An Investigation of the Impact of Psychology of Leadership on Effective Enterprise Risk Management Behaviour

The Thesis Submitted for the Degree of Doctor of Philosophy

By

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Dedication

In the name of God, the Most Gracious, the Most Merciful. I dedicate my dissertation work to my family and friends. I am grateful to my loving wife, her support and encouragement for the past years was appreciated. I also dedicate this dissertation to my father and brothers for always believing in me.

A special thanks to my supervisor Dr Abraham Althonayan for his effort and endless guidance.

Declaration

I hereby declare that this Ph.D. thesis entitled investigating the influence of the Phycology of leadership on enterprise risk management was carried out by me for the degree of Doctor of Philosophy under the guidance and supervision of **Dr Abraham Althonayan**, Director of International Business Development and Senior Lecturer in Strategic Management, Operation and Management and MBA at Brunel University. The interpretations put forth are based on my reading and understanding of the original texts and they are not published anywhere in the form of books, monographs or articles. The other books, articles and websites, which I have made use of are acknowledged at the respective place in the text.

Abstract

This research examined the psychology of leadership with respect to Enterprise Risk Management (ERM). ERM a risk management process that has been developed to enable organizations to minimize internal and external risks and exploit opportunities for gain. Despite the prevalence of several ERM frameworks for various kinds of risk, their implementation has been at best, partially effective. Given that the implementation of ERM's is the responsibility of senior management / leaders of organizations, it was assumed that one of the reasons for the faulty ERM implementation may be attributed to poor leadership. The literature indicated that the psychology of leadership related to implementation of risk management programmes refers to the ability to make rational decisions under condition of risk and uncertainty and the ability to influence others in the organizations to adopt and develop a risk management culture. However, the elements of a psychology of leadership that would lead to effective ERM implementation have been largely ignored in the literature. The gap in the literature this research attempts to bridge. The abductive pragmatic approach was used using qualitative and quantitative methods and primary and secondary data. The analysis of the secondary data led to the formulation of a framework containing various psychological factors related to decision making, leadership style and organisational culture. Qualitative data was collected through semi-structured interviews with 42 respondents from private organisations operating in the Saudi oil and gas sector, whilst quantitative data were gathered from 100 respondents from private organisations operating across various sectors in Saudi Arabia. The analysis of primary data collected from the empirical survey and the information gathered from the literature review corroborated all the factors identified in relation to decision making, leadership style and organisational culture. The key factors found to impact psychology of decision making included risk perception, psychometric paradigms, bias, culture, gender, emotion, decision-making style, attitude and protective zones. The factors impacting psychology of creating organisational culture of risk included leadership style, development, communication and appetite for monitoring risk, the development of an ethical organisation, role identification, the transformational leadership style and facilitation of the emergence of champions at all levels of the organisational hierarchy.

One of the key findings of this research highlighted the occurrence of bias or heuristics that can impede rational decision making under condition of risk and uncertainty. The most important of these include representation, availability and anchoring, which can lead individuals to overestimate or underestimate the consequences of their decisions, and make

decisions that do not lead to the desired outcomes from occurring. Another finding is the corporate environment in Saudi Arabia related to risk management. It was found that women in Saudi Arabia are more risk averse than their male counterparts. Findings suggest that this is the outcome of social prescriptions related to the role of women and indicate that steps must be taken to break down cultural barriers that prevent female participation in decision-making processes. In this connection, it was also found that in Saudi Arabia there is low tolerance for uncertainty and ambiguity, high tolerance for hierarchy, that values the community over the individual and that is more masculine than feminine in its worldviews. All of these have resulted in a risk averse management culture in Saudi Arabian organizations. It was also found that it is the transactional leadership style that is better suited to risk management activity than authoritarian, individualistic or transactional leaders. These finding are relevant as they constitute a framework or model of ERM implementation that may be used by any organization that seeks to effectively implement ERM frameworks. The leaders of these organizations can use this framework to understand the mental processes that they undergo when they have to make rational decisions under condition of risk and uncertainty as also how to leverage various psychological factors in creating an organizational culture of risk. The key limitation of this research is that it does not conduct statistical tests to explore positive and significant links between the various dimensions of the psychology of risk leadership and the benefits of an effective ERM implementation.

The recommendations aims to help improve ERM implementation in Saudi Arabia and a future research for those interested in investigating the influence the psychology of leadership on ERM in a context of a particular sector.

Keywords: Enterprise Risk Management, Leadership, Psychology,

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Abbreviations

AIRMIC	Association of Insurance and Risk Managers in Industry and Commerce
ANAO	Australian National Audit Office
AS	Stander Australia
BBC	British Broadcasting Corporation
CAS	Casualty Actuarial Society
CEO	Chief executive officer
CFO	Chief financial officer
COSO	Committee of Sponsoring Organizations of the Treadway Commission
CRO	Chief Risk officer
ERM	Enterprise Risk Management
EU	European Union
FERMA	Federation of European Risk Management Associations
HBR	Harvard Business Review
IRM	Institute of Risk Management
ISO	International Organization for Standardization
IT	Information technology
KPI	Key performance indicator
KPMG	Klynveld Peat Marwick Goerdeler (accounting organization)
NZS	Standers New Zealand
NZTA	New Zealand Transport Agency
PESTLE	Political, Economic, Social, Technological, Legal and Environmental analysis
PwC	PricewaterhouseCoopers
RIMS	Risk Management Society

SAI	Standards compliance And Information business
SOA	Society of Actuaries
SOP	Stander operating procedures
SSM	Soft system methodology
SWOT	strengths, weaknesses, opportunities, and threats analysis
TTC	Toronto Transit Commission
Y2K	Year 2000

Chapter 1 – Introduction

This chapter provides the background of the research, the problem statement, research aims and objectives, research contribution, research methodology brief and the structure of the dissertation.

1.1. Background of the Research

Need for Enterprise Risk Management - Modern organisations face an increasing number of risks and uncertainties. According to Klein (2016) risk refers to threat of damage or loss or any negative consequences arising due to external or internal vulnerabilities of the organization and which can be avoided and to the loss of opportunities arising due to avoidance seeking behaviour of conservative management. The inference here is that risk is something harmful but which can be countered through foresight and pre-emptive action. Denk and Exner-Merkelt (2005) define risk as the possibility that future events will negatively impact organisational outcomes. Aon Corp (2009) has outlined a set of 10 main risks faced by today's organisations. These include economic recession, changes in regulations/legislation, business interruptions, competition, risk to commodity prices, damage to brand value/reputation/goodwill, lower liquidity, supply chain failure, liability to third parties, and top talent attrition. COSO (2004) also categorises the risks impacting modern organisations as events that are volatile, complex and heterogeneous, as well as external risks such as sudden changes in consumer requirements or competitor strategies, along with employee behaviour and developments such as new policies, regulations and standards to be complied with.

