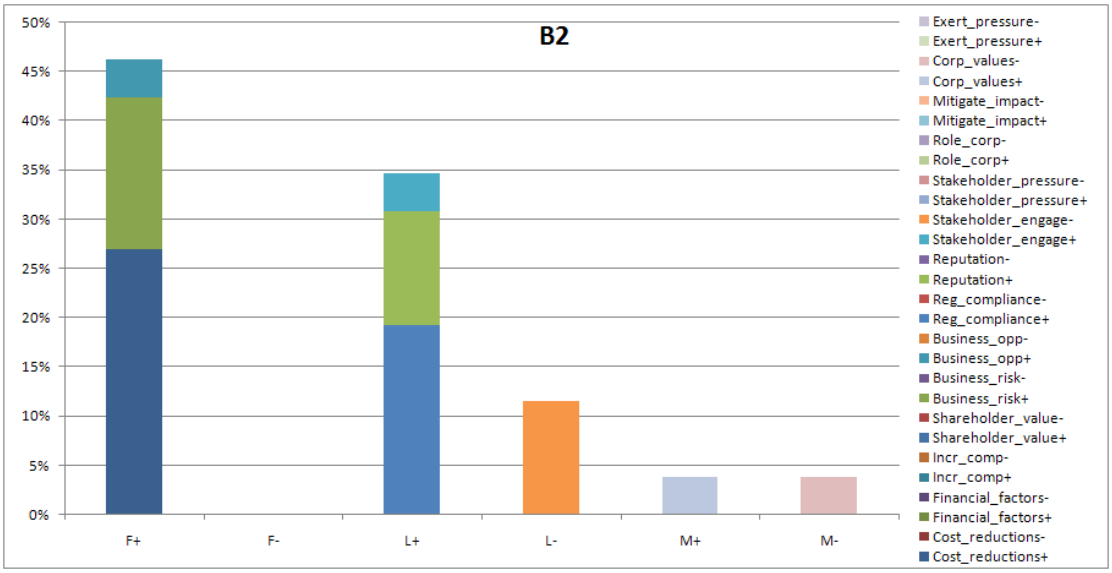
The change in emphasis regarding the legitimacy and moral responsibility categories from the first version of the interview transcript where shareholder pressure was highlighted to the second version where aspects of moral responsibility in respect of the company's responsibility to society and the environment came to the fore is an interesting development. The reasons for the changes made to the interview transcript were not provided by the respondent. There are a number of factors that could have driven the change ranging from the respondent's lack of knowledge of the drivers of action within the company, to the company wishing to project a positive image of its environmental credentials, rather than to be seen to be acting on environmental issues as a result of shareholder pressure.

3.9.3.2 Review of supporting documents

The analysis of the CDP document clearly emphasises the dominant driver of financial business case, followed by legitimacy, with very little evidence of moral responsibility issues. The difference between moral responsibility and both the financial business case and legitimacy is statistically significant. This ranking of drivers mirrors that which emerged from the first version of the interview transcript.

Key sub-drivers of the financial business case were cost reductions and savings and managing business risk which reinforced the issues highlighted in the interview. The legitimacy sub-drivers focused on regulatory and legal compliance in terms of anticipation of future regulation and reputational aspects focusing on managing environmental risks which contrasted with the focus on stakeholder engagement and stakeholder pressure which had featured in the interview.

Graph 5.20 Frequency analysis of CDP coding: Company B2

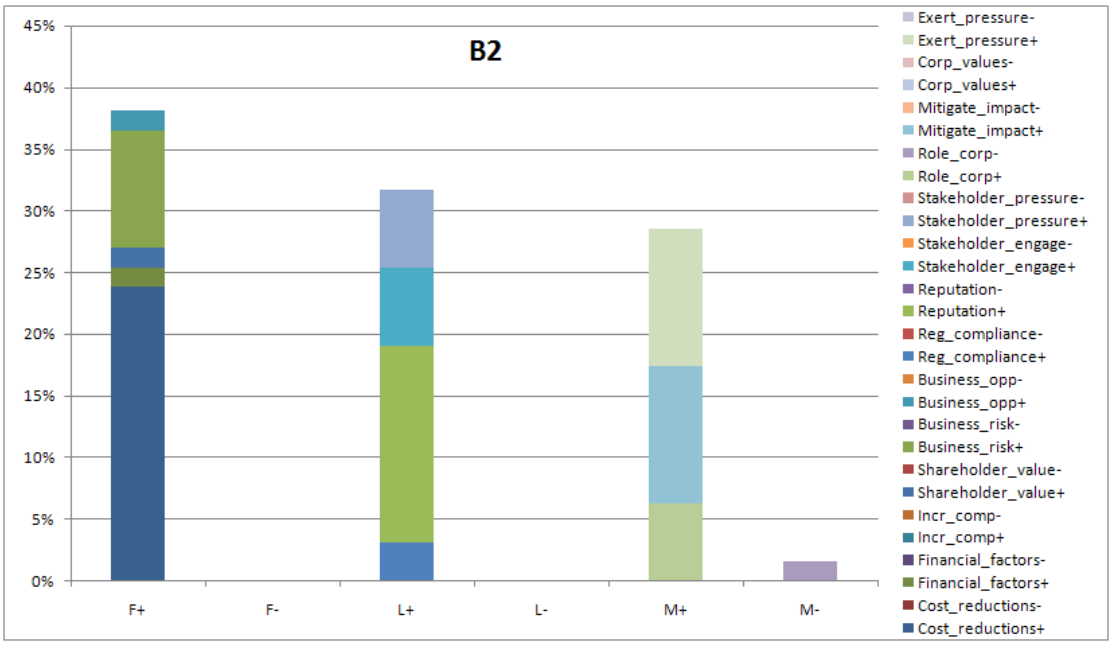


An analysis of the annual and sustainability report again emphasised the financial business case as the dominant driver. Once again the key sub-drivers were cost reductions and savings and managing business risk. Legitimacy concerns outweighed moral responsibility issues, with the key sub-driver being reputational in terms of managing environmental risks.

Moral responsibility sub-drivers focussed on the mitigation of impact which had also been highlighted in the interview. In addition the report contained a number of references to exerting pressure on stakeholders to be more environmentally

responsible which had not been a major focus in the interview. The emphasis on legitimacy and financial concerns above moral responsibility was further highlighted by the fact that the company had changed how some of its corporate social investment funds were channelled so that they could derive maximum benefit from the donation in terms of the relevant sector charter in place for this industry. In addition, the company noted that they had chosen to not switch to a more environmentally friendly alternative for a particular process as the alternative was too costly, and they would wait for relevant regulation to be in place before making this change.

Graph 5.21 Frequency analysis of annual report coding: Company B2



In general, the findings in the supporting documents would appear to support the view of the first version of the transcript, rather than the altered version.

3.9.4 Impact on company value

The respondent believed that the climate change initiatives adopted by the company would positively impact on the bottom line noting that: "It probably will have a positive impact, but I am not sure how significant the impact will be. Currently the cost savings from the power savings initiatives we have put in place is proving that it is worth it." From a company value perspective the respondent thought that the impact would probably be positive as the public became more aware of climate change issues, and the company could demonstrate that it was responding to these issues.

The company does not at this stage assess the current or future financial effects of climate change but will do so once the carbon footprinting process has occurred and base line data is in place. The respondent indicated that the company would make use of environmental, social and economic criteria when evaluating a climate change project. However the respondent was not sure how the company would measure if such initiative was a success.

The company does not appear to disclose information regarding the financial impact of climate change and environmental costs, cost savings or investments in its annual report other than corporate social investment where less than 0.02% of headline earnings were spent on environmental initiatives. The company provides some environmental performance information in its sustainability report in line with the Global Reporting Initiative, however the majority of performance indicators have not been quantified at this stage.

3.9.5 Conclusion

The company does not consider itself a leader in terms of environmental and climate change mitigation issues, and instead appears to focuses on social issues as a key component of its sustainability response. The view of the company would appear to be that climate change is a risk that needs to be managed to ensure business continuity. The financial business case dominates not only in the analysis of the interview transcripts, but also in the CDP and annual report coding. Pressure from a majority shareholder to conform to environmental standards is evident and supports the case for legitimacy being the second driver of action for this company as well as a focus on protecting the corporate reputation. Lastly moral responsibility concerns feature low on the list of what drives this company to take action. A number of instances of the business focussing first on financial aspects at the expense of environmental concerns have been highlighted above.

3.10 Comparison of company B1 and B2

3.10.1 General comparison

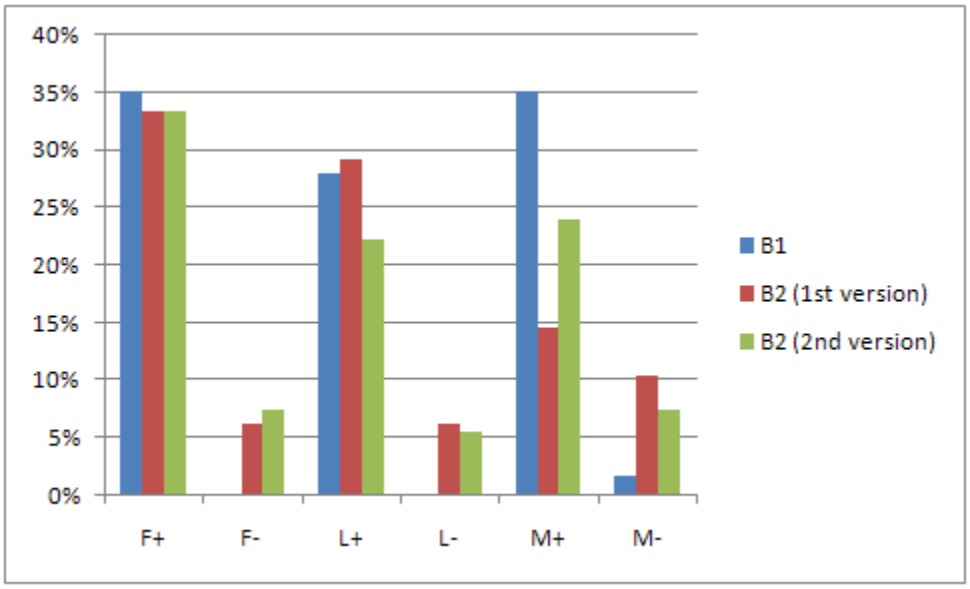
Company B1 already has a climate change strategy in place, whereas company B2 is in the process of finalising their strategy. Company B1 has a sustainability department which is responsible for climate change issues. Company B2 deals with climate change issues within an operational risk context.

3.10.2 Interview comparison

The comparison of company B1 and B2 is complicated by the fact that there are two versions of the interview transcript of company B2 (as discussed above).

The comparison between company B1 and the first draft of the interview transcript of company B2 revealed a statistically significant difference between the higher frequency of coding for moral responsibility issues for company B1 when compared to company B2. In addition, the relative ranking of the three categories of motivational factors differed between the two companies with the moral responsibility and financial business case for company B1 tying for first place, with legitimacy ranked last, whereas with company B2 the ranking order was financial business case followed by legitimacy with moral responsibility ranked last. However, the ranking of the three categories for company B2 changed when the altered version of the transcript was coded and in this instance, the financial business case still ranked first, however moral responsibility placed higher than legitimacy.

Graph 5.22 Comparison of key drivers company B1 and B2: Interview

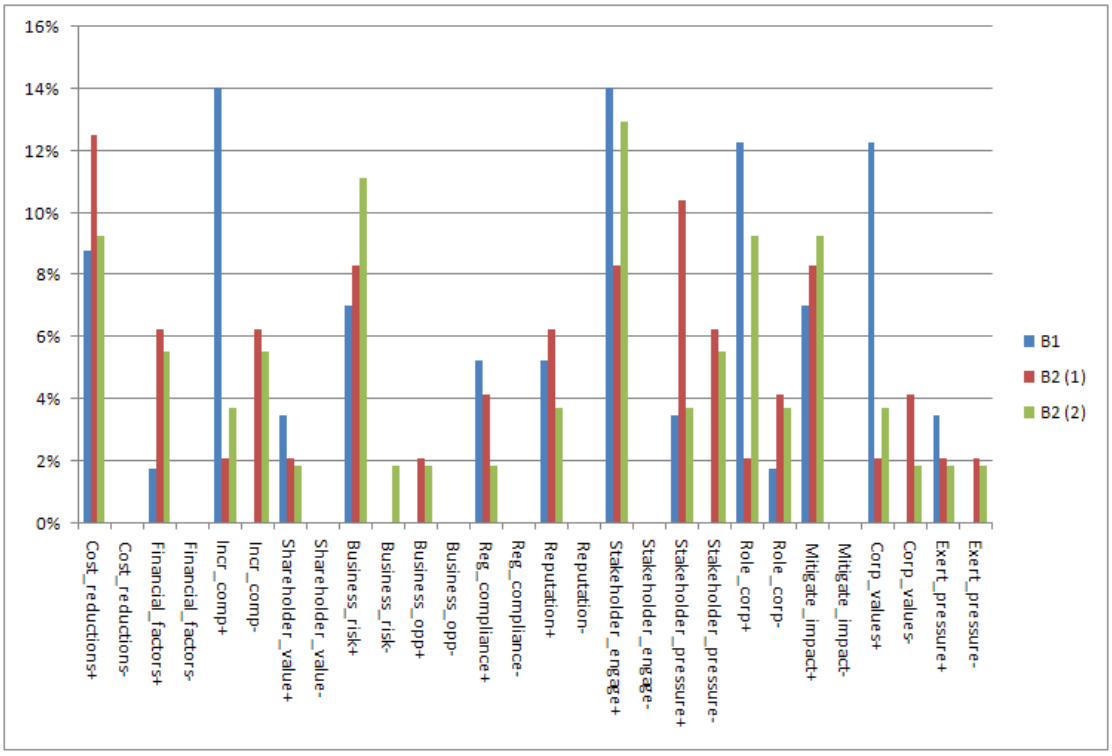


Given that the interview analysis for both companies rank the financial business case first, it is necessary to review the underlying sub-drivers to determine whether differences exist in the emphasis placed by each company on particular sub-drivers. Within the financial business case the evidence supporting increasing competitiveness as a sub-driver of action for company B1 exceeds the level supporting this sub-driver in the case of company B2 (both versions of the transcript), this difference is

statistically significantly. Strengthening the case for emphasising this difference is the coding of statements within the interview analysis of company B2 which indicate a lack of support for this particular sub-driver. Both companies placed emphasis on managing business risk, however the second version of the transcript placed a higher level of emphasis on this issue for company B2 than that displayed by company B1.

Within the legitimacy category, stakeholder engagement as a sub-driver for company B1 exceeded the level observed with company B2 in the first version of the interview transcript, however this difference became marginal when the second transcript was analysed. Stakeholder pressure for company B2 exceeded company B1's level when the first transcript was considered, however once again, when the second version of the transcript is considered, the difference is only marginal.

Graph 5.23 Comparison of sub-drivers B1 and B2: Interview

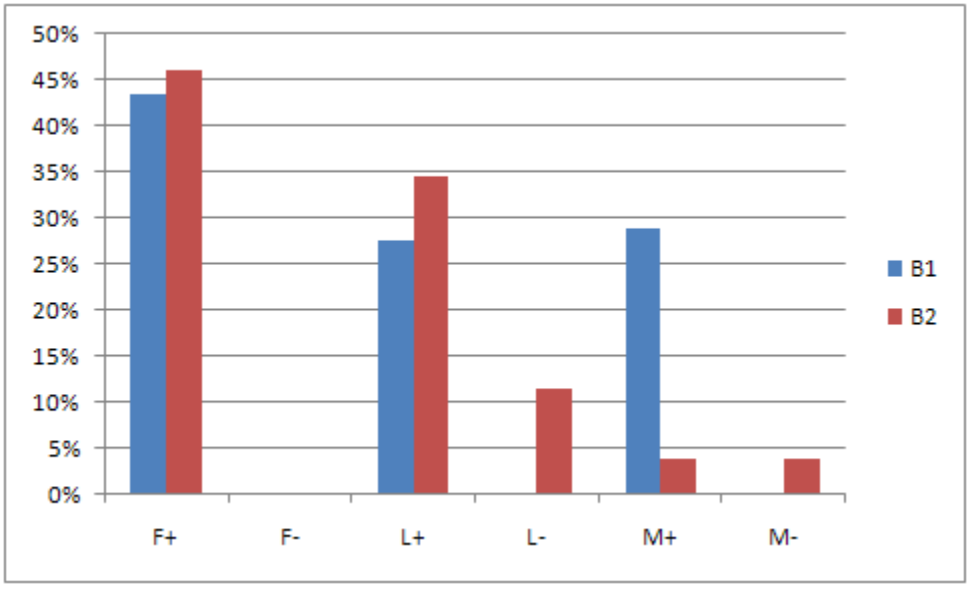


From a moral responsibility perspective, the emphasis company B1 placed on corporate values as a sub-driver exceeded that which company B2 placed on the issue with this difference being statistically significant when measured against both versions of company B2's transcripts. The other difference identified between moral responsibility sub-drivers focused on the role of the company with respect to social and environmental responsibility where company B1 had a higher frequency of occurrences of coding for this sub-driver compared to that of company B2, however

this difference was only statistically significant in the comparison with the first version of the transcript, and not the second. However, it should be noted that the analysis of the interview transcript for company B2 (both versions) showed instances of statements which indicated a lack of support for this particular sub-driver which would appear to support the observation that company B1 places a greater emphasis on this sub-driver than company B2.