Organisations resort to various measures to counter these risks. According to BBC Network (2009), British Telecom cut 15,000 jobs after incurring GBP £1.3bn in losses; Honda motors shut down its Swindon plant for 5 months following a reduction in demand for cars; whilst Woolworths closed down operations in the United Kingdom, rendering 27,000 workers jobless. In 2008, the slowdown of the US financial sector triggered a worldwide recession (Pettinger, 2016). More recently the European Union has been confronted with the sovereign debt crisis and the exit of the United Kingdom from the EU blocks in June 2016 (Jackson *et al.*, 2016). It may be inferred that there is a need for organizations today to prepare for risk which may not be

It is in order to counter the reality of risk, that the concept of Enterprise Risk Management has been developed. In 1996, a legal precedent was set by the *Caremark* case requiring

executive leadership to implement policies and procedures to manage an organisation's most important risks (Gates, 2006). Following on from the US Sarbanes-Oxley Act 2002, there has been an increasing legal requirement for boards worldwide to adopt fiduciary responsibility for active involvement in strategic planning and risk management. This conceptual shift from a traditional oversight-based role to a new paradigm of proactive engagement has resulted in the development of an enterprise-wide risk management approach Enterprise risk management, or ERM, represents the management of risks pertaining to various aspects of an organisation. According to CAS (2003), by integrating hazard, financial, operational, compliance and strategic risks, ERM prepares organisations for all possible functional and process risks that it could possibly face at any level. According to Jablonowski (2009), ERM recognises the interdependencies amongst risks confronting all organisations today. Monahan (2008) also points out that whilst traditional risk management is concerned only with safeguarding the assets and profitability of the organisation through pre-empting risk and mitigating the impact of risk through swift recovery, ERM considerably extends the scope of risk management. This is achieved by addressing all internal and external risks, creating awareness throughout the organisation, protecting and enhancing shareholder value, and by seizing potentially profitable opportunities.

The multiple views of ERM are captured by CAS (2003), which defines ERM as "t*he discipline through which any business can assess, control, exploit, finance and monitor all possible risks with the goal of creating short and long term value for its stakeholders*". Thus, ERM is defined as a discipline that is applicable across industries, which exploits opportunities whilst considering all stakeholders, addressing all possible risks, and ensuring risk mitigation. Barton *et al.* (2002) suggest that the rationale behind ERM is to maximise shareholder value by balancing growth with risk mitigation and the efficient allocation of resources in order to achieve business objectives. According to a survey conducted by Advisen and RIMS (2013), ERM adoption is on the increase, with 63% of all organisations considered in the survey having been implementing full-time ERM programmes. There are several ERM frameworks including those developed by the Casualty Actuarial Society (CAS), the COSO ERM Framework and the RIMS Risk Maturity Framework. However, Salvetti and Snodgrass (2016) point out that all of them have a similar aim which is to formulate methods to identify, analyse, respond and monitor to internal and external risks and opportunities to which an organization may be exposed to.

Enterprise Risk Management: A Leadership Driven Activity - ERM is an activity driven by leaders of business entities. COSO (2004) defines ERM as a process implemented by the organisation's board of directors, across the enterprise, for the purpose of identifying uncertainties that might impact the business and to prepare accordingly so that the organisation can achieve its business objectives. According to Yilmaz (2008), ERM is essentially a top-down activity, initiated and supervised by top management and implemented by lower echelons of management. Dafikpaku (2011) points out that whilst everyone within an organisation is accountable for the efficient running of ERM programmes, the chief executive officer together with the board of directors assume ultimate responsibility for all risks that the business is exposed to and the outcomes of the ERM programmes implemented. According to HBR (2013), the organisation's board of directors – comprised of directors from other organisations, academics and professionals, together with the CEO, chief financial officers, chief risk officer and chief compliance officers – is collectively responsible for the success of ERM implementation.

Failure of Enterprise Risk Management Implementation – Despite their widespread adoption, there are several instances where the implementation of an ERM program has failed. Slezak (2014) pointed out how in 2014 General Motors underestimated the probability of risks that ultimately lead to defects occurring in manufacture and the subsequent recall of 3.1 million vehicles and losses of $300 million. This was despite a full-fledged ERM program implemented in the company. These losses were attributed to the failure of the ERM program due to faulty decision making, lack of risk awareness through the organization and lack of proactive implementation (Slezak, 2014). According to Minsky (2015) Volkswagen had to contend with 30 lawsuits and a 40% plus reduction in its stock value all because of poor implementation of enterprise risk management. Kumar (2007) pointed out that BP had to pay millions of dollars in lawsuits because numerous accidents such as the explosion of the Deepwater Horizon Offshore rig in 2010, refinery explosions in 2005, pipelines rupturing in 2006 and another oil-rig explosion in 2003. These were attributed to a lack of proper risk management planning and implementation (Compliance Week, 2007). In 2015 Maggie had to recall its packed food products and this was due to a failure in risk management (Kumar, 2015). In an ERM study conducted by Beasley (2015) on the current state of ERM implementations in the United States, it was found that all the companies considered in the research had ERM programmes in place. But 19% were classified as being very immature, 23% as developing, 35% as evolving, 19% as mature and just 4% as being robust. It was

concluded that the Boards overseeing the operations of these organizations were responsible for the poor implementation of the various ERM programmes.

The inference that may be made here is that ERM programmes can fail with catastrophic consequences for organizations. The possibility of failure of an ERM program is itself a risk. Insofar as the implementation of ERM programmes is the responsibility of the senior management, it may be concluded that the failure of an ERM program is also the failure of these leaders. It is against this background of the failure of leaders to effectively implement ERM programmes that this research will be conducted.

1.2. Problem Statement

In the previous section, the inference was made that poor implementation by leaders of an organization leads to failure of the ERM program. This would not only result in losses, but also deny the organization benefits of an effective ERM implementation. The advantages of ERM have been enumerated as including greater transparency, corporate governance, security, cost savings, technological leverage, business continuity, preparedness for disaster, and regulatory compliance, as well as greater accuracy of financial disclosures, stricter norms for financial reporting and control, greater focus from organisational ratings, and the facilitation of the globalisation of the organisation's activities (SOA, 2008). The inference may be made that ERM is not a peripheral activity, but forms a core part of business strategy – one that helps to achieve business success. ERM converts uncertainties not only into risks that have to be mitigated, but also into opportunities that might be exploited. ERM is therefore of vital strategic importance to the organisation in cases where the decisions made can either erode or enhance shareholder value. Therefore, the failure of leaders of a company to properly implement ERM programmes is a problem that needs to be examined.

However, the specific leadership mental characteristics or attitudes that result in effective ERM implementation or risk management have not been highlighted in the literature. There are various theories of leadership summarized in Bolden *et al.,* (2013). The great man theories posit that leadership is something innate and inborn and there are great people born who are destined to lead. The trait theories focus on specific qualities associated with leaders and not possessed by others. Research conducted by Hoffman *et al.* (2011) suggests that proactive or effective leaders exhibit distinct traits and different states compared to other leaders. These include achievement motivation, energy, dominance, honesty/integrity, self-confidence, creativity and charisma, good interpersonal skills, effective oral and written communication, administrative/management skills, problem-solving skills and good decision-

making abilities. These traits have been found to be consistent predictors of effective leadership. The behaviourist theories state how leaders behave or act and not just their qualities. The situational leadership theories specify on different styles of leadership called forth in different situations. The contingency theories explore specific contingencies or situational variables that call forth specific leadership styles. The transactional theories focus on the inter-relationships between leaders and their followers, while the transformative theories focus on how leaders transform their organizations. Hillson (2011) points out that the broad consensus on leadership at present is that it is represents a certain competence that provides a vision and mission, sets an overall direction, defines goals and inspires people to commit themselves to courses of action that will help to secure such goals. In contrast, managers can implement, monitor and correct tasks that are implemented by their staff. However, the ways in which effective ERM is achieved through leaders' actions and decisions under the condition of risk and uncertainty remains unaddressed by the various theories of leadership currently in circulation. In this connection, Christopher (2012) states that there is a growing need for leaders who are capable of coping with ever-changing, disruptive, transformative, complex and non-linear risks. This is especially true given the disappearance of the stable, linear business environment that could be dealt with using earlier prescriptive and positivistic risk management approaches. Berry (2000) states that an increase in the number and variety of risks means that the scope of conventional transformational and transactional leadership has to be expanded to include risk leadership. Kessler (2011) also points out that today's leaders cannot simply lead daily business activity, but also have to be highly reflexive and attuned to the risks the organisation could face, whilst also developing appropriate risk treatment strategies. The corollary of this is also true: failures in risk leadership, including an inability to heed warning signals, ignoring past failures and lack of awareness about one's own inabilities, can cause trouble for the business entity.

Håksosson *et al.* (2013) point out that individuals employ their own personal attributes when taking action and making decisions. This is believed to be true even in relation to responsibilities concerned with risk management. The particular leadership style found within this context of risk management may be termed 'risk leadership', and it refers to the set of traits on which leaders base their decisions, actions, interactions and behaviours (Bolman and Deal, 1991). Håkonsson *et al.* (2013) studied strategic decision making processes involved in supply chain risk management and indicated that an increase in the maturity of decision-making ability leads to an enhanced resilience to disruption and greater organisational

performance. Khan and Burns (2007) point out that it is important to understand how decision makers interpret the business environment, make strategic decisions and deploy resources in pursuit of organisational objectives. It is this that explains why similar situations lead to different approaches being developed by different organisations. It is argued that talent plays a bigger part in risk leadership than technology, and that effective ERM implementation continues to remain an elusive goal due to a lack of understanding with regards to leaders' decision-making processes, despite years of development in the areas of processes, systems and technology solutions (Kirby, 2013). Moreover, leaders exhibit specific leadership traits that result in effective change management, vision/mission setting, the empowerment of followers, and the infusion of ideology throughout the organisation. Block (2003) states that the most important responsibility of leaders is to create a unique culture for a business entity that results in sustainable competitive advantage. Whilst Mainelli (2004) points out it is for these reasons that leadership skills are necessary for establishing risk culture within an organisation. Gandz and Seitjts (2013) indicate that leaders can create an effective risk culture through the use of leadership symbols, artefacts and stories and, by doing so, bring about required changes in behavioural patterns and thoughts. Furthermore, it is asserted that leaders have the ability to create high awareness regarding risk and a strong risk culture across the organisation as a result of explicit communication accompanied by clear guidance (Rasid *et al.*, 2011). Schein (2015) indicates that the main task of leaders is to create an organizational culture that is able to manage risk. On account of their authority, they determine how a company is run and how corporate culture can be influenced. Willaert (2016) states that the challenge is to create an organizational culture that promotes risk management.

The implication is that none of the current leadership theories address or highlight the specific leadership traits that individuals should possess in order to effectively manage risk. It may also be pointed out that current leadership theories focus more on traits, qualities, action and behaviour but not on those mental processes that drive external manifestations such as trait development and behaviour. There is a gap in the literature on the psychology of leadership related to decision making and risk management culture development in organizations that lead to effective risk management. It is this gap in the literature that this dissertation will bridge.

In this research, decision making amongst executive leaders is analysed through a framework built upon leadership and risk management theory. This study particularly focuses on the

psychological elements and factors that impact the way in which executives make decisions under the condition of risk, and on how decisions affect risk management. This research combines several perspectives to show how executive decisions are made, how they are implemented, and how they affect risk management and how psychology of leadership impacts development of organizational risk culture.

1.3. Aim and Objectives of this Research

Aims:

- To Investigate the Influence of the Psychology of Leadership on Enterprise Risk Management;
- To develop a Psychology of Risk Leadership and ERM Implementation framework and provide academic and practitioner guidance on how the Psychology of Leadership influence ERM.

Objectives:

- To explore the various psychologies of leadership to understand if they provide insights into effective risk management;
- To analyse the psychological factors of leaders involved in decision making under conditions of risk and uncertainty;
- To examine the psychological factors whereby leaders can create an organizational culture of risk;
- To validate the framework, its potential benefits and limitation;
- To identify the key gaps in the literature related to psychology of leadership and effective ERM implementation.

1.4. Research Questions

- How does the psychology of leadership influence the ERM implementation?
- What are the psychological factors that impact decision-making processes under the condition of risk and uncertainty?
- What are the psychological factors that impact the formation of an organizational culture of risk?
- How effectively current ERM frameworks on considering psychology of leadership?

1.5. Research Contribution

This section indicates how this research makes several contributions to the body of knowledge on psychology of leadership and effective ERM implementation.

This research will indicate how the psychology of leadership impacts ERM implementation. This is also the main aim of this research. This research will explore those psychological dimensions of leadership that are related to enterprise / organizational risk. There may be many possible reasons for the failure of ERM programmes. This research will indicate how a failure of leadership measured in terms of poor decision making abilities and the inability to influence others in the organization to create an organizational culture of risk can also be a cause of ERM implementation failure. To highlight a failure of leadership as a key reason for the failure of ERM programmes will, it is hoped; sensitize leaders to the importance of understanding their roles and responsibilities as Board Members and the thought processes and resulting actions / behaviour related to ERM program implementation.

This research will benefit practitioners and researchers of psychology by throwing light on psychological processes involved under condition of risk. This research will also benefit those organizations who already have ERM programmes in place or who seek to effectively implement ERM programmes. Insofar as the implementation of ERM programmes is the responsibility of the leaders of an organization, this research will benefit those senior managers who form the Boards of their respective organizations. This research will provide insights as to why they think and act the way they do under condition of risk. In other words, it is hoped that the findings of this research will help leaders make decisions in an objective manner that minimizes risk and exploits opportunities as much as possible.