3.10.3 Comparison of supporting documents:

Graph 5.24 Comparison of key drivers company B1 and B2: CDP

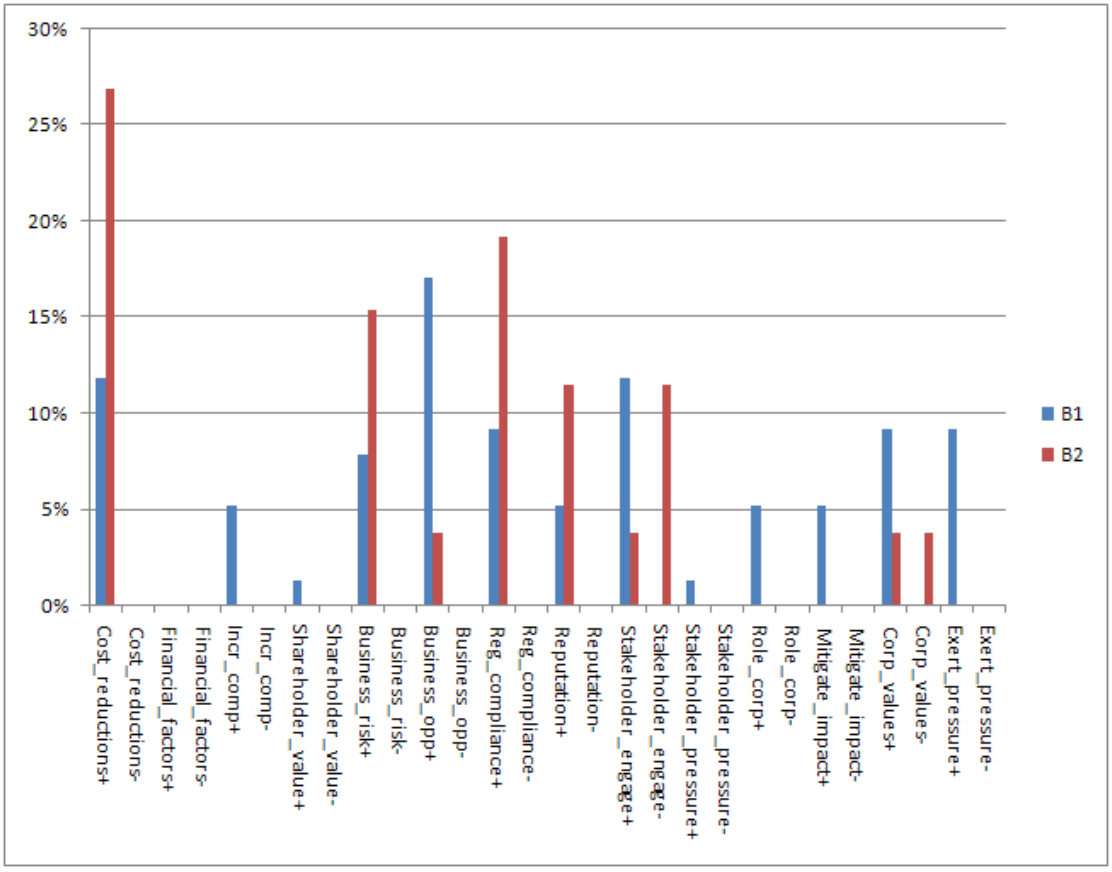


For the CDP, the financial business case category ranked first for both companies, however, while legitimacy and moral responsibility ranked joint second for company B1, company B2 had legitimacy ranked second and moral responsibility third. One of the key differences observed between the analysis of the CDP response of company B1 and that of company B2 was the high level of frequency of codes in support of the moral responsibility category demonstrated by company B1 when compared to company B2 (this difference was statistically significant).

Although both companies ranked the financial business case first, the underlying drivers of this category were different. Company B1 emphasised increasing competitiveness and business opportunities, while company B2 placed the emphasis on cost reductions and savings (the differences between these sub-drivers was statistically significant in all cases).

When considering the legitimacy sub-drivers, there were no major differences between the two companies, other than the fact that company B2 exhibited a lack of support for stakeholder engagement which was not observed in the case of company B1 where a relatively high level of support for stakeholder engagement was exhibited.

Graph 5.25 Comparison of sub-drivers company B1 and B2: CDP



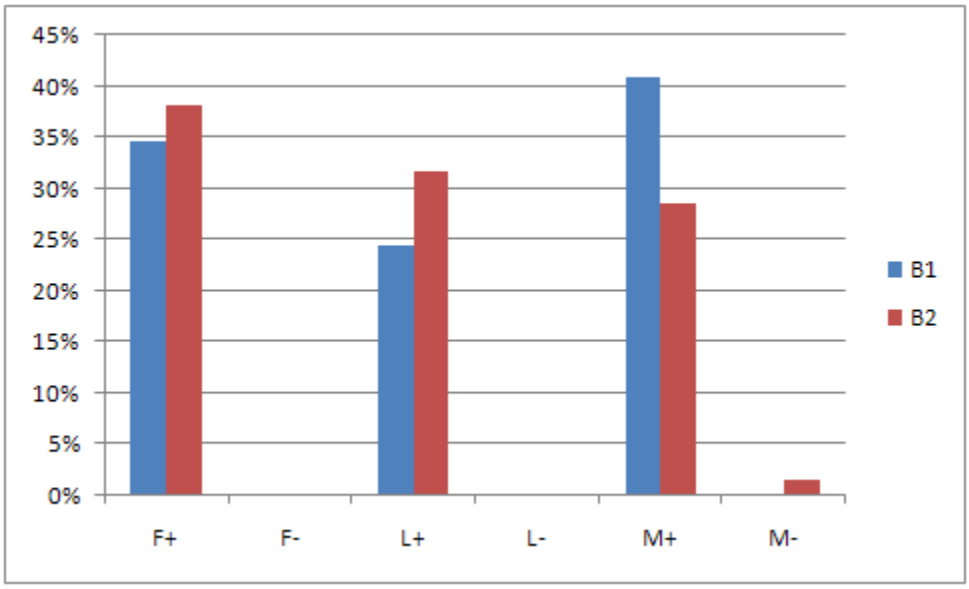
The ranking of categories in the annual and sustainability reports highlighted the different emphasis which each company placed on their environmental initiatives. Company B1 emphasised moral responsibility issues, which ranked last for company B2. Company B2 ranked the financial business case in first place whereas this featured as the second most important category from the perspective of company B1.

Within the financial business case the sub-drivers for company B1 focused on increasing competitiveness and business opportunities whereas company B2 highlighted cost reductions and managing business risk (all of these differences were considered to be statistically significant).

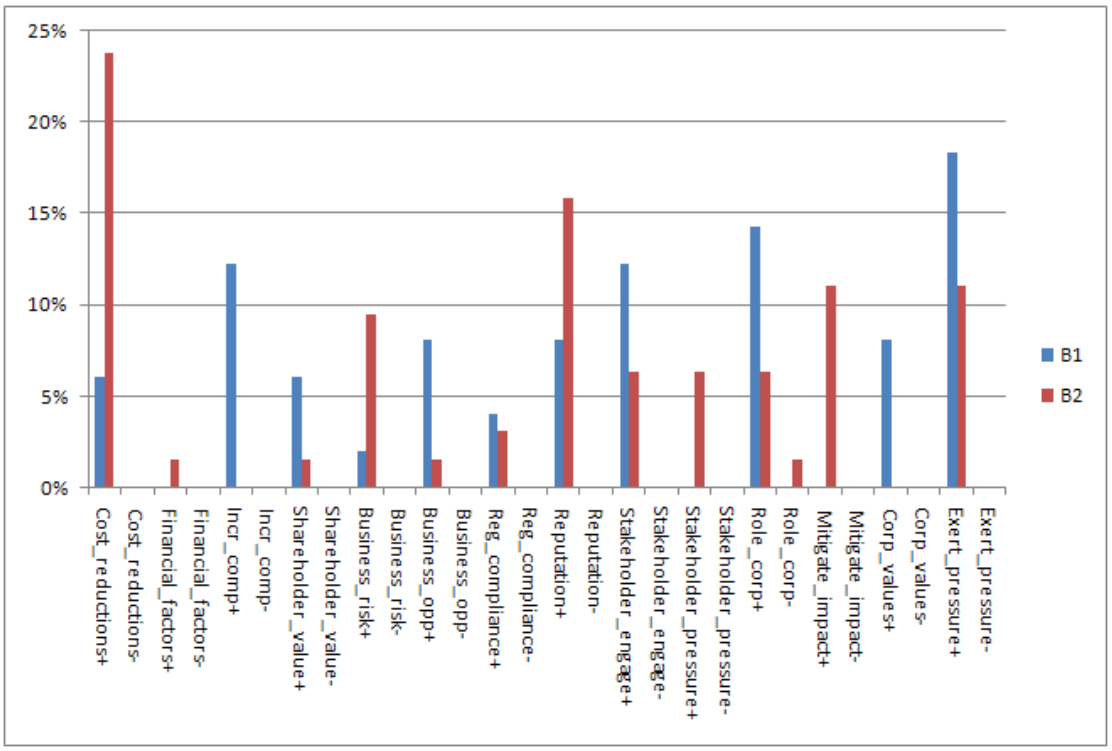
From the legitimacy category company B2 highlighted a greater degree of stakeholder pressure (statistically significant). Within the moral responsibility category company

B1 emphasised corporate values, while company B2 focused on mitigating its impact (both of these differences were considered statistically significant).

Graph 5.26 Comparison of key drivers company B1 and B2: Annual Report & Sustainability Report



Graph 5.27 Comparison of sub-drivers company B1 and B2: Annual Report & Sustainability Report



3.10.4 Conclusion:

Company B1 and B2 appear to have differing perspectives regarding environmental issues. Company B1 views taking action on environmental issues as something which gives the company a competitive advantage and climate change response is viewed in terms of the creation of business opportunities. Company B2 appears to view environmental issues as a risk which needs to be managed. This view is emphasised by the incorporation of environmental issues into the operational risk area of the company.

3.11 Case study: Company C1

3.11.1 Introduction

The information regarding the person to contact in respect of sustainability related queries was available on the company website. The individual, when contacted, was very accommodating and readily agreed to meet to discuss the company's views on climate change.

3.11.2 General response to climate change

The company believes that climate change is a threat. However the company considers climate change within the broader context of environmental management and focuses on numerous environmental challenges rather than just climate change. Climate change has featured at both a strategic and operational planning level and a carbon foot-printing process has taken place. An emission reduction program with targets has been put in place. The company does not consider itself as a leader in terms of climate change mitigation action in its sector.

The company is aware of both its direct and indirect impacts and has a current strategy which deals with mitigating direct impacts, and a longer term strategy in terms of which it will consider how it can exert its influence in terms of its broader indirect impacts. The key focus of its current strategy has been energy efficiency initiatives, however some work has been done on investigating alternative clean energy options. The company believes that its direct impacts are fairly minimal as a result of the sector in which it operates, however it acknowledges that it has an influence on indirect impacts.

The respondent is of the opinion that regulatory intervention is necessary for climate change, but also for numerous other environmental issues as voluntary initiatives are not sufficient. The respondent is of the view that emissions caps will be introduced in South Africa, however these will most probably impact the company indirectly rather than in a direct manner.

The company has given consideration to purchasing carbon offsets, however offsets would be used only after internal mitigation action had occurred. The key consideration regarding the offset purchase would be the nature of the project which the purchase finances.

3.11.3 Company motivations

The following tables highlight the coding frequencies observed in the various documents analysed and the statistical significance of differences between observed frequencies across the coding categories. These summaries are discussed in more detail in the sub-sections which follow.

Table 5.13 Summary of coding frequencies

Company C1	**Financial**		**Legitimacy**		**Moral Responsibility**	
	F+	**F-**	**L+**	**L-**	**M+**	**M-**
Interview	31%	10%	24%	10%	22%	4%
CDP	33%	0%	29%	5%	31%	2%
AR & SR	34%	0%	17%	0%	48%	0%

Table 5.14 Summary of statistical significance of differences (90% confidence)

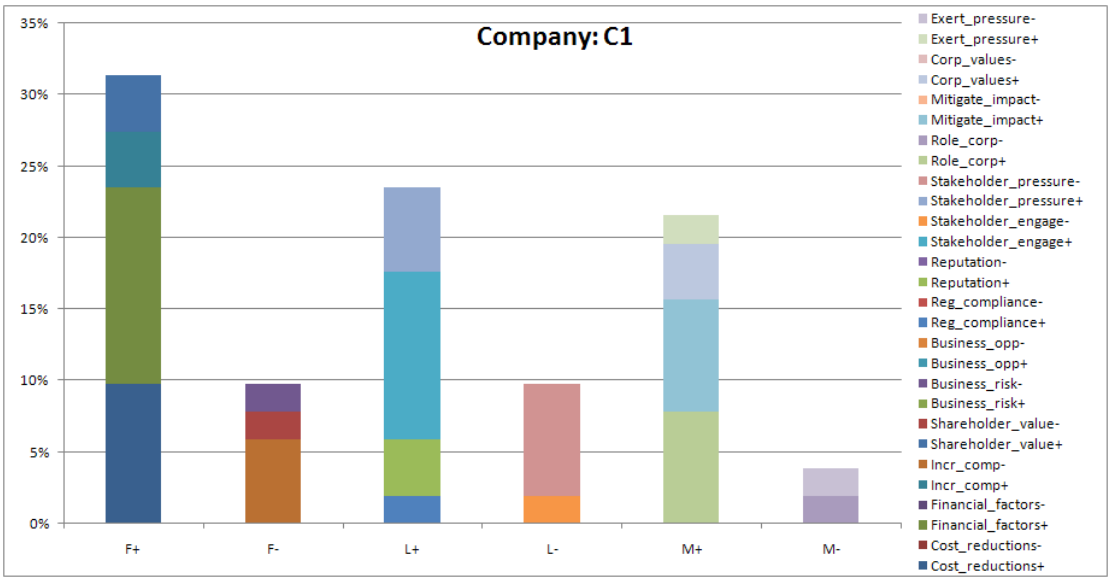
Company C1	**F+ L+**	**F- L-**	**F+ M+**	**F- M-**	**L+ M+**	**L- M-**	**F+ F-**	**L+ L-**	**M+ M-**
Interview	No	No	No	No	No	No	**Yes**	**Yes**	**Yes**
CDP	No	No	No	No	No	No	**Yes**	**Yes**	**Yes**
AR & SR	No	No	No	No	**Yes**	No	**Yes**	**Yes**	**Yes**

3.11.3.1 Interview

Aspects of both support and lack of support for the various categories were highlighted in the interview, however in all cases the statements which supported each category outweighed the factors which did not support the categories, and the difference was statistically significant. The financial business case appears to be the dominant motivational driver for company C1 however the amount by which it

exceeds legitimacy and moral responsibility is not considered to be statistically significant. Elements of legitimacy slightly outweigh the issues highlighted in the moral responsibility category however this difference appears to be offset by the number of statements which were made which did not support the legitimacy category.

Graph 5.28 Frequency analysis of interview coding: Company C1



The key sub-drivers of the financial business case are the consideration of financial factors in decision making processes concerned with climate change and environmental initiatives and cost reductions and savings. There is little evidence that the company is motivated by competitive positioning and in response to a question regarding whether the company believed that its strategy regarding climate change would give it a competitive advantage, the respondent was of the view that it would not, as consumers were not taking the issue seriously as yet.

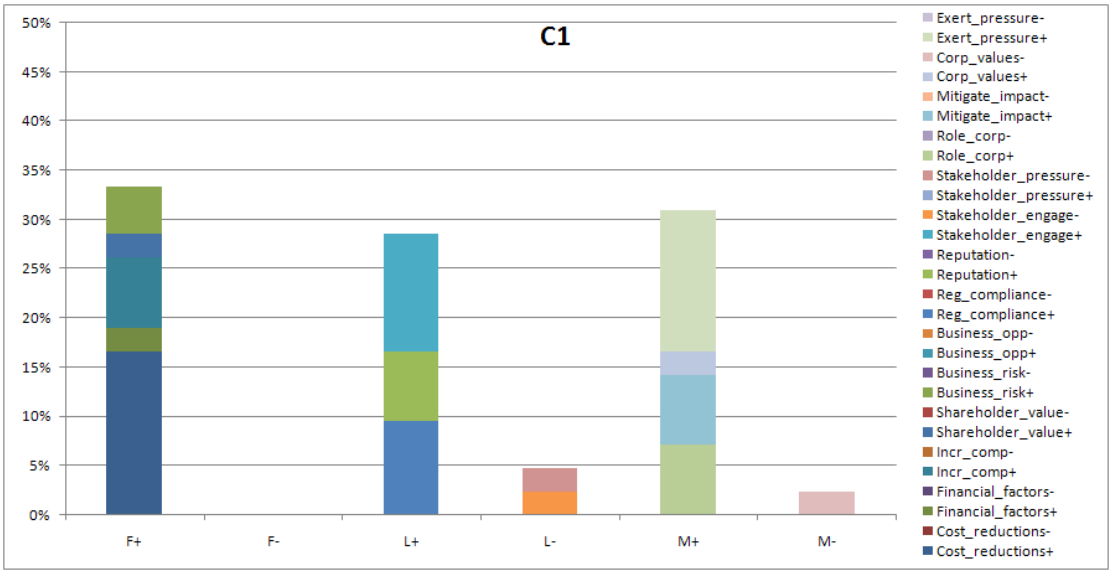
Stakeholder engagement was highlighted as a key sub-driver within the legitimacy category. The respondent when questioned regarding which stakeholders had the most influence in terms of their strategy pointed out: “the fact that our staff our more passionate than we thought they would be would probably prompt us, it’s a way of engaging them.” However from the perspective of stakeholders actually pressuring the company to take action on climate change, very little evidence appears to support this. The respondent noted that there was a lack of consumer and supplier pressure, however some evidence existed that the top end of the consumer market might

pressure for climate change action. International investors were also pressuring for disclosure of how the company was responding to climate change.