Since this research explores how leaders can influence others in the organization, it is hoped that this research will help leaders establish an organizational culture of risk that will lead to effective ERM implementation. This research will indicate how leaders can make other employees more aware of risk and develop more appetite and tolerance for risk. The psychological factors that can be leveraged to influence employees to implement those decisions related to risk management, taken by the board will also be identified.

This research will lay a foundation for interdisciplinary theory on risk leadership and effective ERM implementation. For example, the theory of risk management seems to introduce the bias that it is a mistake not to prepare for risk. There is a requirement to understand the context in which such a decision is taken by managers. This understanding of the context in which decision making occurs will provide further insights into the complexities of enterprise risk management. This research provides context and clarity that

will help to eliminate the bias of pre-judgement on managerial decisions taken under the condition of risk and uncertainty. This research, it is hoped, will consequently lead to the development of further topics and processes that extend studies on behavioural research in the critical areas of decision making under the condition of risk and leadership. In this thesis, behavioural psychology and the relationship between risk leadership traits and effective ERM implementation are synthesised. This study also yields insights into the complexities of human behaviour under the condition of risk and uncertainty, which will extend the study of leadership to the domain of ERM. Furthermore, this study will expand risk management research to an examination and understanding of the human-level influences that drive activities related to risk management.

1.6. Research methodology

This research adopts the interpretivist ideology, which prescribes that worldly phenomena are too complicated to be governed by definite rules and laws (Wegner, 2008). Consequently, the objective collection and analysis of information recommended by positivist philosophies is not deemed possible. Interpretivism allows for the interpretation of complex realities according to the understanding of the Researcher. It is context-specific and acknowledges that different scientific situations can be interpreted differently. In this research, the phenomena under observation is complex and multi-disciplinary, since it involves research into risk leadership traits, which is related to behavioural sciences and ERM, which is related to management sciences. Interpretivism involves the determination of the social phenomenon of the ways in which board directors make decisions and act under the condition of risk and uncertainty. Therefore, it is necessary to identify emerging patterns from several subjective opinions on the topic. Interpretivism is based on qualitative analysis, where the interview method, carried out with the use of a semi-structured questionnaire, is used to collect data from the respondents for analysis. According to Patton (2002), under the interpretivist paradigm, concepts and theories are used to formulate a framework that is then tested through the use of primary data. This philosophy helps in collecting comprehensive and extensive data about risk leadership with a significant emphasis on rich and complex data. Interpretivism was selected in this research as the most suitable philosophy for identifying methods of data collection, respondent selection and data analysis.

Creswell (1998) highlights the association between the interpretivist paradigm and the inductive research approach. The goal of inductive research is theoretical generalisation along with the formulation of hypotheses, postulates or conclusions. Inductive research begins with

specific observations, then proceeds to identify patterns, formulate hypotheses and, finally, draw conclusions. Inductive reasoning is usually associated with qualitative methods and is thus more applicable to the present research study than deductive reasoning. Deductive research, in contrast, is more concerned with the testing and validation of hypotheses. It adopts a top-down approach, wherein the Researcher begins with a theory, narrows it down to a specific hypothesis, collects data, and then analyses the data in order to either accept or reject the hypothesis. This causes the original theory to be confirmed or contested. Deductive research typically involves the use of quantitative methods (Patton, 2002). Since the current study deals with human decision making, the chosen methodology is qualitative in nature. This approach specifically questions the "what", "how" and "why" of board members' decision-making processes under the condition of risk and uncertainty.

Both primary and secondary data are utilised in this study. The secondary data is sourced from a variety of academic and empirical journal articles, books and professional accounts. The exploration of secondary data establishes a critical baseline for the development of a theoretical psychology leadership alignment framework through an in-depth literature review. The primary data was collected through an empirical investigation of the oral material collected through the qualitative research along with written data from the quantitative study. This primary data was collected from executive leadership and risk management professionals involved in ERM implementation from several organisations in Saudi Arabia. The primary data collection instrument was a questionnaire, administered through semi-structured interviews. Microsoft Excel was used to analyse the data using thematic analysis.

The research findings and analysis reported in Chapters 6 and 7 are linked to the conclusions (Chapter 8) of the review of existing academic and empirical research contributions, surveys and case studies to identify best practice in psychology leadership. Qualitative data are further examined for emerging themes, aspects of executive leadership and insights that indicate future developments and research recommendations. Quantitative data are also studied to assign rankings and weight to the qualitative responses. The research findings are analysed with regard to the reviewed literature (Chapters 2 and 3) and the empirical data obtained from research interviews and surveys conducted by the Researcher (Chapters 6 and 7).

1.7. Thesis outline

This thesis is presented in two main parts, reflecting the aforementioned distinctions between theoretical (theory-based) and practical (field) research. This thesis consists of eight chapters, including this chapter, and is structured as follows:

Chapter 1 provides the background to the research, the rationale and justification for conducting the research, as well as the aims, objectives and research questions. This chapter also outlines the main contributions of the research, establishes terms of reference and outlines the methodology, whilst offering contextual information on the impact of the factors involved in board members' decision making, associated problems and the reasons for choosing the research topic.

Chapter 2 presents the literature review, which analyses the processes of decision making under the condition of risk and uncertainty. It also examines the relevant literature on the nature of human behaviour when dealing with uncertainty and risk. Additionally, this chapter examines ERM systems and the different approaches taken to the evaluation of ERM systems, theories and related frameworks.

Chapter 3 presents the gap in the literature of risk leadership, which outline the research gaps that exist in the current literature regarding risk leadership in the ERM context. The aim of this research is to close these gaps.

Chapter 4 presents the theoretical research framework, reviews the literature concerning the psychological aspects of leadership and risk management frameworks, and presents the background to each framework whilst illustrating its relation to board members' insights on risk management.

Chapter 5 discusses the research methodology, research process, and the problems associated with the selection of appropriate research design and methods, whilst also outlining the specific data access and collection procedures used in this study.

Chapter 6 reports the analysis of data collected from the qualitative phase of the first phase of fieldwork (interviews).

Chapter 7 presents phase two of the research: indicates the results of the research survey conducted by the Researcher on 100 industry professionals from different organisations operating in the private sector in Saudi Arabia, wherein empirical data were collected through the use of a questionnaire survey. This chapter reports the analysis of quantitative data collected via questionnaire during this phase of the fieldwork.

Chapter 8 reports the discussions based on all key sources: the literature, interviews and questionnaire. This chapter presents the final significant psychological factors that impact

board members' decision making before proposing a research framework based on the theoretical framework and data analysis.

Chapter 9 summarises the research and its contribution to knowledge, theory and practice, drawing conclusions and offering a set of recommendations for future research.

Chapter 2 – Literature review

2.1. Introduction

In Chapter 1, it was found that effective ERM is based upon leadership ability in reference to decision making under the condition of risk and uncertainty, and upon leaders' ability to encourage acceptance and implementation of these decisions amongst lower-level managers. It is therefore important to understand the psychological processes that impact decision making under the condition of risk. The current chapter presents a review of the literature on decision-making processes under the condition of risk and uncertainty, along with an exploration of the literature regarding the various theories of leadership. The chapter begins with a discussion of leadership theories to highlight the key qualities that leaders possess, before moving onto explain the psychology of leadership in order to demonstrate the ways in which leaders can influence others. The psychology of decision making under the condition of risk is then discussed.