The key sub-drivers within the moral responsibility category were the role of the corporation in terms of social and environmental responsibility, aspects relating to mitigating impacts and some elements of corporate values. As part of its mitigation strategy, the company highlighted that it has committed to sourcing a percentage of its electricity from renewable sources over the next three years and is currently exploring various initiatives to help realise this target. From a corporate values and culture perspective there appears to be a high level of top management commitment.

3.11.3.2 Review of supporting documents

Graph 5.29 Frequency analysis of CDP coding: Company C1



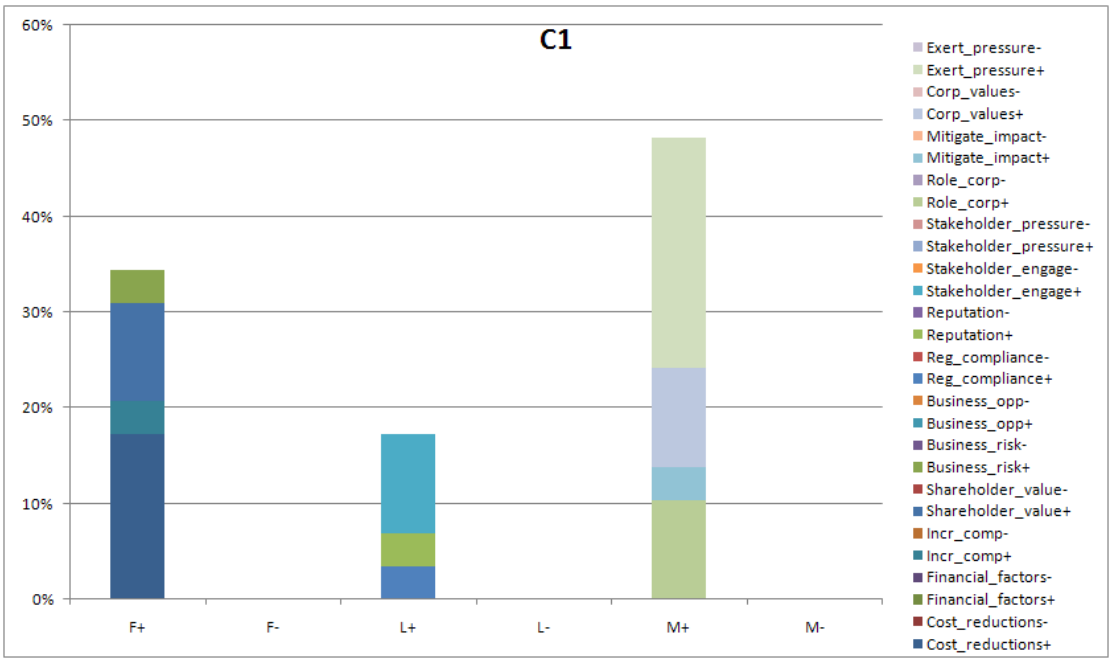
The CDP coding process revealed very little difference between the frequency with which financial business case motivational factors emerged relative to moral responsibility and legitimacy issues.

Key sub-drivers within the financial business case were cost reductions and savings and aspects related to increasing competitiveness and specifically brand positioning which were not highlighted in the interview process.

The legitimacy category again highlighted stakeholder engagement as a key sub-driver in keeping with what was observed in the interview process. Regulatory and legal compliance issues in respect of anticipation of legislation, which had not featured very strongly in the interview, were highlighted in the CDP document.

The main focus of the moral responsibility category was on exerting pressure on stakeholders through driving environmental awareness which had not received much emphasis in the interview process. The role of the corporation in terms of social and environmental responsibility and mitigation of impact also featured as important sub-drivers, which was in line with what was observed in the interview analysis.

Graph 5.30 Frequency analysis of annual report coding: Company C1



The moral responsibility category dominated the coding in the annual and sustainability report. The financial business case was seen as a secondary driver with legitimacy ranked last. The difference between the moral responsibility category and the legitimacy category was considered statistically significant.

The main sub-driver of moral responsibility in this analysis was exerting pressure on stakeholders, with a focus on the supply chain. Other sub-drivers were corporate values and culture and the role of the corporation in terms of social and environmental responsibility.

The financial business case was dominated by cost reductions and savings as well as impacts on shareholder value as a result of the focus on positioning the company as a socially responsible investment. The key sub-driver of legitimacy was stakeholder engagement which echoed the findings of both the interview and CDP analysis.

3.11.4 Impact on company value

The respondent was of the opinion that the impact of climate change initiatives on the bottom line was slightly positive. While energy savings could have some influence, the total electricity bill was a very small proportion (less than 0.5%) of overall business costs. However the respondent was of the opinion that the longer term benefits of being seen as a socially responsibly investment would lead to a greater impact on company value as it would prompt people to invest in the company.

Criteria for evaluating and measuring the impact of climate change initiatives would in all probability be focused on financial factors, however details were not provided of how this would be achieved or whether this had been addressed within the company. In addition, the company considers reputational issues associated with reducing its impact when evaluating climate change mitigation projects. The company has not formally measured the potential financial and business impacts of climate change.

The company does not disclose specific information regarding the costs, cost savings or investments related to environmental and climate change issues in its annual report other than disclosing environmental expenditure as part of corporate social investment totalling less than 0.1% of headline earnings. The company discloses some environmental indicators in terms of resource usage and carbon emissions in its sustainability report.

3.11.5 Conclusion

While the company has not positioned itself as a leader in climate change mitigation specifically, it does see itself as a leader in terms of corporate social responsibility, and aims to position itself as a socially responsible investment. The findings of the interview analysis focus on the financial business case, while the CDP analysis appears to indicate that motivations are not dominated by one category but instead emerge from all three motivational driver categories with little to differentiate between the emphasis placed on one issue versus another. When the annual and sustainability reports are analysed moral responsibility emerges as a dominant driver.

The various strategies that the company has put in place to deal with climate change, and the resultant actions taken, display a high level of understanding of both its direct and indirect impacts and emphasises the proactive nature of the stance taken by this company. Of particular interest is the company's commitment to investing in

renewable energy sources where specific renewable energy targets have been set with timeframes attached to meeting these targets.

3.12 Case study: Company C2

3.12.1 Introduction

The company website provided details of the person responsible at a head office level for corporate social responsibility (CSR) issues, however there was no specific person tasked with environmental and sustainability issues within the South African business. Numerous phone calls were required prior to finding a person who was willing to discuss the company's approach to climate change and sustainability issues, however this person was within the Investor Relations area of the business and was therefore not fully versed on all issues relating to climate change and what actions the company was taking. To fill in the knowledge gaps, a paper was prepared by the CSR head office function, however many of the elements addressed in this paper were repetition of issues found in the CDP questionnaire response and the company annual report and therefore this additional information paper was not coded as part of the interview response.

3.12.2 General response to climate change

The respondent was of the opinion that the company views climate change as something real that needs to be addressed. According to the respondent, the company did not consider itself a leader in climate change in its sector, and was rather adopting a wait and see approach and would react to specific stakeholder pressure. In particular, the respondent emphasised that the company needed to ensure that it carried out its fiduciary duty to its shareholders and was therefore constrained in terms of the actions it could take in mitigating climate change which might negatively impact the financial performance of the business.

The respondent did not believe that climate change had been addressed at a strategic level, however there were business level initiatives at an operational level which were being undertaken to address issues such as energy usage and travel reductions. However these initiatives were primarily focused on cost cutting, with environmental impacts seen as a secondary focus.

The company views itself as a low impact company from the perspective of climate change in relation to direct impacts. The respondent was of the opinion that the

business had areas which would be impacted by climate change in the near term, however, the bulk of the business would not be impacted in the foreseeable future and the respondent noted that: "there will be secondary impacts but no direct impacts because of climate change, certainly not in our life times".

The company has not publically commented on whether they believe emissions caps will be introduced in South Africa, and the respondent was not aware of any discussions in this regard. The company has an emissions reduction plan in place, but has not yet set specific targets. The respondent was not sure whether the company had considered buying carbon offsets and no evidence of this was found in the supporting documentation provided by the CSR function.

3.12.3 Company motivations

The following tables highlight the coding frequencies observed in the various documents analysed and the statistical significance of differences between observed frequencies across the coding categories. These summaries are discussed in more detail in the sub-sections which follow.

Table 5.15 Summary of coding frequencies

Company C2	**Financial**		**Legitimacy**		**Moral Responsibility**	
	F+	**F-**	**L+**	**L-**	**M+**	**M-**
Interview	24%	9%	15%	24%	15%	12%
CDP	47%	0%	16%	5%	26%	5%
AR & SR	17%	0%	33%	0%	50%	0%

Table 5.16 Summary of statistical significance of differences (90% confidence)

Company C2	**F+ L+**	**F- L-**	**F+ M+**	**F- M-**	**L+ M+**	**L- M-**	**F+ F-**	**L+ L-**	**M+ M-**
Interview	No	**Yes**	No	No	No	No	**Yes**	No	No
CDP	**Yes**	No	No	No	No	No	**Yes**	No	**Yes**
AR & SR	No	No	**Yes**	No	No	No	**Yes**	**Yes**	**Yes**

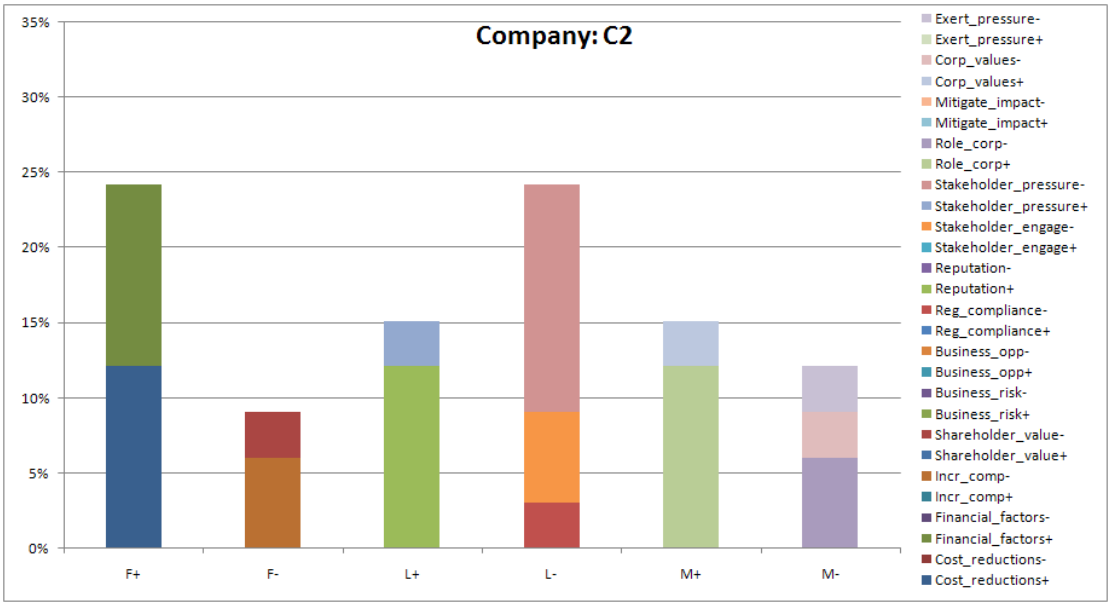
3.12.3.1 Interview

The interview analysis highlighted aspects which both supported each category and a number of issues which indicated a lack of support for particular categories. In this regard it is important to note that the only category where the difference between statements which supported the category and those which did not was statistically

significant was the financial business case. For the other two categories, there was a mixed response between statements which supported the category and those which did not, in particular, items which highlighted a lack of support for legitimacy as a motivational driver, exceeded statements which supported legitimacy.

The dominant driver which therefore emerged in the interview analysis was the financial business case, with legitimacy and moral responsibility issues appearing to have less of a role to play in motivations, particularly if one considers the frequency of statements which did not support legitimacy and moral responsibility.

Graph 5.31 Frequency analysis of interview coding: Company C2



The financial business case had only two sub-drivers cost reductions and savings and the influence of financial factors on decision making with statements such as the following regarding what criteria are applied regarding climate change investment decisions: "You have got to take that on a case by case basis, you know if it's a good investment, you know its all coming down to cost, especially in these markets"

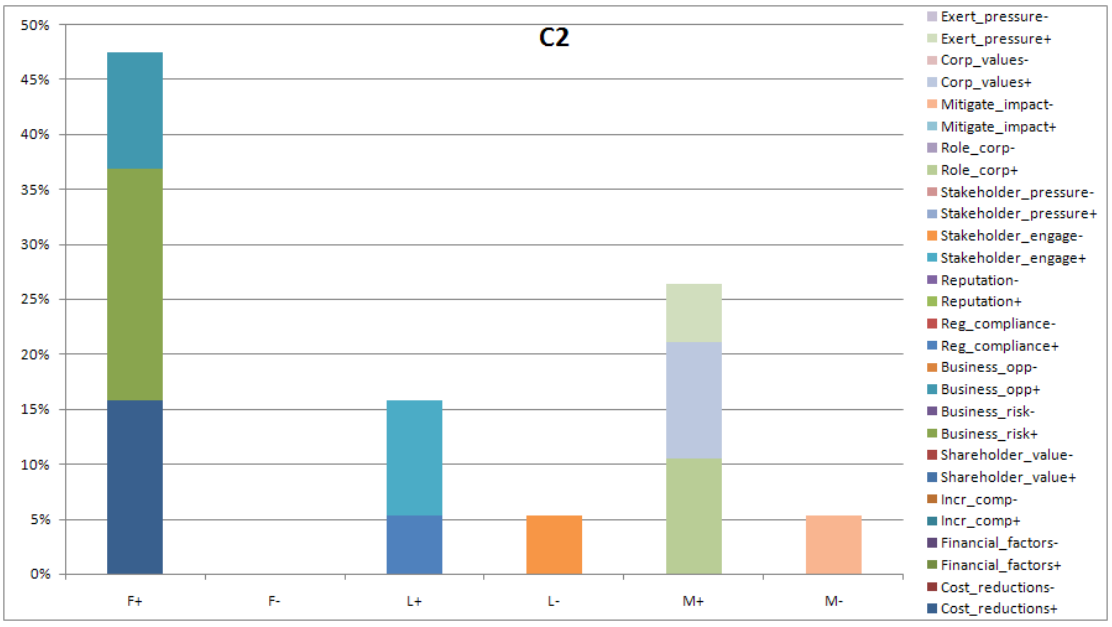
The main sub-driver within the legitimacy category was reputation whereas the key elements highlighted in terms of lack of support for the legitimacy category focused on low levels of stakeholder pressure and stakeholder engagement. The respondent was of the opinion that external awareness of actions the company was taking in respect of climate change were not currently seen as important and that climate change action from the company was "certainly not something that I think the stakeholders are pressuring for".

The moral responsibility sub-drivers focused on the role of the corporate in terms of social and environmental responsibility. However, there were some indications that moral responsibility was not a major driver of action within this company as a result of factors which highlighted a lower level of management commitment and a focus on fiduciary responsibility to shareholders from a financial perspective rather than on environmental responsibility.

3.12.3.2 Review of supporting documents

Company C2 is the South African subsidiary of a larger group of companies. As this study was focused on South African companies, and some of the supporting documents reviewed related to the group entity, the coding was only carried out in respect of issues relating specifically to the South African operation.

Graph 5.32 Frequency analysis of CDP coding: Company C2

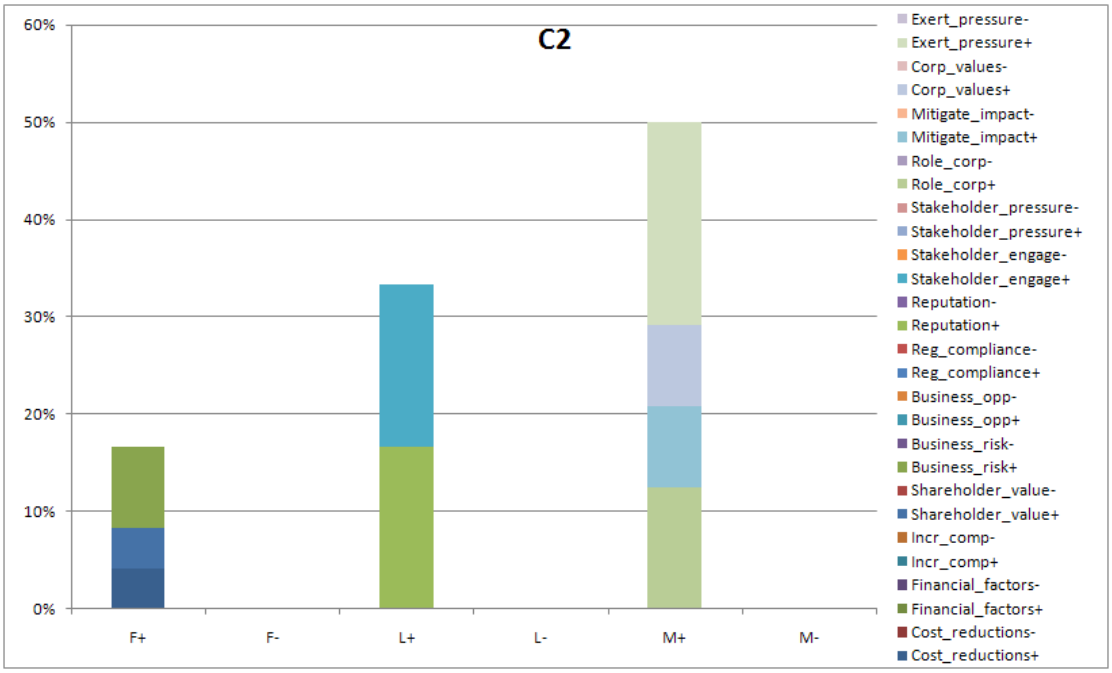


The financial business case clearly dominated the drivers identified in the responses to the CDP questionnaire, with a statistically significant difference between the financial business case and legitimacy factors. The main sub-driver of the financial business case appeared to be the focus on managing business risk which had not been highlighted in the interview process. The focus on cost reductions and savings supported what had been revealed in the interview analysis. Business opportunities related to climate change mitigation were identified in the CDP document, these had not been raised in the interview process.

From a legitimacy perspective, the focus was on regulatory and legal compliance, in anticipation of legislation. In addition stakeholder engagement emerged as a sub-driver, with a focus on communicating strategies with external parties. This contradicted the view expressed in the interview that external awareness of climate change actions was not important to the company at this stage.

The moral responsibility category highlighted sub-drivers such as corporate values and the role of the company with respect to social and environmental responsibility which had also been highlighted in the interview process.

Graph 5.33 Frequency analysis of annual report coding: Company C2



The emphasis in the annual and sustainability report was very different from that observed in the interview and CDP coding. The moral responsibility category was seen as the dominant driver with legitimacy ranked second, and the financial business case ranked as the least important motivational driver. The difference between moral responsibility and the financial business case was considered statistically significant.

The key sub-drivers within the moral responsibility category focused on exerting pressure on stakeholders with the main focus being on driving awareness of environmental issues particularly amongst staff. This theme had not been extensively highlighted in either the interview or the CDP analysis. Factors related to the company's role in terms of social and environmental responsibility were again highlighted, in keeping with the interview and CDP analysis.

From a legitimacy perspective, reputation, which had featured in the interview analysis, and stakeholder engagement, which had featured in the CDP analysis were highlighted as key sub-drivers. The main financial business case sub-driver was managing business risk which had also been emphasised in the CDP analysis but had not featured in the interview process.

3.12.4 Impact on company value

The respondent was of the opinion that any impact on the bottom line in the short term would probably be neutral. From a perceptions perspective, there might be positive spin-off from environmental responsibility and taking a leadership position, however the respondent felt that from a value perspective any impact would be directly as a result of cost cutting.

A cost focus would also appear to drive decision making in respect of climate change project investments and once again the company's fiduciary duties to its shareholders was highlighted as a key concern when it came to spending money on environmental initiatives. Financial and business implications of potential climate change impact appear to not have been factored into the business model. The company does not directly identify any financial implications of climate change mitigation costs or investments in its annual report, however they do publish sustainability measures in their sustainability report which reflects usage of electricity and water.

3.12.5 Conclusion

The company does not appear to be positioning itself as a leader in climate change mitigation action and while an emissions reduction plan has been formulated no targets have been set. There appears to be a lack of cohesive company wide strategies regarding environmental and climate change initiatives, and the company appears to favour a decentralised approach where specific business units are tasked with developing responses at a product and business unit level. The interview analysis indicated a focus on financial issues and implications as motivational drivers for action on environmental and climate change. This focus is mirrored in the CDP analysis while the annual and sustainability reports focus predominantly on moral responsibility drivers. At this stage, it appears that company action in respect of environmental and climate change mitigation is primarily focused on driving operational efficiencies.

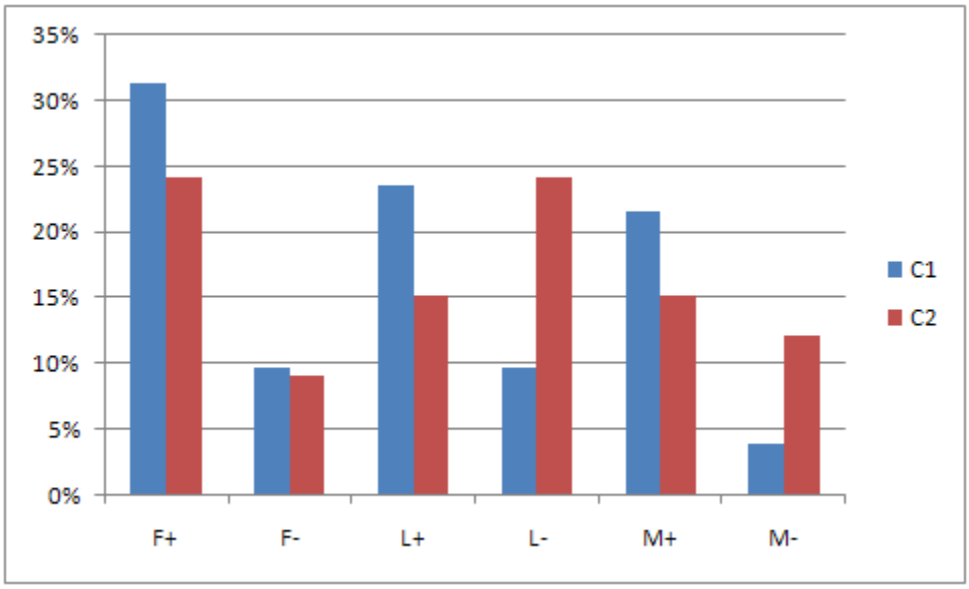
3.13 Comparison of company C1 and C2

3.13.1 General comparison

Both companies have climate change strategies in place. Company C1 appears to have a more focused approach to environmental and sustainability issues and has an area dealing specifically with sustainability issues while company C2, does not have a specific individual tasked with this responsibility in the South African business.

3.13.2 Interview comparison

Graph 5.34 Comparison of key drivers company C1 and C2: Interview

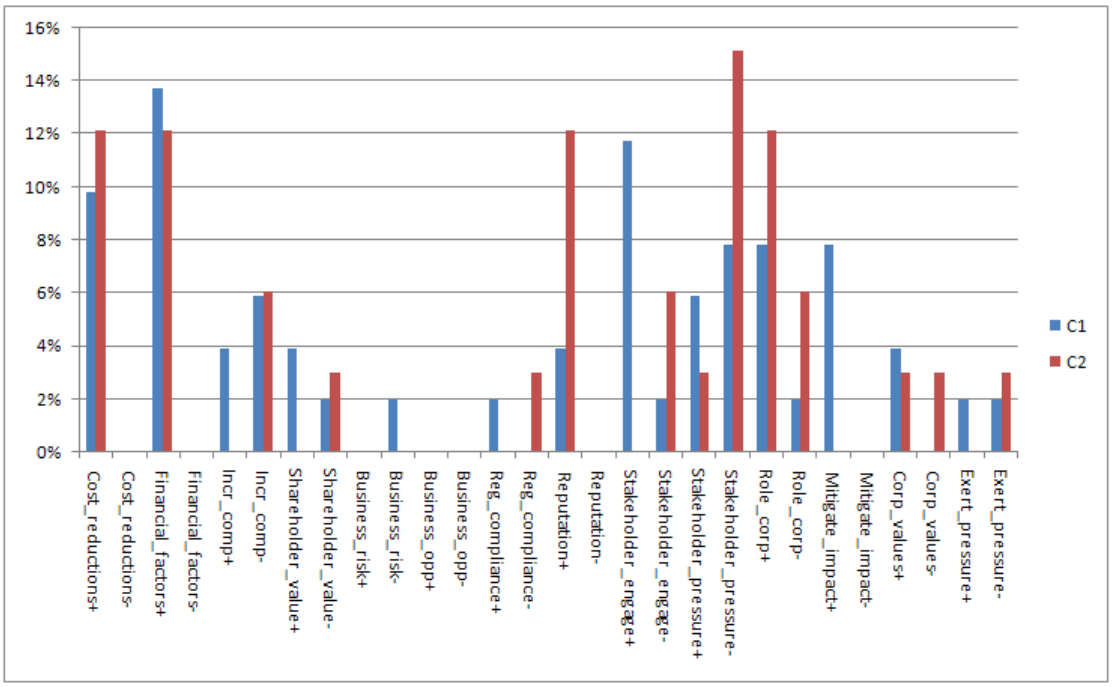


The motivational driver which appeared to dominate in both cases was the financial business case. From the perspective of company C1, support for both legitimacy and moral responsibility was evident, albeit at a lower level than support for the financial business case. However, in the case of company C2, there was little to distinguish support from lack of support for both moral responsibility and legitimacy, which appeared to indicate that these drivers were not the key focus of company action in respect of environmental and climate change action.

The profile of the sub-drivers within the financial business case were fairly similar demonstrating the focus on cost reductions and savings and consideration for the financial implications of climate change initiatives. Both companies showed evidence of a lack of support for increasing competitiveness or increasing shareholder value being motivational drivers of actions taken in this regard.

From a legitimacy perspective, the profile of the two companies in terms of sub-drivers differs in a number of respects. First company C1 focuses on stakeholder engagement whereas company C2 shows no evidence that stakeholder engagement is a sub-driver (the difference is statistically significant), added to this is the fact that company C2 highlights a number of issues which show a lack of support for both stakeholder engagement and stakeholder pressure as motivational drivers and rather focuses on reputational issues.

Graph 5.35 Comparison of sub-drivers company C1 and C2: Interview



The sub-drivers from a moral responsibility perspective have some elements of similarity however, company C1 emphasises the mitigation of impact while company C2 does not focus on this issue at all (the difference is statistically significant).

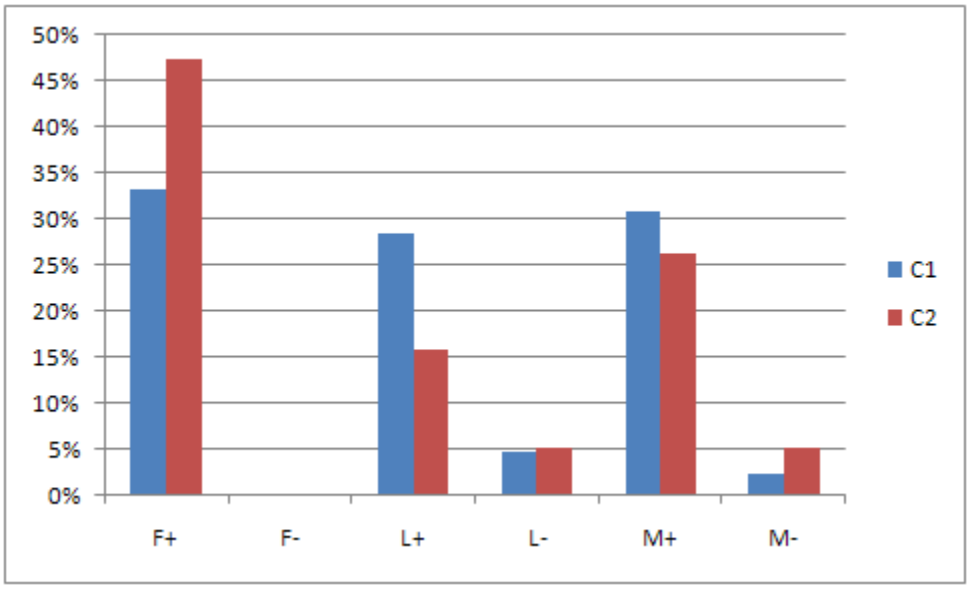
3.13.3 Supporting document comparison

The CDP analysis reveals consistent rankings between the two companies. Within the financial business case some difference are observes with company C1 focusing on increasing competitiveness while the focus of company C2 rests on managing business risk (both differences are statistically significant). In addition, company C2 emphasises business opportunities whereas company C1 does not highlight this issue.

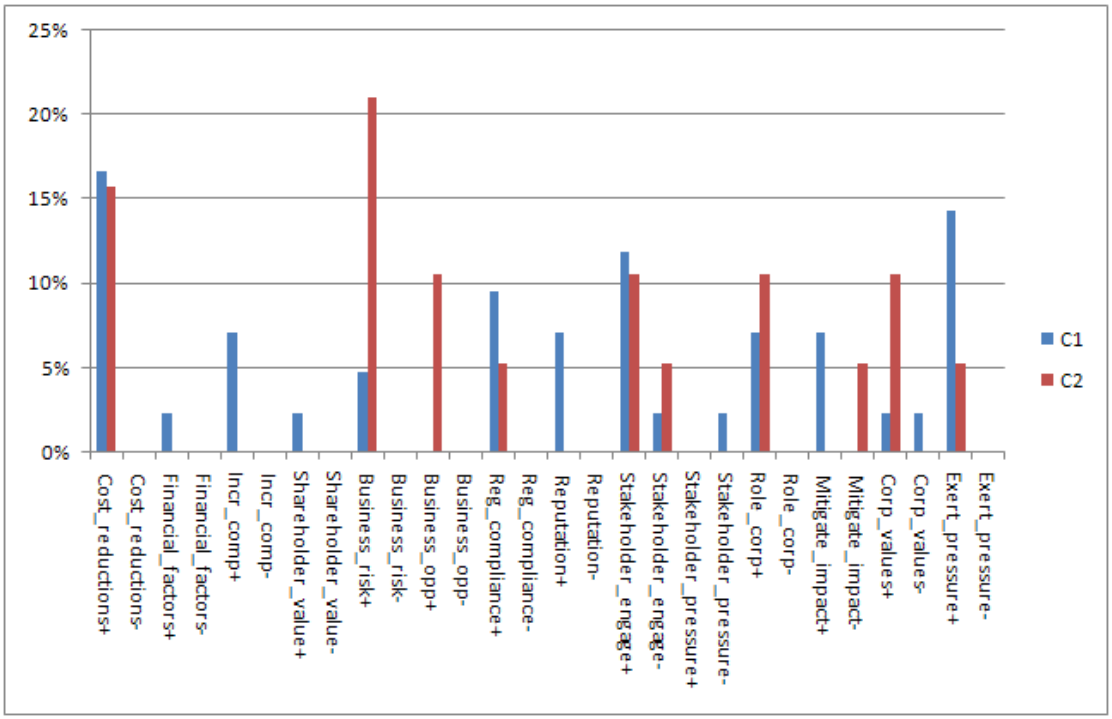
From a legitimacy perspective, both companies focus on stakeholder engagement and regulatory and legal compliance. From a moral responsibility perspective, similar sub-

drivers are identified, however company C1 highlights efforts to mitigate impact while company C2 does not address this issue (again the difference is statistically significant).

Graph 5.36 Comparison of key drivers company C1 and C2: CDP



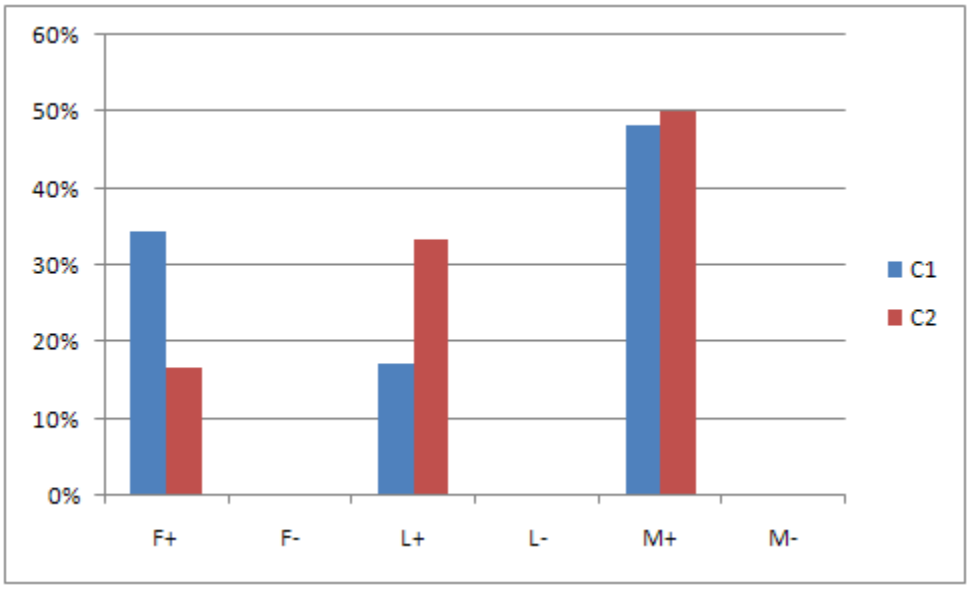
Graph 5.37 Comparison of sub-drivers company C1 and C2: CDP



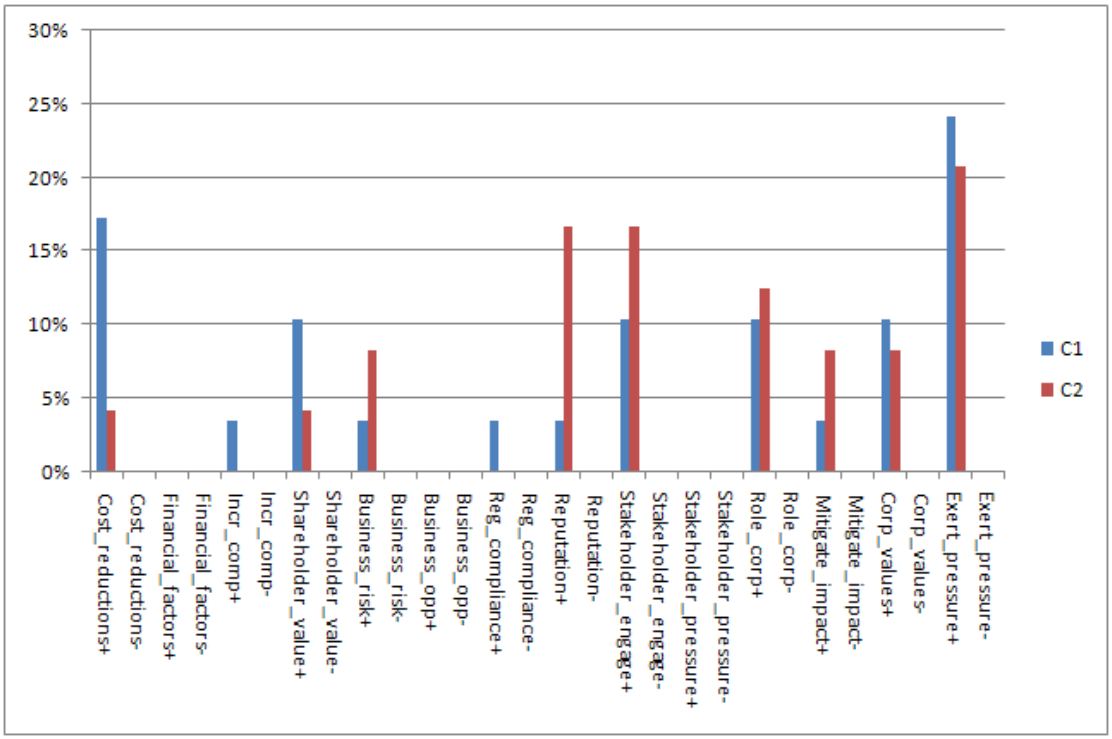
In the annual and sustainability report, both companies appear to focus on moral responsibility considerations. However the analysis of company C1 emphasises the financial business case over legitimacy issues whereas company C2 has the opposite

focus. The moral responsibility profile of sub-drivers is very similar for both companies in terms of the issues emphasised.