2.2 Psychological factors

The psychological factors that the literature indicates as impacting decision making under the condition of risk are mental protective frames, psychometric paradigms and bias. These factors will now be discussed in further detail.

2.2.1 Risk and mental protective frames

This section considers the human mental state or attitude regarding risk. According to Crouchy *et al.* (2006), exposure to risk has both physiological and psychological effects, which impact the decision-making capability of managers. Therefore, these factors should be considered in ERM cases wherein managers operate within a high-risk environment.

Apter (1992) points out that all humans approach risk in two different ways, based on two fundamentally differing perspectives of risk or danger. The first approach is a thrill-seeking perspective, where individuals perceive the excitement inherent in all risk. The other approach is that of anxiety, and occurs amongst those who seek predictability in all things. According to Dash (2006), both excitement and anxiety impact the human body in the same physiological way. This reaction to two differing states of mind is termed arousal and is caused by the body's autonomic nervous system, characterised by increased heartbeat, breathing, and perspiration rates. On the other hand, psychological responses to each approach differ: excitement brings pleasure, whilst anxiety does not. Apter (1992) points out

that, irrespective of the emotion, humans cannot be in an aroused state at all times. Figure 2-1 illustrates the relationship that exists between various states of arousal:

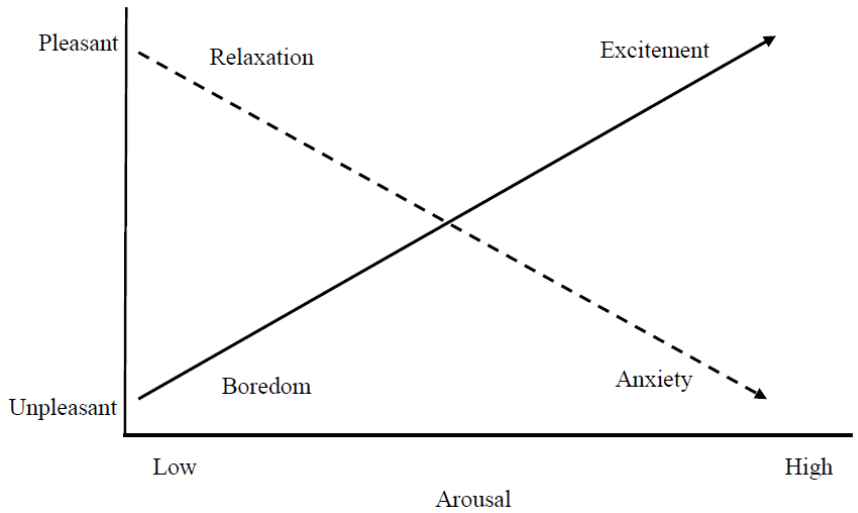

Figure 2-1 States of arousal

Source: Apter (1992)

The above graph demonstrates that depending on the mental state of the individual, all humans can switch from a state of boredom to excitement and from relaxation to anxiety. Eduljee (2000) points out that the states of boredom or relaxation represent the 'protective' frame whilst the excitement or anxiety states of mind fall under the 'risky' frame. There is a boundary between the two frames called the 'dangerous edge'. At this edge, the person encounters the emotion of 'risk-seeking' or 'avoidance'. Beyond the risky frame lies the 'trauma' zone where the possibility of danger or harm is greatest. Figure 2-2 illustrates the relationships between all three zones:

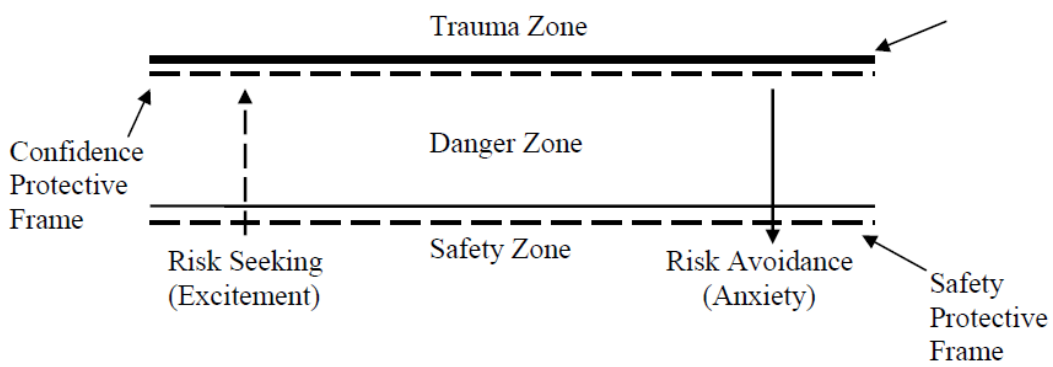

Figure 2-2 Frames of mind

Source: Barnabei (2008)

As shown in the above diagram, excitement-seeking individuals operate in the confidence (protective) frame, which allows them to seek out even extreme risk without becoming traumatised (Barnabei, 2008). For risk-avoidant (anxious) individuals, the state of comfort

and equilibrium exists only within the safety (protective) frame. Here, they are safe from both danger and the feeling of harm. Barnabei (2008) also proposes another protective frame known as the 'detachment' protective frame, which is situations outside of the three zones outlined above and exists as an independent entity. In this dimension, the individual, though exposed to risk, does not feel threatened, does not avoid anxiety and does not seek excitement. This dimension is illustrated in Figure 2-3:

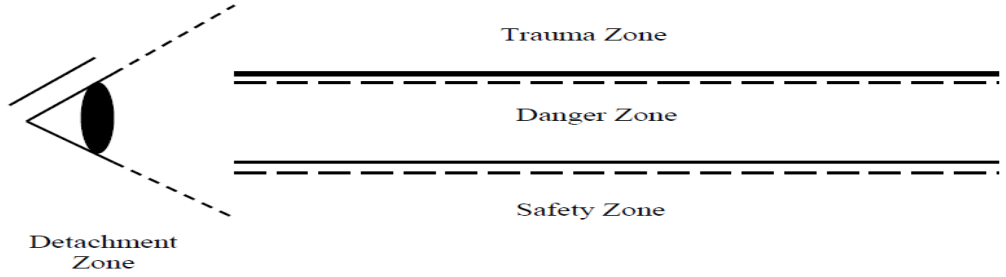

Figure 2-3 Detachment frame

Source: Barnabei (2008)

Barnabei (2008) points out that the detachment frame of mind is the best possible frame for evaluating risk, as it eliminates the subjectivity inherent in the other three frames. Due to the absence of emotion in the detachment zone, response to risk – such as decisions made – are not influenced by any emotions encountered in the other three zones. It is therefore possible to objectively evaluate the risky situations and make decisions accordingly when in the detached frame of mind.