Graph 5.38 Comparison of key drivers company C1 and C2: Annual Report & Sustainability Report



Graph 5.39 Comparison of sub-drivers company C1 and C2: Annual Report & Sustainability Report



From a legitimacy perspective, company C2 focuses on reputation (the difference is statistically significant from C1) and stakeholder engagement. The key difference in

the financial business case is the emphasis placed by company C1 on cost reductions and savings which is not in evidence in the case of company C2 (the difference is statistically significant).

3.13.4 Conclusion

Company C1, while not considering itself a leader in climate change, appears to exhibit a more proactive stance than company C2 when it comes to environmental and climate change action having developed strategies to deal with both direct and indirect impacts and setting specific targets. While both companies appear to be driven by financial business case considerations, in the case of company C1 this is supplemented by additional motivations emerging from stakeholder engagement opportunities, and a focus on mitigating its impact with company C2 more focused on issues such as preserving its reputation.

4 Summarised findings in respect of the empirical study

The empirical study was designed to address three broad areas. First understanding the sustainability values of the companies being studied, second understanding factors which motivate company action in respect of climate change mitigation and whether these differ between companies and third, understanding the impact on company value of voluntary climate change action. The summary of the findings in respect of the empirical study therefore focus on the above-mentioned areas: sustainability values, motivational factors and impact on company value.

4.1 Sustainability values

Due to the fact that previous studies have highlighted the potential impact that the level of management commitment to environmental issues, and the worldview of the company can potentially have in terms of driving environmental action (Banerjee, 2002a; Byrch *et al.*, 2007) this study tested whether there were differences in respondent's perceptions concerning these two elements collectively referred to as sustainability values.

The study found that all respondents perceived their top management to be committed to environmental issues. In addition, all respondents were of the view that their company displayed less affinity with the traditional tenets of a technocentric worldview. The interviews revealed no statistically significant differences between the respondent's perceptions of management commitment to environmental issues

within each of the three industries. In addition, all respondents indicated that there was disagreement with the traditional technocentric view within their organisations. The only statistically significant difference in responses appeared in industry B, where the respondent for company B1 indicated a higher level of disagreement with technocentric views than did the respondent for company B2.

Therefore, in the context of this particular study, the level of top management commitment to environmental issues, and the worldview of the company did not differ fundamentally between the companies perceived to be more accountable from a sustainability perspective and those who appeared to be less accountable. While various factors might have an impact on this conclusion, such as the issue of social desirability bias discussed in section 2.3, this could potentially point to the fact that these two particular elements of sustainability values were not the key differentiating factors in determining what differentiates a company perceived to be responsible from a sustainability perspective from one perceived to be less responsible. Therefore the study considered the differences in factors motivating climate change action, and the particular action taken by companies to determine whether these factors would highlight differences between the companies.

4.2 Motivational drivers

The study tested whether the motivations for voluntary corporate action in respect of climate change fell into the three categories proposed by the conceptual framework, or whether the model needed to be adapted and extended for unique features of voluntary climate change actions or issues specific to the South African market. In addition, the study tested whether companies perceived to be more responsible or accountable from a sustainability perspective (company A1, B1 and C1) displayed differing motivations from companies considered to be less responsible or accountable (company A2, B2, and C2).

4.2.1 Completeness of conceptual framework

The 129 codes developed in the course of this study clustered into 14 sub-driver categories which in turn were ultimately linked to the 3 key driver categories. Therefore, this study found that all the motivational factors driving voluntary climate change action in the six South African companies reviewed can be categorised in

terms of the three key driver categories of the proposed conceptual framework, being legitimacy, financial business case and moral responsibility.

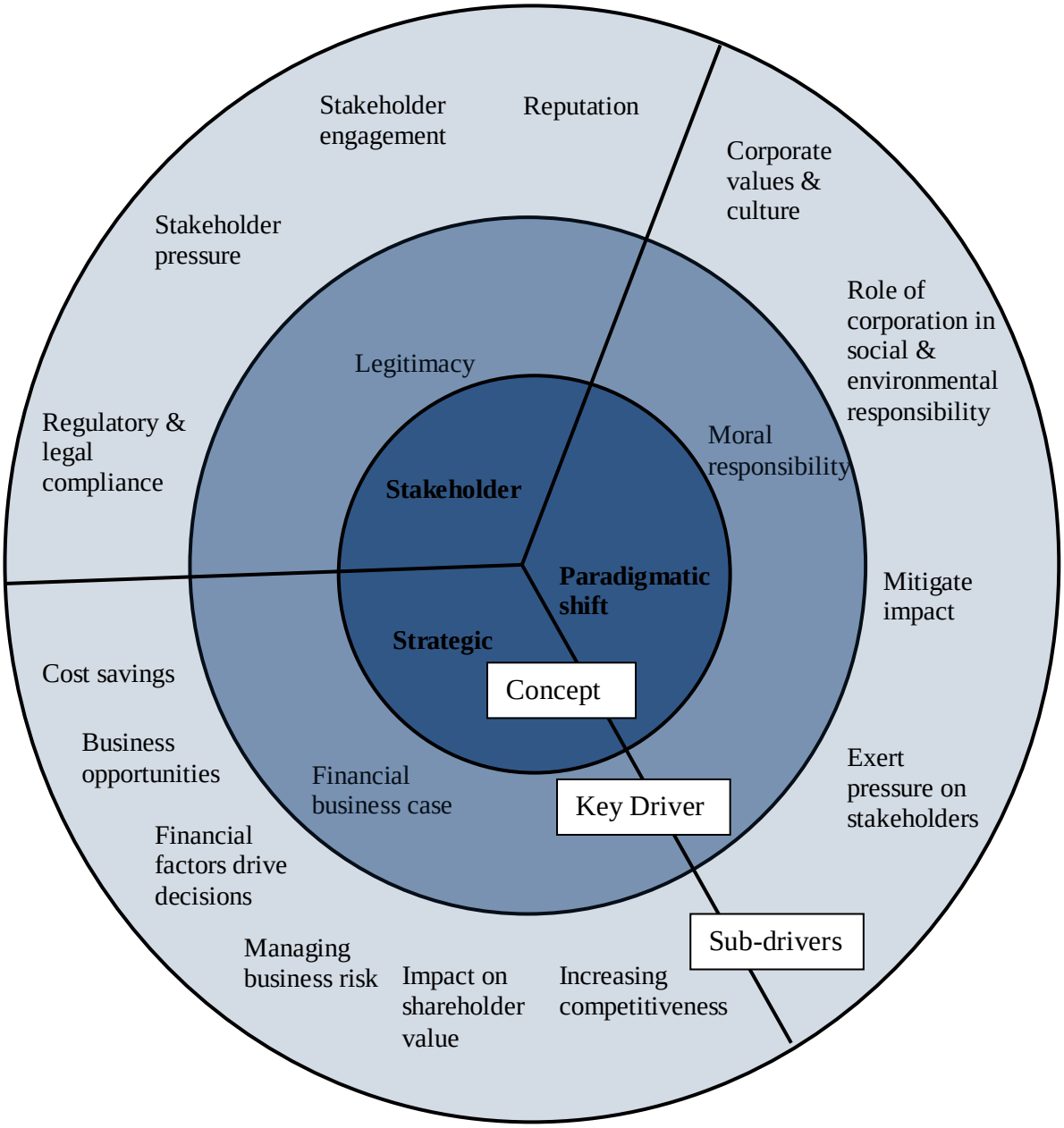
While there are indications that the financial business case plays an important role in motivating company action on climate change, moral responsibility, and to a lesser extent legitimacy, also feature as drivers of action. The lack of statistically significant differences between the motivational driver categories in a number of cases limits the ability to draw conclusions as to whether a particular category is considered dominant to the other categories for a particular company. The lack of statistically significant difference can either be attributed to the limited number of observations applicable to the interview process given the time constraints of each interview (most interviews were scheduled for one hour to accommodate the time pressures of the respondents). Alternatively, it could point to the fact that company action is not motivated by one particular driver, but rather by a combination of various drivers.

4.2.2 Revised conceptual framework

In light of the above findings, the conceptual framework outlined in chapter 3 is extended to provide for the particular sub-driver categories which were highlighted in the analysis of the case studies. The resultant framework is depicted in figure 5.2.

The empirical process followed in this study has enabled the transition from a conceptual model to a proposed scientific model which outlines the interaction between the company and the natural environment and highlights the key motivational drivers and sub-drivers.

Figure 5.2 Extended conceptual framework



4.2.3 Differences observed between companies

From the perspective of motivational drivers, the main difference observed between top ranked companies (A1, B1 and C1) and the lower ranked companies (A2, B2 and C2) was not necessarily observed at a key driver level, where the financial business case appeared important across all companies, rather the differences were observed in the particular strategies adopted by companies and the sub-drivers which highlighted the accompanying motivational drivers of these strategies.

All top ranked companies had adopted climate change strategies and had set targets for emission reductions. Two of the three companies (A1 and B1) stated the intention of taking a leadership role in climate change mitigation in their sector, where the third company, C1, while not adopting a leadership position in respect of climate change specifically, was focussed on positioning itself as a socially responsible investment with the required focus on environmental and climate change issues that such positioning requires. The top ranked companies displayed proactive strategies in terms of increasing competitiveness and resultant brand positioning (A1 and B1), and all proactively engaged with stakeholders. Two of the top ranked companies (A1 and C1) had a strong focus on mitigating their impact, while company B1 highlighted strong corporate values in support of environmental responsibility.

The lower ranked companies displayed varying levels of commitment to adopting climate change strategies, ranging from no strategy (in the case of A2) to a strategy that was under development (company B2) to a strategy in place but with no targets set for emissions reduction (company C2). The reactive nature of the response of these companies was further emphasised by little evidence of companies using climate change as an opportunity to increase competitiveness or engage with stakeholders. Instead concerns centred on protecting corporate reputation and in the case of company A2 and B2 reacting to stakeholder pressure.

Therefore, the major aspect that appears to differentiate top ranked and lower ranked companies in this particular study is the proactive stance adopted by top ranked companies as opposed to the reactive and in some cases risk mitigation approach adopted by lower ranked companies. The differences observed are therefore at a sub-driver rather than key driver level and this has important implications for using the proposed conceptual model to assist in understanding corporate sustainability motivational drivers.

4.3 Impact on company value

When considering financial implications, there was general agreement, for those companies that had implemented, or were implementing a climate change strategy, that actions taken in respect of climate change would have a neutral to positive impact on the company's bottom line. The key driver of this impact was the focus on energy and operational efficiencies which had led to cost reductions and savings. From a

value perspective respondents were of the opinion that the impact of adopting a climate change strategy would be positive for a variety of reasons including goodwill, brand, growing awareness and importance of this issue and cost cutting exercises.

There was very little evidence of any companies conducting financial analysis of climate impacts including investments, potential savings and criteria for measuring investment. The reason for this lack of focus could perhaps be attributed to the fact that most action initiated by companies at this stage has primarily focused on energy and operational efficiencies which are reasonably easy to justify in terms of resultant cost savings. None of the companies appear to have embarked on climate change mitigation projects requiring large scale investments at this stage.

None of the companies provided disclosure of environmental and climate change mitigation expenditure, investment or revenues in their annual reports other than three companies highlighting environmental spend as part of overall corporate social investment. In a few cases environmental performance information in respect of waste, recycling, energy and water consumption were included in the annual reports.

5 Conclusion

This chapter has outlined the key findings of the case studies conducted as part of the empirical analysis of this study. The study has confirmed that the conceptual framework proposed in chapter 4 encompasses the various motivational drivers identified in the six case studies conducted in this study. However, this study has identified a number of key sub-driver clusters supporting the three main motivational drivers and the model has therefore been extended to incorporate these sub-drivers which potentially provide greater insight into the similarities and differences observed in terms of motivations for company action. In addition, the study has highlighted that companies perceived to be more accountable and responsible from a sustainability perspective appear to have adopted a more proactive response to climate change than those perceived to be less accountable and responsible. From a value perspective there is currently limited disclosure regarding the financial implications of climate change mitigation and investment.

In the final chapter, the key findings of this study from both a theoretical and empirical perspective are highlighted and conclusions are drawn regarding the corporate sustainability consciousness of South African companies.

Chapter 6: Conclusions

1 Introduction

The purpose of this study was to determine the motivation for corporate investment in sustainability projects, with a specific focus on voluntary climate change mitigation actions in South Africa, and the impact that such investment has on the value of the company taking such actions.

It was therefore the intention to answer three main questions:

a) What are the sustainability values of South African companies and how are these translated in terms of their policies and practices?

b) What motivates companies to invest in sustainability initiatives, such as voluntary climate change mitigation projects in South Africa?

c) Does investment in voluntary climate change mitigation actions impact on the value of the company making the investment?

This chapter provides a summary of the findings of this study both from a theoretical and empirical perspective. Thereafter the key conclusions drawn from the findings are outlined. The chapter concludes with an overview of the contributions and resultant implications of the study and highlights some aspects emerging from the study which require further research in light of the findings and conclusions.

2 Summary of findings

This study had three distinct phases. The first phase focused on conceptual research through a literature review and analysis process which aimed to highlight the key concepts of sustainability in a corporate context with a view to understanding motivational drivers for corporate environmental interactions. The second phase of the study empirically tested the insights obtained from the literature review in a case study context focussing on six South African companies in three industries. The third phase combined the insights of phase one and two and focused on moving from a conceptual to a scientific model through empirical modelling.

2.1 Key findings of phase one: conceptualisation of motivational drivers

From the review of literature, it would appear that sustainability means different things to different people (Byrch *et al.*, 2007:29). Within this context an

understanding of the worldview and sustainability consciousness of a company and its managers could potentially be linked to a deeper understanding of the motivational factors driving sustainability actions within companies. Worldviews are not static and can change depending on new information and knowledge. As such, motivations for taking action in respect of sustainability issues might change depending on new issues which emerge that threaten the way that companies currently conduct their business. An example of this is the threat of climate change and resultant global warming.

A review of corporate sustainability literature appears to indicate that there are three main themes which underlie corporate interaction with the environment (Banerjee, 2002a:178). The first theme focuses on the stakeholder concept. In terms of this concept, business attaches importance to environmental issues as a result of the importance which other stakeholders attach to acting responsibly in respect of the natural environment. The company will only respond to pressure when a legitimacy gap opens between what key stakeholders require from the company in terms of its environmental responsibility, and the actions that a company is currently taking. The company would focus on issues that are important to stakeholder groups which are most influential and able to exert sufficient pressure to dictate how the company responds to a particular environmental issue (Nasi *et al.*, 1997:303). The key driving force motivating actions would therefore appear to be legitimacy considerations.

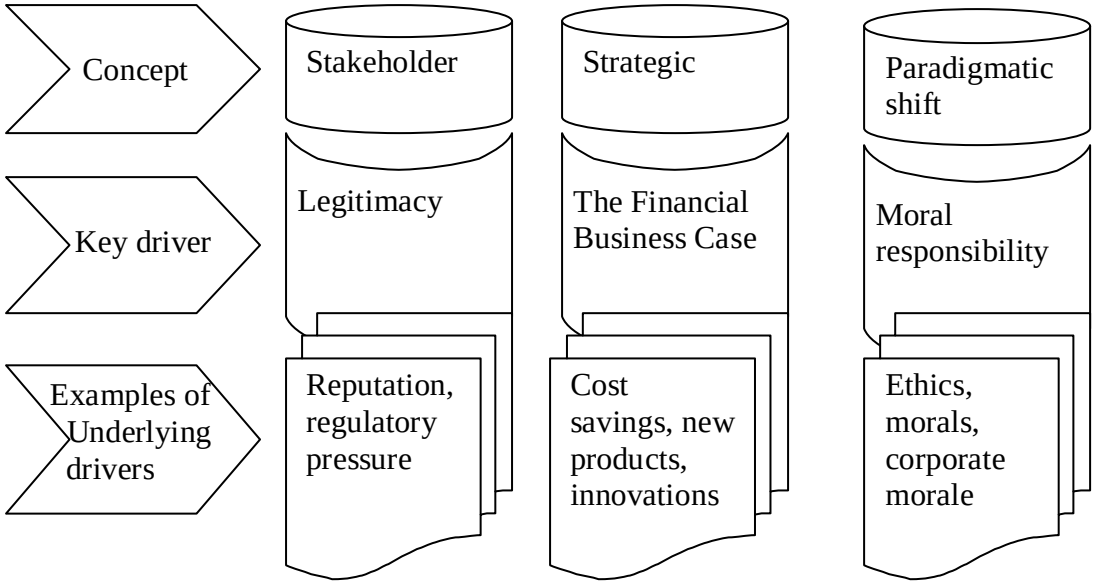
The second theme identified in the literature focuses on strategic linkages between the company and natural environment. In this respect competitive or profitability considerations result in the company taking specific action on environmental issues. Environmental issues are therefore addressed via market forces as the company responds to cost benefit considerations in respect of driving eco-efficiency, managing risks and capturing new markets (Holliday, 2001; Porter & van der Linde, 1995; Reinhardt, 2007). In the context of strategic linkages, the key motivational driving force for company action appears to be the financial business case.