It may be inferred here that excitement, anxiety and the four protective zones weigh heavily on decisions made in a risk-filled corporate context, such as in the case of ERM. Fox (2003) points out that physiological and psychological state of mind weigh most heavily on the evaluation of risk and decisions made. The ability to think rationally is dependent on mental states of mind, which cause the individual to either embrace risk or avoid uncertainty. These states of mind are in turn influenced by past experiences or former learning. It is argued that individuals can shift their preferred or dominant state of mind to approach the detachment zone even though they cannot control their biological responses to risk (Gephart, 2004). By developing the ability to switch between various mental states to a zone where the objective evaluation of risk is possible, it is possible to avoid missing opportunities caused by over-avoidance/anxiety and to avoid faulty decision-making due to excessive excitement-seeking.

2.2.2 Psychometric paradigm

Paradigms are popular viewpoints based on previous experience. Psychometric paradigms reflect the phenomenon wherein managers use the public perception of risk paradigms to

arrive at decisions, especially during times of uncertainty. According to Breakwell (2007), public perception is relevant to decision making as it influences the individual's attitude towards risk. Derby and Keeney (2003) also state that risk is subjectively perceived by the individual, who is always subject to psychological, societal and cultural factors. However, it has been argued that since popular or public opinions of risk and hazards are often distorted, this is a dangerous mode through which to engage in risk perception and decision making (Lichtenstein *et al.*, 2003). Goitein and Bond (2005), state that perception of risk amongst managers is more influenced by these paradigms, but that it should be influenced more so by psychometrics, which entails the objective evaluation of risk based on statistical data, probability and impact analysis. Derby and Keeney (2003) further point out that public perception of risk can be faulty since it is based on the three factors of voluntariness, awareness and fear. Voluntariness refers to the ability of the individual to confront and escape the risk. Familiarity or accurate assessment of the risk is dependent on the amount of information that lies with the individual, whilst fear refers to the 'dread factor' that impacts an individual's ability to rationally consider the risk.

The literature indicates that decision making is heavily influenced by the public perception of risk, which can lead to the wrong decisions being made. This is most readily demonstrated by the Y2K situation of 2000. Due to public perception that the turn of the millennium would impact computer systems and their ability to function normally, organisations spent large sums of money in an attempt to prevent this issue from occurring. However, the year 2000 passed with no major impact on computer systems. Similarly, the public perception of airline travel is that it is inherently unsafe, causing airline companies to invest heavily in eliminating this perception. In reality, airline travel is the safest of all long haul modes of transport. The inferences here are that in an ERM context, leaders should not get swayed by the public perception of risk, but instead rely on objective methods of assessing the risk.

2.2.3 Bias and decision making

This section discusses why individuals do not, in fact, make rational decisions as presumed under the empiricist/rationalist frameworks of decision making that current ERM decision-making process are based upon. According to Belsky and Gilovich (1999), microeconomic theory proposes that individuals always act rationally and make self-interested decisions. In other words, it is asserted that individuals will not act erroneously, since to do so would harm their own self-interest. The supposition here is that decision-making processes are driven by the objective of obtaining the highest personal utility for the individual. Bildung (2013)

summarises this view by stating that all human action is motivated by the realisation of the highest economic good and hence all individuals act according to rational principles that achieve the greatest personal utility.

However, the fact that decisions do not always achieve economic success or the highest good is a common human experience. On the contrary, in fact: decisions can result in economic ruin. Camerer and Loewenstein (2003) account for this by pointing out that microeconomic theory does not account for actual decision-making processes under the condition of uncertainty. Thus, humans often fail to make rational choices even if they ought to. In this context, Kahneman and Tversky (2009) suggest that human decision making under the condition of risk is based on intuition and personal information rather than on information or data, and that individuals cannot deal with uncertainty. This means that individuals have a limited ability to predict future events where the outcomes are uncertain and to rationally analyse information to make informed decisions.

Kahnemann (2003) points out that in order to make sense out of perceived situations that may be ambiguous, decision making is influenced by the unconscious mind, which in turn is influenced by emotions and society. Both of these factors point to the protective frames and psychometric paradigms as discussed in Sections 2.2 and 2.3. On this topic, Hartman *et al.* (2012) state that both emotion and societal opinion combine to form misconceptions called 'bias' that impact the individual's ability to judge events and make decisions rationally. In other words, bias is a deviation from the rational processes, which interferes with human ability to think and behave rationally and impartially. Barone-Adesi *et al.* (2012) termed bias as the 'human factors' that pre-empt effective decision making, whilst Kahneman and Tversky (2009) indicate that bias occurs due to heuristics or processes of thinking under the condition of risk. The following is an outline of the various biases that exist and their respective impacts on decision making.

Anchoring, also known as the insufficient adjustment bias is based on the assertion that different solutions to a given problem occur due to variations in the starting points to its solution. Here, bias is thought to stem from the differences in the starting point or initial value results (Kahneman and Tversky, 2009). Morgan *et al.* (2002) explain that anchoring bias primarily occurs when decision makers have limited information, resulting in inadequate calculations that lead to insufficient adjustment to the problem or risk.

Representativeness is a bias that occurs due to stereotypical thinking and the use of intuition, popular opinion and emotion in decision making (Kahneman and Tversky, 2009). This bias causes the potential for events that are totally unrelated to each other to be

considered representative of one another. According to Olson and Wu (2008), this approach to decision making results in serious errors, as representativeness cannot account for the true factors that should impact decision making. Palmer and Dunford (2008) also state that the results of representativeness include faulty planning, ambiguities in the relationship between risk and return, over-reliance on smaller sample sizes of opinion, and the overwhelming influence of emotion on decision making.

Availability bias occurs from the decision maker's familiarity with an event occurring, or the popularity of the event's nature (Kahneman and Tversky, 2009). Also known as the bias of salience, availability bias occurs due to the greater impact of first-hand witnesses of an event on the decision maker, making the event easily retrievable. Peters (2003) termed this bias the retrievability of events or the heuristic of familiarity, where it is assumed that information that is readily available and also statistically valid. Dickinson (2005) indicates that this type of bias results in an inability to predict events, as well as inaccurate calculations, planning based on biased data, and overconfidence in decision making.

Confirmation bias occurs when decisions are made on the basis of information in accordance with the decision maker's own perspective, ignoring information that points to a contrary view (Easterby-Smith *et al.*, 2009). It is also called supportive evidence bias, this type of bias results in potential error due to the confusion between data and evidence.

Conjunction bias also known as baseline neglect and it occurs when decision makers overestimate the probability of occurrence of conjunctive events whilst underestimating the probability of occurrence of disjunctive events (Dash, 2006). These results in decisions made on the basis of inadequate planning and overconfidence.

Framing bias occurs when decisions are made on the basis of single events, risks or problems that are divorced from their underlying contexts. According to Shefrin (2007), framing results in decisions that reflect possible outcomes framed within a singular context and neglects the full scope of an event or risk. This has an impact on the decision's quality and accuracy (Goto, 2007).

Herding refers to the act of decision-making based on popular opinion or crowd sentiment, resulting in a subjective decision being made and a failure to account for varying opinions and inadequate planning (Kahneman and Tversky, 2009).

Illusion of control refers to the decision maker's overestimation of their ability to influence events, resulting in potentially erroneous decisions being made.

Intertemporal choice is based on the discounted utility framework. Here, the relative value of an opportunity is attributed to perceptions of immediate benefit. This results in short-sighted decisions that can have long-term detrimental impacts (George 2007).

Loss aversion bias results in greater value being attributed to the possibility of loss than to gain, leading to risk-avoidance behaviour and the failure to leverage potentially big opportunities (Yechiam and Hickman 2013).

Mental accounting bias also results from risk-averse behaviour that attributes too much risk to an event (Thayer and Richard H. 1999). This results in the overestimation of risks and the failure to leverage big opportunities.

Over-optimism bias refers to the overestimation of the probability that a positive event will be experienced over a negative event, and a lack of objectivity that causes a risk opportunity to be positively evaluated to an unreasonable degree (O'Sullivan and Owen P. 2015). This results in an underestimation of the true nature of risks.

Overconfidence bias occurs due to a faulty perception of the decision maker's knowledge and abilities, which can lead to an underestimation of the impact of risk (Koriat *et al.*, 2008). According to Besharov (2004), this type of bias refers to the overestimation of one's own ability and leads to the illusion of control whilst neglecting the possibility of human error.

Status quo bias arises out of the tendency to maintain the status quo in order to avoid the possibility of loss. This is also known as the sunk cost fallacy and results in over-attachment to initial investments, cost accumulation, and the possible sale of higher-value assets whilst retaining securities that offer diminishing returns.

The study of bias in the context of leadership in ERM processes aims to understand how human factors interfere with effective decision making and the consequent management of risks. Hunt (2003) asserts that the decision-making process is shaped by human choice, which is influenced by human likes, dislikes, attitudes and judgement Montibeller and Durbach (2013) point out that due to availability bias, for instance, CEOs with more experience in financial management will be more liable to take on the risk of higher debt than those with less experience. The study of human factors is necessary for creating self-awareness of the cognitive biases that can exist within senior managers. This can highlight which factors operate, which have been ignored, and how these factors impact failure and losses. This understanding allows for the proposal of suitable mitigation techniques for overcoming bias.

2.3 The 'other' centricity of the new psychology of leadership

The ability to make rational decisions in an atmosphere of risk and uncertainty, which represents the ERM context, distinguishes risk leadership from conventional leadership (Ulrey and Sargent 2013). The literature indicates that leadership is no longer an individualistic paradigm but, rather, a collective one wherein leaders do not impose their will but instead manage to secure voluntary compliance. This is the essence of new leadership, which in an ERM context means getting other board leaders and lower management echelons to accept the decisions made and to act on those decisions in order to effectively counter risks and leverage opportunities.

2.3.1 The old psychology of leadership

Traditional leadership psychology has always focussed on great individuals and their personality traits. Pearce (2004) agrees that effective leadership has long been referred to as the ability to influence and motivate others to work towards the achievement of a common goal, but point outs out that the psychology of leadership has also always been extremely individualistic and fixated on the nature, qualities or personalities of great leaders throughout history. These individuals are therefore perceived as possessing a distinctive psychological profile that inherently sets them apart from others. Huse (2005) termed this as the psychology of the 'great man', which forms the cornerstone of popular comprehension of the psychology of leadership.

Kozlowski and Bell (2003) corroborate these views, pointing out that great leaders have distinctive and exceptional traits and attributes that qualify them for high levels of responsibility, office, admiration and respect. In other words, leaders are inherently superior to all others because they are 'born' great: they possess innate characteristics that set them apart.

The specific qualities possessed by all great leaders are outlined in various works within the existing body of literature. COSO (2004), for instance, suggests that leaders are quick to learn, possess a good memory, are brave, broadminded and have both physical presence and strength. Bammems *et al.* (2008) also state that great leaders are decisive, possess insight, imagination and intelligence. The literature is unanimous that all leaders possess the special quality, charisma. Charisma has been defined as a specific quality that makes a person stand out from all others (Daily *et al.*, 2003; Gabrielsson *et al.*, 2007). It refers to specific powers and qualities that uniquely identify a standout leader. The conventional understanding of charisma is that it is something special that all leaders inherently possess, which allows them to formulate a vision and motivate others to follow them.

The traditional framework of leadership also focusses on dominant personality traits that characterise leaders. According to Stodgill (1994), these traits include intelligence, alertness, mental capacity, the drive to achieve, knowledge, responsibility-taking, dependence, initiative, sociability, participation, high levels of popularity, and elevated socioeconomic status. Mann (1995) classifies all of the various personality characteristics of leadership into seven meaningful clusters, or dimensions: intelligence, adjustment, extroversion, sensitivity, masculinity, conservatism, and dominance. Again, it can be noted that the analysis of leadership is at the individual level, and refers to the specific personality characteristics that distinguish the leader from a larger mass of people.

2.3.2 Critique of the old psychology of leadership

The shifts in emphasis between the old and new psychologies of leadership are encapsulated by Drucker (1992), who states that effective leaders never say or think 'I', but rather place the emphasis on their teams. Effective leaders recognise their role in ensuring that the team delivers on the given task, and they are able to identify strongly both with this task and with their team of people. Bligh *et al.* (2006) corroborates this view by stating that leadership is not about telling or getting people to do things, but about making them *want* to do things. Freidrich *et al.* (2009) state that leadership shapes belief, desire and priorities, and that it is more about influencing others rather than just ensuring compliance. The implication here is that leadership is about more than just individual qualities and personality traits; because these factors do not necessarily secure the voluntary compliance of others, nor do they necessarily motivate or create passion amongst team members. Hillman and Dalziel (2003) point out that the individualistic frameworks of leadership hint at an imposition of will and/or incentivisation to secure compliance. However, since these means cannot influence others through the heart and mind, these means are now considered indicators of leadership failure even if they achieve compliance. According to Minchilli *et al.* (2009), by developing the capacity to influence others, future persuasion becomes easier. It is in this sense that leadership may be considered self-regenerating. Cialdini (2001) states that if the new understanding of leadership emphasises the processes of influence it is necessary to understand the mental processes that cause followers to be influenced by their leaders. Modern leaders motivate people to achieve a common goal, and it is therefore necessary to understand the mental 'glue' that merges leaders with their followers during this process, the ways in which leaders secure commitment from their followers, and what encourages and drives them to move together in one particular direction.