The last theme which emerges from the literature focuses on moving beyond the current neo-classical paradigm which dominates legitimacy and financial considerations. This shifting paradigm focuses on the interconnectedness and interdependence of business and the natural environment. Companies are motivated to adopt environmentally sustainable practices as a result of perceived moral

responsibility to protect and conserve the environment (Gladwin *et al.*, 1995; Purser *et al.*, 1995; Shrivastava, 1995a).

The three themes and their key drivers form the basis of the conceptual model proposed in terms of this study. Figure 6.1 highlights the key aspects of the themes as depicted in the proposed conceptual framework developed in chapter 3.

Figure 6.1 Proposed Conceptual framework



A review of studies which focused on corporate sustainability (EIU, 2008; PWC, 2002) indicates that sustainability strategies employed by companies are focussed on legitimacy and financial business case concerns, with little evidence of any shift to a new paradigm. Within the context of action taken in respect of climate change these findings are repeated, however there is some evidence that moral responsibility plays a role in motivating corporate action in this respect (Bayon *et al.*, 2007; Hamilton *et al.*, 2008; Hoffman, 2005; Hoffman, 2006; McKinsey, 2008; Okereke, 2007).

There is a growing body of literature which focuses on the evolutionary nature of corporate interactions with the environment (Elkington, 1999:41; Hart, 2007:14; Zadek, 1999:6). The literature highlights three stages in the evolutionary process which commences with the view that environmental action will only occur when it is good for the business, moving towards an understanding that taking environmental action has a positive impact on the business and finally reaching the realisation that it

is necessary for business to take environmental action as a result of the interconnectedness of business, society and the environment.

From a South African perspective very few studies have been conducted into the motivational drivers for environmental action particularly in the area of climate change mitigation. From a broader sustainability perspective the dominant focus appears to be on social issues with legitimacy concerns driving the majority of actions (Bezuidenhout *et al.*, 2007:68; Trialogue, 2007b:13). The empirical phase of this study therefore focused on investigating the response of South African companies to climate change with a view to understanding whether the motivational drivers identified fitted into the proposed conceptual framework and whether there was any evidence of a shift in sustainability consciousness.

2.2 Key findings of phase two: empirical testing of conceptualisation

It should be noted that the empirical findings are based on a small section of the South African corporate sector, therefore understanding how broadly applicable these findings are would need to be borne out in future research.

The study found that the proposed conceptual framework encompassed the various motivational drivers identified in terms of voluntary environmental and climate change action of the six companies which were selected as case studies. In addition, the study revealed that there were a number of sub-drivers underlying the key drivers, and that these sub-drivers potentially provided additional information in respect of the motivations of particular company action.

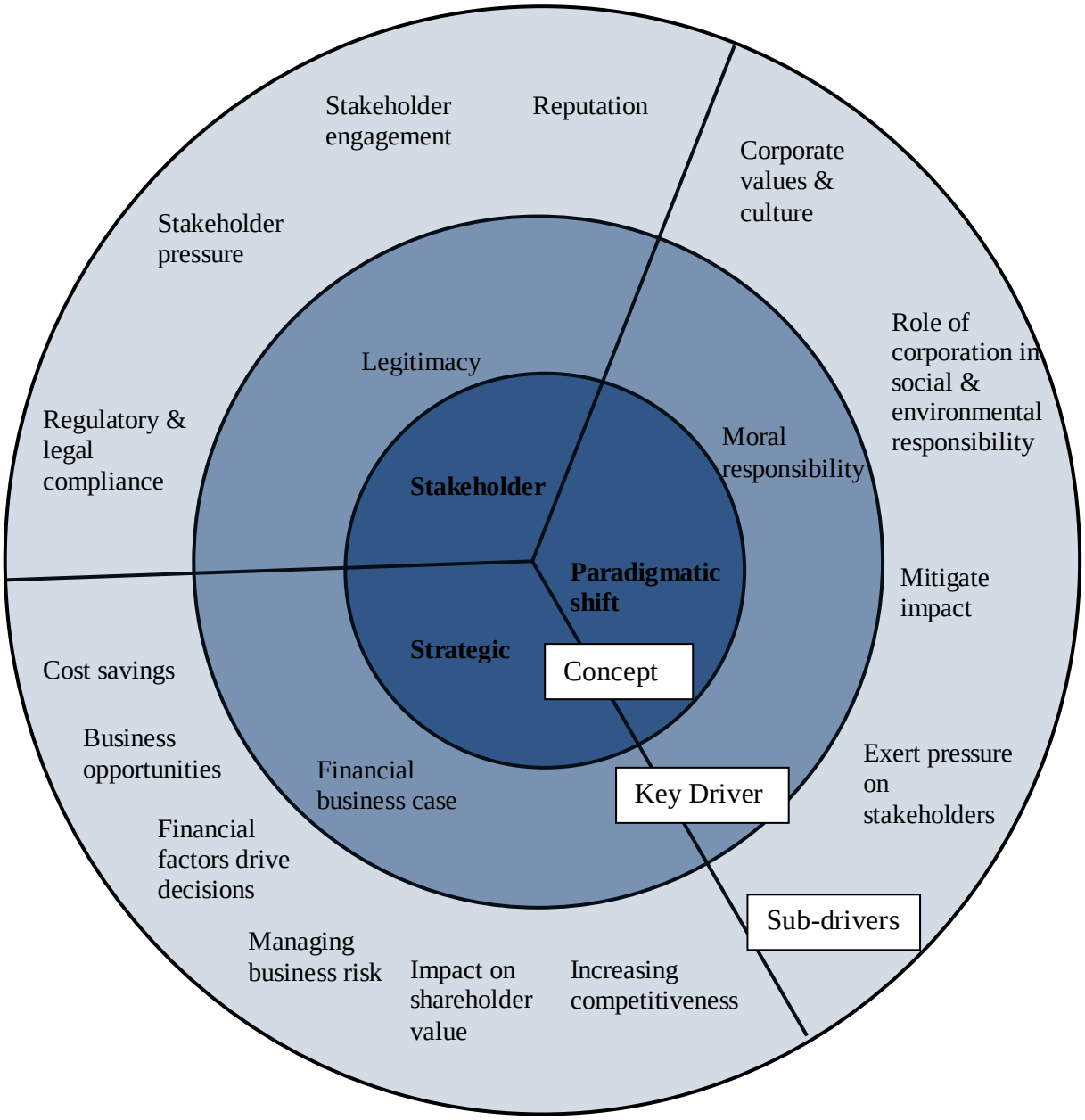
When considering the differences between companies in a particular sector, companies perceived to be more accountable and responsible from a sustainability perspective appeared to display a higher level of proactive action in respect of climate change mitigation action, compared to companies perceived to be less accountable and responsible in respect of sustainability as these companies adopted a more reactive stance with a focus on risk mitigation in some cases. From a value perspective there is currently limited disclosure regarding the financial implications of climate change mitigation and investment.

2.3 Key findings of phase three: developing a proposed scientific model

In light of the above findings, the conceptual framework outlined in chapter 3 was extended to provide for the particular sub-driver categories which were highlighted in

the analysis of the case studies. The resultant framework is depicted in figure 6.2. The empirical process followed in this study has therefore enabled the transition from a conceptual model to a proposed scientific model which outlines the interaction between the company and the natural environment and highlights the key motivational drivers and sub-drivers. These relationships can ultimately be tested through a validation process in a broader study of the South African corporate market, however this falls outside the scope of this study.

Figure 6.2 Extended conceptual framework



3 Conclusions

The purpose of this study was to determine the motivation for corporate investment in sustainability projects, with a focus on the voluntary climate change mitigation actions of South African companies. Three key areas were investigated, first understanding the sustainability values of South African companies, second investigating the motivations for sustainability initiatives and third determining the impact of voluntary action on the company value. In addition, the issue of the evolution of sustainability consciousness was investigated to determine whether there were indications of a move from the current paradigm dominated by financial considerations, to a paradigm dominated by sustainability considerations.

3.1 What are the sustainability values of South African companies and how are these translated in terms of their policies and practices?

The sustainability values of the companies in this study reflected top management commitment to environmental issues and a shift away from a purely technocentric view of the business relationship with the natural environment. Other than in industry B, no statistically significant differences were noted between companies in each industry, despite perceptions of differing levels of corporate responsibility and accountability from a sustainability perspective. However, while respondents indicated that their companies understood the importance of environmental issues and were aware of their responsibility to preserve the environment and respond to issues such as climate change, the investigation into the underlying motivations and the review of what the company had actually done in respect of environmental issues appeared to indicate that these sustainability values and sentiments were not necessarily translated into actions.

3.2 What motivates companies to invest in sustainability initiatives, such as voluntary climate change mitigation projects in South Africa?

When considering what motivates companies to take voluntary action in respect of sustainability issues, the literature review revealed three main concepts underlying the business interaction with the natural environment being stakeholder concerns, strategic linkages and finally paradigmatic shifts. The main drivers supporting each concept were legitimacy concerns, the financial business case and moral responsibility. The empirical study confirmed that these concepts and drivers

explained the motivations for voluntary climate change action within the six companies studied. In addition, the empirical study highlighted that specific sub-drivers provided further information regarding company motivations which facilitated differentiations to be drawn between companies perceived to be more responsible and accountable from a sustainability perspective from those perceived to be less responsible.

3.3 Does investment in voluntary climate change mitigation actions impact on the value of the company making the investment?

From a company value perspective, it would appear that most respondents were of the opinion that current voluntary climate change mitigation action has a neutral or slightly positive impact on the company's profitability and value. However, there is very little evidence that companies currently conduct detailed financial analysis of climate change mitigation investments and the criteria for measuring success of investments, other than in pure financial terms such as cost savings have not been extensively explored by companies at this stage. The reason for this lack of focus could be attributed to the fact that most action initiated by companies at this stage has primarily focused on energy and operational efficiencies which are reasonably easy to justify in terms of resultant cost savings and, at this stage, none of the companies have embarked on climate change mitigation projects requiring large scale investments.

Disclosure of the implications of climate change mitigation in annual reports is limited to tracking emissions and resource use. However, it is anticipated that the new code of corporate governance for South African companies, which is currently in draft format for discussion (King, 2009) will require more detailed disclosure of sustainability issues both from a risk management and business opportunity perspective.

3.4 Evolution of sustainability consciousness

When considering the evolution of sustainability consciousness the literature highlighted that there was evidence of an evolutionary process in terms of sustainability consciousness (Elkington, 1999:41; Hart, 2007:14; Zadek, 1999:6). In terms of this evolution, initially companies respond to legitimacy gaps created by stakeholder pressure. The next stage of evolution is seen when companies realise that there are strategic implications associated with adopting sustainable business practices

driven by financial business case considerations. Finally, as a result of moral responsibility considerations, companies begin to shift to a new sustainable business paradigm. When considering whether there is evidence of an evolution in the sustainability consciousness, it would appear that in respect of climate change action, South African companies in this study are not necessarily responding to specific stakeholder pressure or requirements, instead they are focussing on the strategic linkages between the environment and the company and therefore driving the financial business case from the perspective of profitability, competitiveness and risk management benefits.

This would appear to indicate that climate change highlights an aspect of evolution in sustainability consciousness in a South African corporate context as it is viewed from the perspective of strategic considerations within a financial business case setting, rather than the legitimacy concerns which have in the past driven action on other sustainability issues in a South African context (Bezuidenhout *et al.*, 2007:68; Trialogue, 2007b:13). However, moral responsibility considerations, while motivating some action do not appear to represent a fundamental shift from the current paradigm, as the extent of action taken, and the cost involved do not seem to have a major impact on the financial position of the company. Companies in this study indicated that there is an awareness of moral responsibility to preserve the environment, however at this stage the majority of action appears to focus on quick win solutions which are easy to justify in terms of cost savings and a positive impact on the bottom line.

Therefore, companies appear to be motivated by a range of factors when it comes to voluntary climate change mitigation strategies. However, the key consideration in the decisions taken focus predominantly on aspects linked to the current paradigm, with little evidence of an evolution of sustainability consciousness which could potentially lead to a new sustainable business paradigm.

4 Contributions

This study has facilitated a preliminary understanding of the factors motivating South African companies to take action in respect of sustainability issues, in particular in respect of climate change mitigation. The resultant framework outlined in figure 6.2 forms the basis for further investigation into this area of corporate sustainability.

While the exploratory nature of this study necessitated a narrow focus on six companies in three industries, further research could be carried out on a larger portion of the South African corporate market to ascertain whether motivational factors continue to be explained by the three themes identified. Once validated in this broader South African corporate context, the framework could assist in developing and implementing solutions to the threat of climate change.

The motivations identified in the study provide insights which can be used by various parties to assist in engaging corporate South Africa in the development of a response to the threat of climate change both within the current paradigm and in facilitating the shift to a new sustainability focused paradigm. This includes parties engaged in developing voluntary carbon offset projects, parties engaged in the development of policies and procedures related to voluntary climate change action, and parties developing regulations to direct corporate response to climate change.

5 Implications

In light of the more general findings in phase one and the specific findings in phase two of this study, there are broadly two implications which are considered

First, companies appear to be firmly rooted in the financially dominated paradigm, therefore any attempt to motivate company action from a climate change mitigation perspective needs to currently be driven from a financial perspective. This is perhaps best explained in terms of systems theory and the role of feedback in terms of response to particular inputs into the system. It has been suggested, that social values and moral concerns need to be translated into economic signals if solutions to social and environmental concerns are to be addressed in the current paradigm (Dobson, 1999:73). Currently, obstacles such as externalities and lack of corporate transparency can result in blockages in feedback loops. The end result is that key environmental and social signals are ignored from a corporate perspective in terms of the actions they take.

This study has highlighted that in the specific cases companies appeared to respond to environmental issues when financial signals indicated that a response was necessary to ensure continued profitability. Examples of such issues are observed in the energy crisis in South Africa which resulted in energy shortages and the threat of price increases. This appeared to drive companies to engage in energy efficiency initiatives,

with a resultant positive impact on the environment. The same pattern is observed when one considers the high oil costs which resulted in increased fuel costs and the resultant corporate drive for fuel efficient solutions.

If this is the case, the solutions to environmental and climate change issues need to send financial signals to ensure action from companies until such a time as a fundamental paradigm shift occurs which results in companies taking action from a more holistic, integrated sustainable business paradigm.

The second, and more challenging implication which arises, is determining what is required to initiate a fundamental value shift in the way that companies operate. To achieve such a shift requires an understanding of the factors which ultimately drive such changes. It has been suggested that investigations into corporate culture and management attitudes, beliefs and values might assist in facilitating an understanding of key factors which might drive such a value shift (Howard-Grenville, 2006:48; Vazquez & Liston-Heyes, 2008:179). The issue that needs to be confronted is the discrepancy between what companies say and what companies ultimately do in terms of environmental responsibility. A preliminary investigation of the sustainability values of the companies studied appears to indicate that there was a move away from the traditional technocentric view of business. Top management appear to be committed to environmental responsibility, however the translation into practical action highlights financial and legitimacy considerations rather than any major shift to moral responsibility. Until such time as the sustainability values of companies are translated into day to day actions, no fundamental value shift can occur. Understanding how belief and value systems translate into policies, procedures and actions within a company is therefore an area that requires greater scrutiny. It is suggested that a comprehensive study of sustainability values in a South African corporate context might be useful in uncovering the key factors which differentiate sustainability leaders from other companies. This may ultimately assist in identifying the issues that need to be addressed to shift companies towards a new more sustainable paradigm.

While management commitment and corporate values focus on a top down approach to ingraining sustainability values within an organisational context, there are other ways of altering the value system of a company. Pressure from employees, consumers and shareholders has the potential to influence the way in which a company does

business. Evidence of this is already emerging in terms of climate change mitigation where two of the companies which formed part of this study highlighted the influence that staff concern in respect of environmental issues had on the company approach to environmental issues in general. The collective power of individuals to influence the way in which companies operate may ultimately lead to the paradigm shift necessary to move to a more sustainable future.

> *"Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed it is the only thing that ever has." Margaret Mead*

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Annexure I: Accountability 2007 Rating

2007 Rating	Company	Sector
1	BHP Billiton Plc	General Mining
2	Sasol Ltd	Integrated oil & gas
3	Lonmin Plc	Platinum & precious metals
4	Anglo American Plc	General Mining
5	Nedbank Group Ltd	Banks
6	Anglo Platinum Ltd	Platinum & precious metals
7	Gold Fields Ltd	Gold mining
8	Barloworld Ltd	Diversified industrials
9	AngloGold Ashanti Ltd	Gold mining
10	Santam Ltd	Property & casualty insurance
11	Woolworths Holdings Ltd	Broadline Retailers
12	SAB Miller Plc	Brewers
13	Massmart Holdings Ltd	Broadline Retailers
14	MTN Group Ltd	Mobile telecoms
15	Telkom SA Ltd	Fixed line telecoms
16	Standard Bank Group Ltd	Banks
17	FirstRand Ltd	Banks
18	Aveng Ltd	Heavy construction
19	Mittal Steel Ltd	Steel
20	Exxaro Ltd	General Mining
21	Impala Platinum Holdings Ltd	Platinum & precious metals
22	Network Healthcare Holdings Ltd	Health care providers
23	Sanlam Ltd	Life insurance
24	Sappi Ltd	Paper
25	Pick n Pay Stores Ltd	Food retailers & wholesalers
26	Unitrans Ltd	Transport
27	Liberty Group Ltd	Life insurance
28	Allied Electronics Corporation Ltd	Electronics & Electrical
29	ABSA Group Ltd	Banks

30	Bidvest Group Ltd (The)	Business support services
31	AECI Ltd	Speciality chemicals
32	Edgars Consolidated Stores Ltd	Apparel retailers
33	Investec Plc	Investment services
34	Richemont Securities Ag	Clothing & accessories
35	Nampak Ltd	Containers & packaging
36	Tiger Brands Ltd	Food products
37	New Clicks Holdings Ltd	Broadline Retailers
38	Old Mutual Plc	Life insurance
39	Imperial Holdings Ltd	Transportation services
40	Steinhoff International Holdings Ltd	Furnishings
41	Remgro Ltd	Diversified industrials
42	JD Group Ltd	Home improvement retailers
43	Murray & Roberts Holdings Ltd	Heavy construction
44	Dimension Data Holdings Plc	Computer services
45	Super Group Ltd	Transportation services
46	Shoprite Holdings Ltd	Food retailers & wholesalers
47	Datatec Ltd	Computer services
48	Naspers Ltd	Broadcasting & entertainment
49	Spar Group Ltd (The)	Food retailers & wholesalers
50	Liberty Holdings Ltd	Life insurance
51	Pick n Pay Holdings Ltd	Food retailers & wholesalers

Annexure II: Case Study Interview Questions

Section A: Sustainability Values:

General questions:

A1. Environmental issues are very important to the top management of this company

Strongly agree	Agree	Not sure	Disagree	Strongly Disagree

A2. The level of top management commitment to environmental issues influences how your company approaches environmental issues

Strongly agree	Agree	Not sure	Disagree	Strongly Disagree

A3. Our company's management believes that the company's financial well-being is dependant on the environment

Strongly agree	Agree	Not sure	Disagree	Strongly Disagree

A4. Our company's management believes that financial responsibility to its shareholders, finance providers, customers and employees is more important than responsibility to environmental preservation

Strongly agree	Agree	Not sure	Disagree	Strongly Disagree

A5. Our company's management believes that it is difficult to be a successful company and preserve the environment at the same time

Strongly agree	Agree	Not sure	Disagree	Strongly Disagree

A6. Our company's management believes that we have a responsibility to preserve the natural environment

Strongly agree	Agree	Not sure	Disagree	Strongly Disagree

A7. Our company's management believes that environmental concerns should be subordinate to people's needs

Strongly agree	Agree	Not sure	Disagree	Strongly Disagree

A8. Our company's management believes that it is government's role to impose environmental taxes to direct corporate responses to environmental issues

Strongly agree	Agree	Not sure	Disagree	Strongly Disagree

A9. Our company's management believes that all costs and benefits of environmental action should be measured in financial terms

Strongly agree	Agree	Not sure	Disagree	Strongly Disagree

A10. Our company's management believes that there is a trade-off between doing good from an environmental perspective, and doing well from a financial perspective.

Strongly agree	Agree	Not sure	Disagree	Strongly Disagree

Statements: (Note: All statements are extracted from Gladwin *et al.*, 1995.)

The following statements highlight aspects of the business and natural environment relationship. If the statements were considered in light of the dominant view of your company do you believe the general consensus would be to agree or disagree with each statement set out below:

A11. Statement 1: "Sacrifices on behalf of future generations, nonhuman nature or distantly less fortunate current generations are generally unwarranted, unless market signals dictate otherwise"

Strongly agree	Agree	Not sure	Disagree	Strongly Disagree

A12. Statement 2: "The earth's physical resources are virtually inexhaustible because of infinite human ingenuity in exploiting them or in finding substitutes for emergent shortages"

Strongly agree	Agree	Not sure	Disagree	Strongly Disagree

A13. Statement 3: "Nature changes gradually, fast enough to be detected, yet slow enough to be controlled"

Strongly agree	Agree	Not sure	Disagree	Strongly Disagree

A14. Statement 4: "There is no cause for undue alarm or drastic action, because environmental dangers are greatly exaggerated."

Strongly agree	Agree	Not sure	Disagree	Strongly Disagree

A15. Statement 5: "There is plenty of time to improve scientific understanding, and in the absence of full certainty, costly measures to

prevent potentially serious or irreversible harm should be postponed for the sake of cost/benefit efficiency."

Strongly agree	Agree	Not sure	Disagree	Strongly Disagree

A16. Statement 6: "Different forms of capital are nearly perfect substitutes, implying that the current generation may run down and pass on less natural capital as long as it assures, by substitution and investment, offsetting increases in the stock of physical and human capital so as to generate equivalent levels of well being."

Strongly agree	Agree	Not sure	Disagree	Strongly Disagree

A17. Statement 7: "Individuals (and companies) should behave in a self-interested and consistent manner to maximise their utility."

Strongly agree	Agree	Not sure	Disagree	Strongly Disagree

A18. Statement 8: " The optimal economic structure for satisfying wants and allocating resources most efficiently is (free market) capitalism."

Strongly agree	Agree	Not sure	Disagree	Strongly Disagree

A19. Statement 9: "Global growth and its trickle-down benefits are the key to alleviating poverty, bettering the lives of the poor without sacrifices from the rich."

Strongly agree	Agree	Not sure	Disagree	Strongly Disagree

Section B: Company Response to Climate Change

B1. How would you describe your company's interaction and relationship with the natural environment?

B2. Has this relationship and interaction changed over time and if so how?

B3. What do you believe is driving this change (or lack of change if question 2 was answered in the negative)?

B4. What is your company's view of climate change?

B5. Has climate change featured at a strategic planning level?

B6. Has climate change featured at an operational planning level?

B7. Does your company believe that climate change will fundamentally impact its business model? If yes how, if no why not?

B8. Do you think that voluntary action to mitigate climate change impact will be sufficient, or will legislative intervention be necessary?

B9. Has your company interacted with government in terms of the development of the South African climate change strategy?

B10. Does your company believe that emissions caps will be introduced in South Africa (if yes when, and would these emissions caps impact your company?)

B11. Which of the following strategies best describes your company's approach to climate change:

a. We aim to be leaders in climate change mitigation actions

b. We aim to be fast followers in terms of climate change mitigation actions

c. We are taking a wait and see approach to climate change mitigation actions and will take action depending on what our stakeholders require from us.

Section C: Motivations

Question No.	Climate Change Strategy Y/N	Question
C1.	N/A	How committed is your leadership team to reducing your company's climate change impact?
C2.	N/A	Who do you believe is most influential in your company in terms of championing climate change mitigation action?
C3.	N/A	What is the depth of awareness and knowledge of climate change within your organisation?
C4.	N/A	What is your competitor group doing in terms of climate change mitigation actions?
C5.	N/A	Why do you believe some companies are taking action and others are not?
C6.	N/A	Does your company have a climate change mitigation strategy? (if yes go to C7 if no go to C 24)
C7.	Y	What is your strategy? (carbon neutrality, emission targets, how broadly is influence defined in terms of supply chain)
C8.	Y	How is your climate change strategy translated into policies and practices?
C9.	Y	How have you communicated your strategy and policies within your organisation?
C10.	Y	Does your company consider itself a leader in its sector in terms of climate change action?
C11.	Y	What are the key reasons for implementing a climate change strategy for your company?
C12.	Y	What are the most important objectives which your company

		hopes to achieve as a result of the adoption of the climate change strategy?
C13.	Y	What are the biggest benefits your company expects to derive from adopting a climate change strategy
C14.	Y	What actions has your company already taken in terms of climate change mitigation in the past 3 years?
C15.	Y	What are the major barriers and obstacles that have been encountered in terms of adopting your company's climate change strategy
C16.	Y	Who has primary responsibility in your organisation for climate change mitigation action
C17.	Y	Which stakeholders have the most influence in terms of your climate change strategy?
C18.	Y	Do you think actions taken have a positive, neutral or negative impact on your bottom line? Why would you say so?
C19.	Y	Do you think that actions have a positive neutral or negative impact on your company's value? Why would you say so?
C20.	Y	Do you publicise your strategy internally, externally or both?
C21.	Y	Do you believe that your strategy gives your company a competitive advantage? Why or why not
C22.	Y	How important is external awareness of your climate change actions?
C23.	Y	Do you classify climate change mitigation actions as part of CSR or not?
C24.	N	Why have you not adopted a climate change strategy?
C25.	N	Would you adopt a climate change strategy in future?
C26.	N	What would drive you to adopt a strategy?
C27.	N	What are the key reasons for not adopting a climate change

		strategy
C28.	N	Would you take action if your competitors / industry sector were all taking action?
C29.	N	Would you take action if your key stakeholders pressured you to take action? – who do you consider to be your key stakeholders?
C30.	N	Would you take action in anticipation of legislation, or would you await finalisation of legislative requirements before taking action?
C31.	N	Have you experienced pressure from stakeholders to take action to mitigate your climate change impact? If yes see C32 if no see C33.
C32.	N	Which stakeholders? Do you believe pressure will increase or decrease in the future, and will it come from the same or other stakeholder groups
C33.	N	Do you expect this pressure to emerge sometime in the future and if so who do you believe will drive this pressure
C34.	N/A	Would your company consider buying carbon offsets? Why?
C35.	N/A	If buying offsets was cheaper than taking internal action to reduce emissions would your company consider buying offsets to reduce its carbon footprint?
C36.	N/A	If your company bought / buys offsets what is important in terms of the offsets? (price, project, reputation of provider etc)
C37.	N/A	Do you believe that any investors take climate change action into account when deciding to invest in your company?
C38.	N/A	Do you believe that the continued focus on quarterly/semi-annual profits makes it difficult to invest in longer term sustainability projects linked to climate change mitigation?
C39.	N/A	Do you believe that any of your customers take climate change

		action into account when deciding to purchase from your company?
C40.	N/A	Do you believe that potential employees take climate change actions into account when considering whether to work for your company?
C41.	N/A	Have suppliers approached you regarding your climate change actions?
C42.	N/A	Have finance/capital providers required you to provide information regarding climate change mitigation actions in your company?
C43.	N/A	Do you believe that environmental responsibility and climate change responsibility smooth the way for interactions with communities and government?
C44.	N/A	Do you believe that making a public statement regarding your climate change strategy opens your company up to more scrutiny?
C45.	N/A	If a climate change mitigation project has bottom line benefits (such as energy efficiency saving electricity costs) would it be approved?
C46.	N/A	If a climate change mitigation project has no direct financial benefit would it be approved? What would the criteria be for evaluating this type of project?
C47.	N/A	How does or would your company measure whether an investment in climate change mitigation is a good or bad investment?
C48.	N/A	Would your company make an anonymous donation to a cause which mitigates climate change?
C49.	N/A	Does your company believe it has a responsibility to preserve the environment for future generations?

C50.	N/A	Would your company make a substantial investment in climate change mitigation efforts if the only benefit was external to the company or would you need to prove that some benefit flowed to the company (even if it was intangible eg PR, brand, employee pride)
C51.	N/A	Do you believe that the current global financial crisis will impact on your company's strategy or mitigation actions in respect of climate change?
C52.	N/A	Is there any question which you wish to return to or revise your answer to now that we have reached the end of the interview?

Annexure III: Calculation of statistical significance

Mann-Whitney U test:

The Mann-Whitney U test was employed to make inferences about the differences in Likert scores per company.

The following equations were used to calculate the test statistic (Siegel, 1956:120):

Assign a rank of 1 to the lowest score in the combined (n_{1+} n_2) group of scores, assign rank 2 to the next lowest score etc. Then:

$$U_1 = n_1 n_2 + \frac{n_1(n_1 + 1)}{2} - R_1$$

$$U_2 = n_1 n_2 + \frac{n_2(n_2 + 1)}{2} - R_2$$

Where R_1 = sum of the ranks assigned to a group whose sample size is n_1

Where R_2 = sum of the ranks assigned to a group whose sample size is n_2

Determine the significance of the observed value of U:

$$z = \frac{U - \frac{n_1 n_2}{2}}{\sqrt{\frac{(n_1)(n_2)(n_1 + n_2 + 1)}{12}}}$$

Correct for ties in the rankings:

$$z = \frac{U - \frac{n_1 n_2}{2}}{\sqrt{\left(\frac{(n_1)(n_2)}{N(N-1)}\right)\left(\frac{N^3 - N}{12}\right) - \Sigma T}}$$

Where $N_1 = (n_{1+}\ n_2)$

$$T = \frac{t^2 - t}{12}$$

Where t is the number of observations tied for a given rank.

Z-test

The z-test was employed to make inferences about the differences in proportions per category.

The following equations were used to calculate the test statistic z (Lomax, 2001:146):

$$z = \frac{p_1 - p_2}{s_{p_1 - p_2}} = \frac{p_1 - p_2}{\sqrt{p(1-p)(\frac{1}{n_1} + \frac{1}{n_2})}}$$

Where n_1 and n_2 are the sample sizes, in this case this was the number of observations coded for the particular company in a particular document which was under review, and

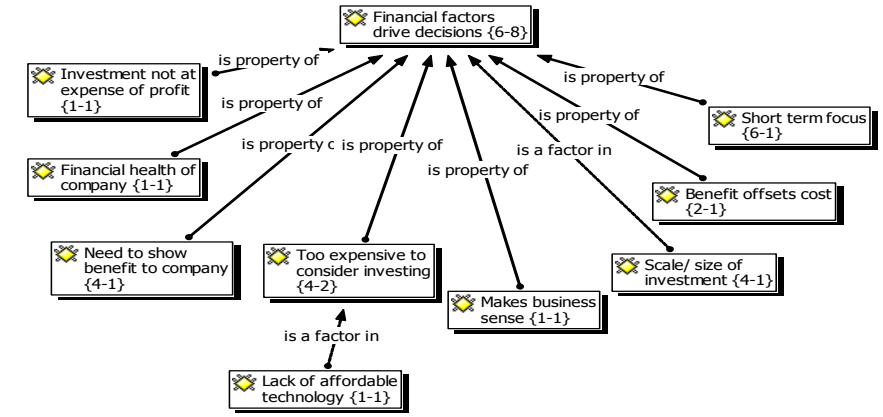
$$p = \frac{f_1 + f_2}{n_1 + n_2}$$

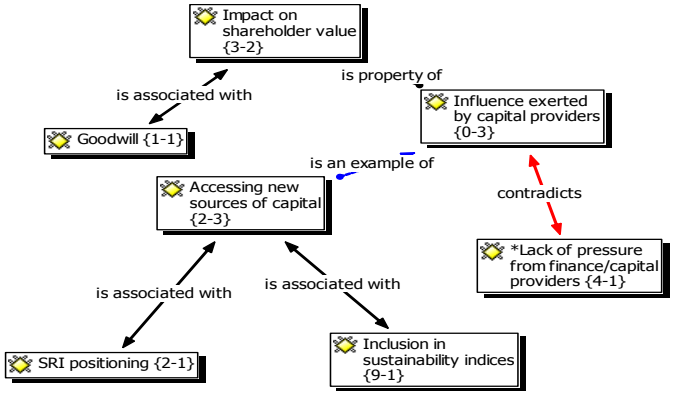
Where f_1 and f_2 are the observed frequencies of occurrence of the category being analysed.

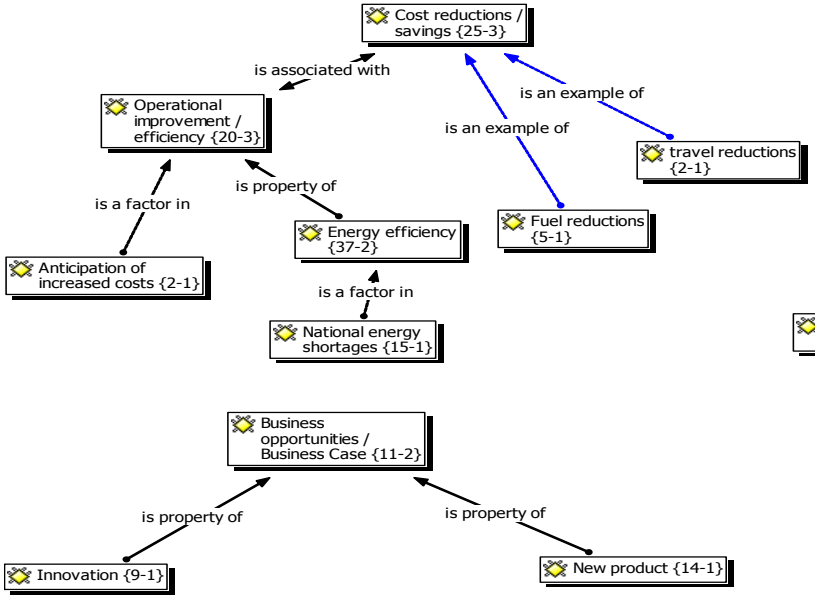
A 90% confidence level was used to determine statistical significance.

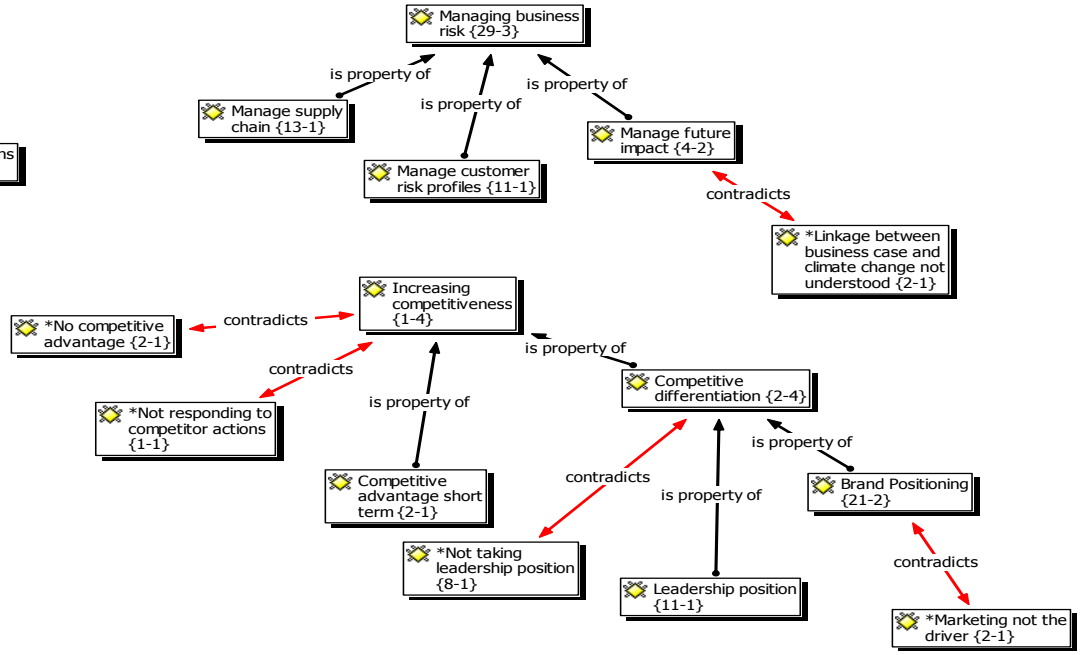
Annexure IV: Network Diagrams

Network Diagram: Financial Business Case

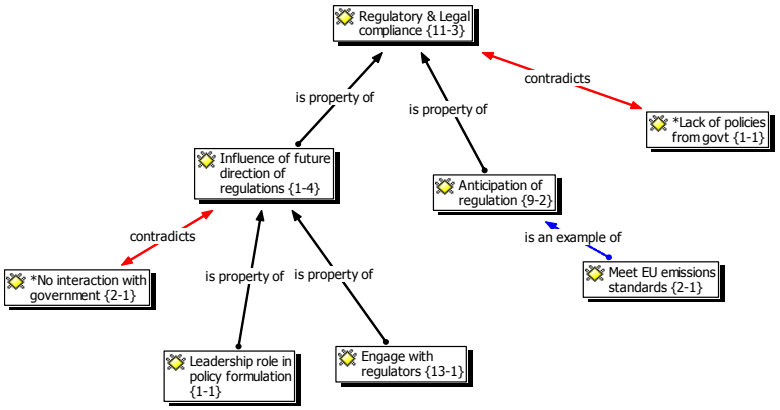


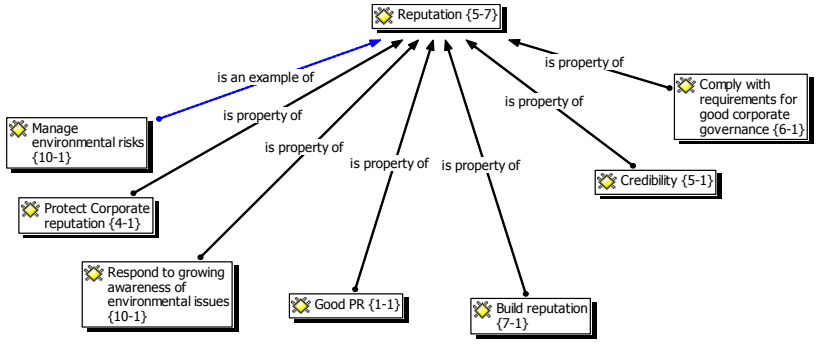


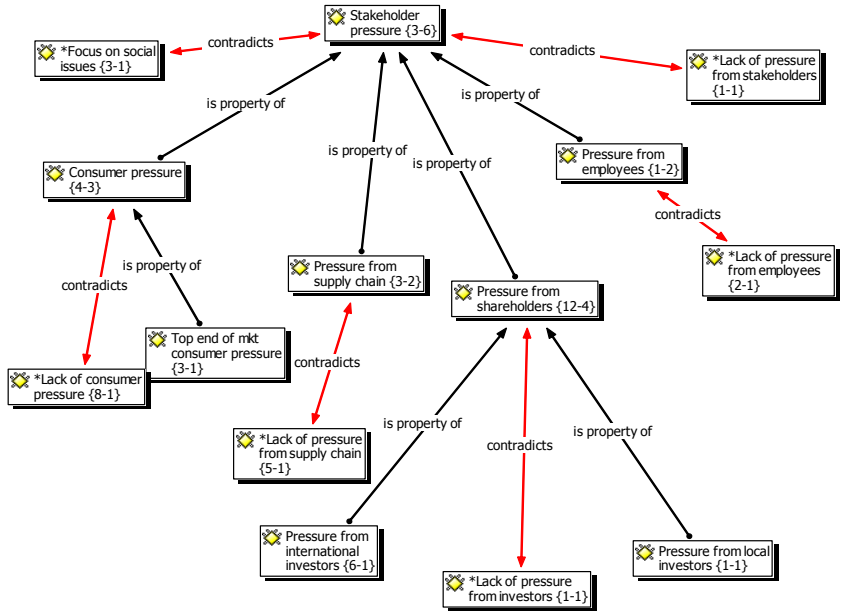


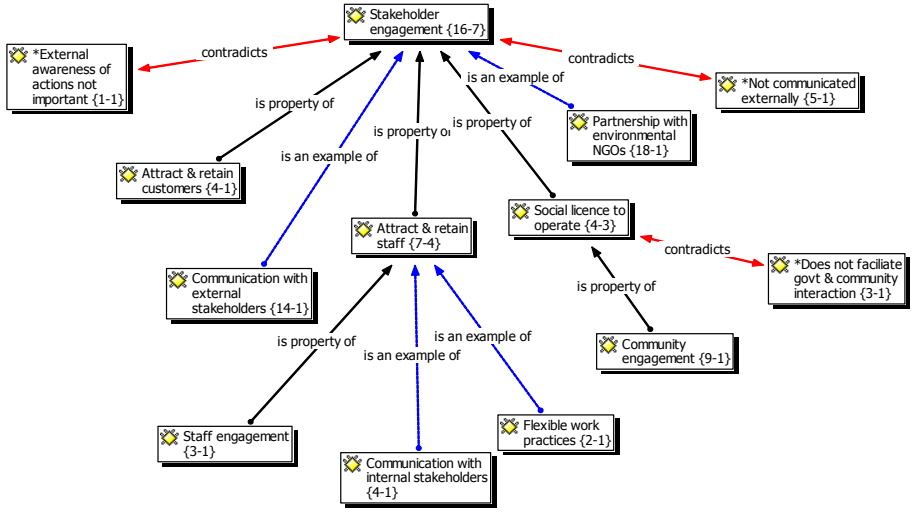


Network Diagram: Legitimacy

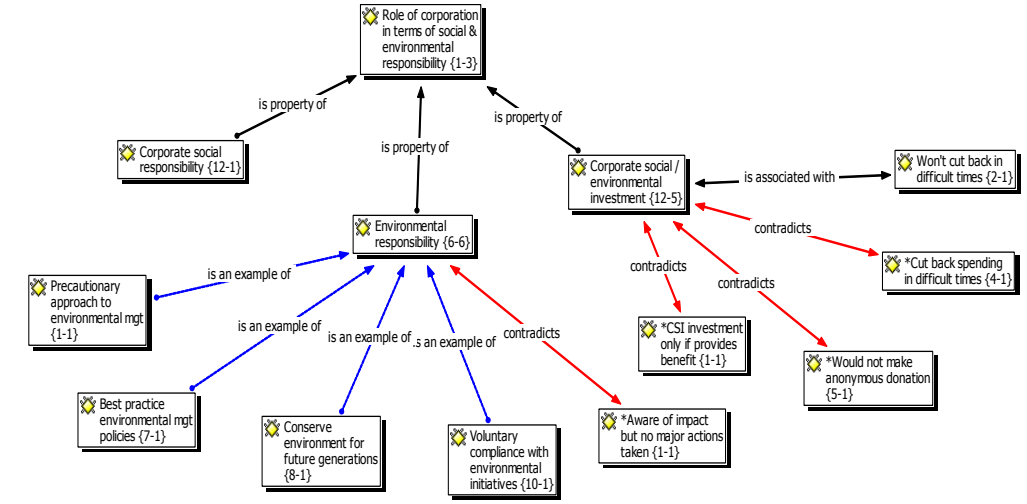


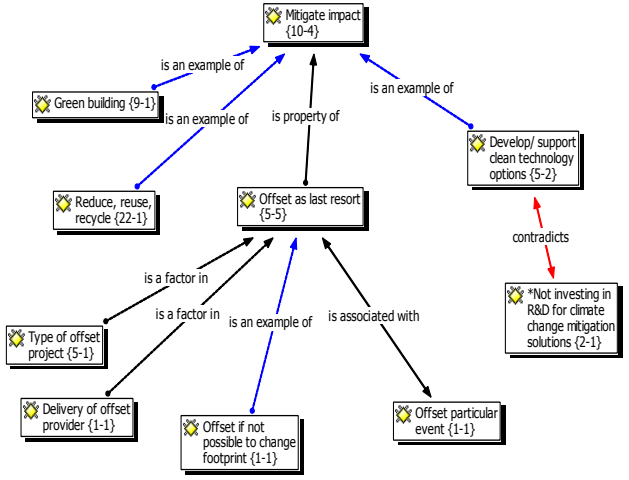


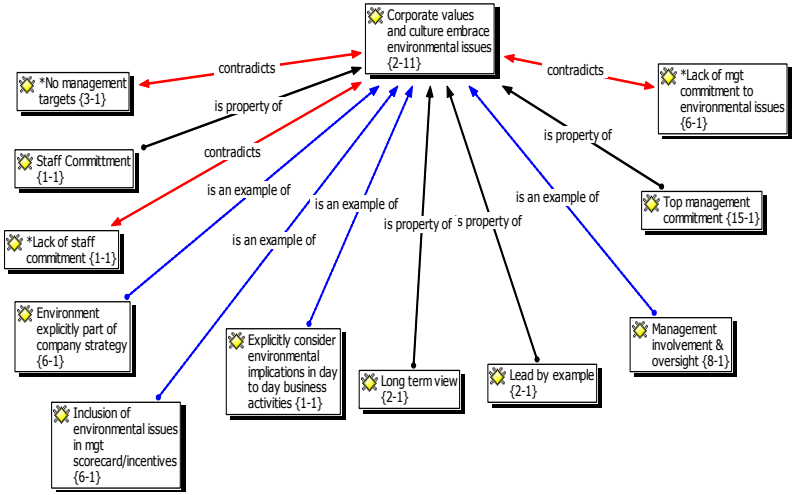


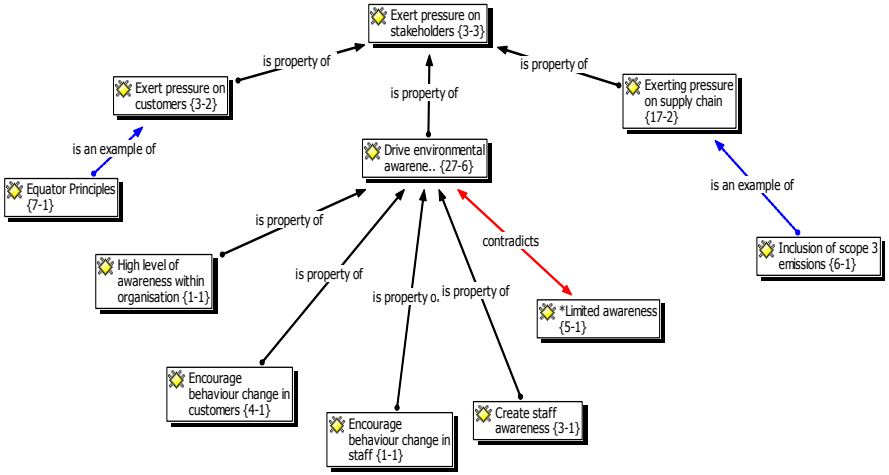


Network Diagram: Moral Responsibility









Annexure V: Description of code clusters

Code Cluster	Code Cluster ID	Short description of cluster	Category
Business Opportunities / Business Case	Business_Opp	Linked to items which provide evidence of new products / product innovations / green business opportunities arising from the response to environmental / climate change issues	Financial Business Case
Corporate values and culture	Corp_values	Aspects which highlight elements of corporate values and culture which are supportive of environmental issues. This would include the demonstration of top management commitment and inclusion of environmental issues in the company's main business strategy .	Moral Responsibility
Cost reductions / savings	Cost_reductions	Environmental initiatives which result in cost reductions / savings	Financial Business Case
Exert pressure on stakeholders	Exert_pressure	Evidence of the company pressuring stakeholders to act on environmental / climate change issues and driving behaviour changes.	Moral responsibility
Financial	Financial_factors	Highlights instances where	Financial

factors drive decisions		decisions regarding investment in environmental / climate change mitigation efforts are driven primarily by financial considerations.	Business Case
Impact on shareholder value	Shareholder_value	Actions taken are motivated by the ultimate impact on shareholder value as a result of attracting investment or driving value factors such as goodwill.	Financial Business Case
Increasing competitiveness	Incr_comp	Evidence of the company using leadership position on environmental issues to increase its competitive positioning	Financial Business Case
Managing Business Risk	Business_Risk	Evidence of the company taking action in respect of environmental issues to mitigate business risk	Financial Business Case
Mitigate impact	Mitigate_impact	Company actions are driven by attempts to mitigate environmental impact, with little or no economic benefit to the company	Moral Responsibility
Regulatory & Legal compliance	Reg_compliance	Company action driven by current or anticipated legislation and regulatory	Legitimacy

		pressure	
Reputation	Reputation	Evidence of company taking action to protect or build its reputation	Legitimacy
Role of the corporation in terms of social and environmental responsibility	Role_corp	Evidence and examples of the company playing a role as a result of corporate social and environmental responsibility.	Moral responsibility
Stakeholder engagement	Stakeholder_engage	Evidence of proactive engagement with stakeholder groups to manage environmental expectations	Legitimacy
Stakeholder pressure	Stakeholder_pressure	Evidence of the company reacting to stakeholder pressure in respect of environmental expectations.	Legitimacy

Annexure VI: Overview of data interpretation per case study

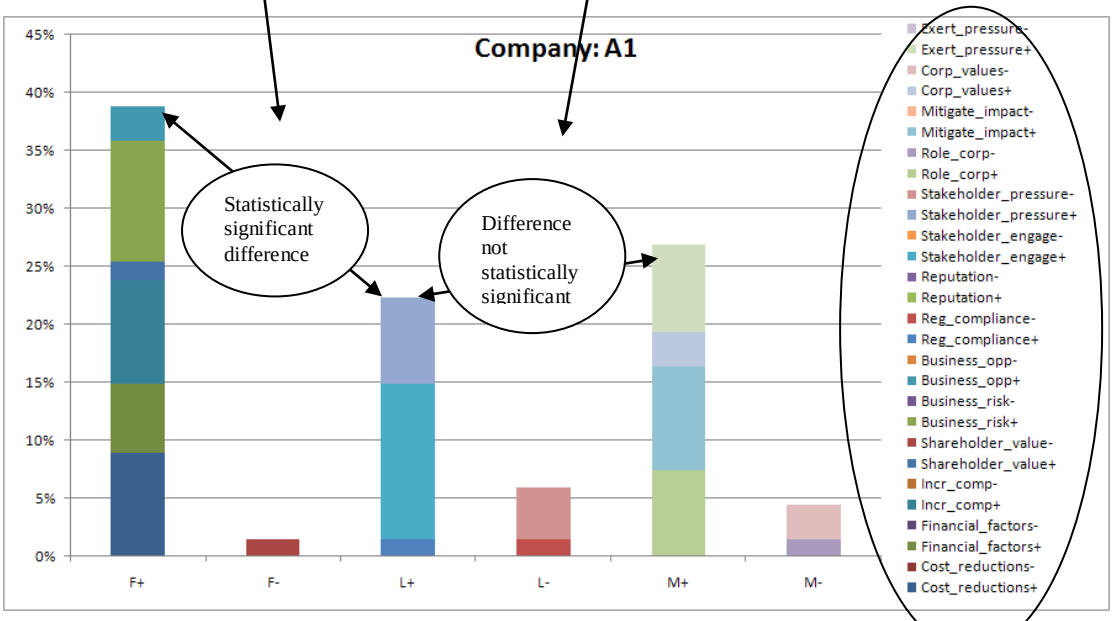
Example table: Summary of coding frequencies

Company A1	Financial		Legitimacy		Moral Responsibility	
	F+	F-	L+	L-	M+	M-
Interview	39%	1%	22%	6%	27%	4%
CDP	42%	0%	23%	0%	33%	1%
AR & SR	25%	0%	25%	0%	50%	0%

Example table: Summary of statistical significance of differences

Company A1	F+ L+	F- L-	F+ M+	F- M-	L+ M+	L- M-	F+ F-	L+ L-	M+ M-
Interview	**Yes**	No	No	No	No	No	**Yes**	**Yes**	**Yes**
CDP	**Yes**	No	No	No	No	No	**Yes**	**Yes**	**Yes**
AR & SR	No	No	**Yes**	No	**Yes**	No	**Yes**	**Yes**	**Yes**

Example Graph: Frequency analysis of interview coding: Company A1



Sub drivers identified in coding process refer to Annexure IV for detailed network diagrams and Annexure V for descriptions

In the case of the interview transcript of company A1 the difference between statements which support the financial business case (39%) and statements which support legitimacy (22%) is statistically significant, however the difference between moral responsibility (27%) and legitimacy (22%) is not statistically significant. Therefore in ranking the importance of the various factors motivating this company to take action the conclusion that can be reached is that financial business case factors are more important than legitimacy factors. However while it appears that moral responsibility factors are more important than legitimacy factors, the difference in the observed frequencies is too small to be statistically significant and therefore no conclusion can be drawn as to whether moral responsibility factors are more important motivational drivers to this company than legitimacy factors.