The point that older frameworks of leadership emphasise qualities, traits and characteristics only at the individual or personal level has been well made. For instance, Hendry (2002) argues that conventional frameworks of leadership are extremely static and that they consider the individual as a static and isolated entity, completely divorced from context, situation and even from his or her followers. These frameworks cannot explain variations in leadership that occur across time and space. Pick (2009) opines that personality frameworks of leadership consider leaders to possess fixed and finite amounts of several common attributes, such as intelligence and foresight; whereas, in reality, individuals do not become leaders because they possess a combination of qualities, but because this collection of qualities match or are in some way related to the aspirations, goals and characteristics of their followers. Thus, it is implied that leadership is a dynamic concept that should be considered in relation to the individual's surroundings, followers and social context.

This situational and social perspective of leadership was also emphasised by Stodgill (1994) and Mann (1995), who found that the various qualities of leadership they summarised were important only in relation to the context in which the various individuals operated in. That is, different situations and contexts call for a different form of the same attributes, and leadership cannot be studied in isolation from the context in which it is required. Stodgill (1994) also adds that individuals can raise their leadership status without being in possession of certain desirable qualities in excess. Therefore, whilst leaders may be likely to be somewhat more intelligent than followers, this difference should not be too vast if followers are to be influenced effectively. Accordingly, it is also argued that leadership research should incorporate the leader's social environment in addition to individual-level factors (Stodgill, 1994). The implication here is that leadership is always tied to context, with leaders' personalities being a product of the context in which they live and operate.

Furthermore, Reynolds *et al.* (2006) point out that leadership is not a completely psychological phenomenon, and that psychology alone cannot be used to explain leadership. This contravenes the theory that leaders are born and that leadership is an exclusively inborn trait or quality. Israel and Tajfel (1972) stated that the psychology of leadership should go beyond the mind to focus on the features of society that impact leaders, what they think, and what they do. Zaccaro *et al.* (2001) point out that the individualistic consideration of leadership implies that the vast majority of people lack leadership qualities, and that only a few individuals possess the special qualities that can bring about social progress. This, therefore, makes leadership an 'elitist' quality. Gemmill and Oakley (1992) argue that the

traditional view of leadership makes for passive followers who are deterred from aspiring to positions of leadership themselves and who, instead, resign themselves to being 'lowly' followers. Ashforth and Anand (2003) indicate that this, in turn, paves the way for corruption amongst senior leaders in a corporate context. Nielsen (2009) asserts that conventional frameworks of leadership are rigidly hierarchal, creating the perception that leaders are superior to their followers and engendering a lack of transparency, distrust, corruption, and the sacrifice the rights of the vast majority for the benefit of the few.

Mintzerberg (2004) summarises the worldview of conventional leadership as follows: (i) leaders are more important than their followers, in business; (ii) the importance awarded to a leader is dependent on his/her seniority; (iii) leaders pass down decisions for implementation; (iv) leaders should protect their ideas and authority against resistance from their followers; (v) leaders are responsible for the allocation of resources on the basis of established facts; (vi) leaders alone deserve to be rewarded; and (vii) leadership refers to the subjugation of followers to the leader's will. Bennis (2003) criticises this framework for treating leadership as a noun, and as something that the leader owns rather than as part of a process in which they participate. It is also argued that the importance and role of followers in the leadership process is entirely eliminated under this perspective, when leadership cannot in fact exist without followers and the labour they provide (Rost, 2008). Rather than treating activity and inclusive and leadership as personal or individualised, new leadership paradigms consider activity as exclusive and leadership as a social, collective phenomenon (Payne *et al.*, 2009). In other words, any analysis of leadership that considers only the leaders is a faulty analysis.

2.3.3 Key dimensions of the new psychology of leadership

It may be inferred that the individualistic framework of leadership has come under attack, and that leadership no longer refers to a unique psychology but rather to the leader's capacity to embrace and promote a psychology that may be shared with their followers. This new psychology of leadership places more importance on the 'We-ness' of the leader and their team rather than on the 'I-ness' of the leader alone (Pearce, 2004). Thus, leadership is a group process, wherein leaders and followers work together in a shared effort, rather than being an individual process involving independent thought and action. Leadership therefore represents the ability to influence others to contribute to those processes that translate ideas into reality. A psychological connection has to be forged between leaders and their acolytes, where followers are enthused to follow leaders who are perceived to be 'one of us' compared to 'one of them' or 'only for themselves' (Huse, 2007). In this sense, charisma is not just

something that leaders have, but something that is conferred upon them by their followers. Charisma is therefore related to the way in which followers come to see leaders as part of a common group, and it has little to do with the individuality of the leader. It is, in fact, dependent on whether leaders are perceived to be part of the team, as team players, and as being able to further the achievement of a common goal.

Given the above points, it is now possible to move towards a more contemporarily-relevant approach to the psychology of leadership. The new psychology of leadership needs to be non-individualistic and to consider all of the followers and lower echelons of management who convert ideas into action. Here, Turner and Oakes (1986) state that this does not denigrate the importance of the individual leader, but that it is also important to understand how the psychology of the individual called up on to lead the group is transformed when they participate in shared activity. Reicher *et al.* (2005) also points out that leaders should be perceived to be more of an 'in-group' rather than an 'out of group' person, and should be considered to represent the interests of the 'in-group' collectively. What is implied here is that leaders should be seen as advancing the interest of their followers, and not simply 'feathering their own nests' or serving the interests of other groups. It is only when leaders are perceived to promote the interests of their followers that the latter will be influenced to co-operate wholeheartedly with the group effort of turning vision into reality.

Secondly, leaders cannot be 'men for all seasons', in that they will not be equally effective at all times in all situations. Stodgill (1994) acknowledged this reality when he stated that the influence exerted by leaders is context-sensitive, and this explains why leaders succeed in some situations whilst failing in others. The implication here is that in order to lead their team to achieve the desired outcome, leaders should take the context into consideration.

Thirdly, the psychology of leadership should be sensitive to perspective. Straw (1991) states that leaders should be able to craft a vision of 'we' or 'us'; that is, leaders do not just take forward pre-existing identities, but are instead actively involved in creating a common perception of 'who we are'. Leaders' ability to influence followers is dependent on their ability to represent themselves in a way that matches their followers' understanding of the group. The projects they head should reflect the values, priorities and aspirations of the group. In this sense, leaders should essentially become 'entrepreneurs' of identity.

Fourthly, the concept of charisma should be redefined as the ability to create human experiences that cause followers to feel that they are significant rather than being considered

a special quality possessed at the leader level. Charisma ensures that ideas and values are embedded in reality and the way in which that reality gets constituted by the group. Through charisma, leaders influence groups to realise common goals and help to create an environment in which their values are expressed and potential gets actualised.

2.4 The psychology of developing risk culture

This section of the thesis discusses the various psychological factors that should be considered by senior leaders in relation to the development of organisational risk culture.

2.4.1 The psychology of sensemaking under the condition of risk

According to Miller (1994), the world can be understood by bracketing experiences into comprehensive units. Mintzberg *et al.* (2008) define sensemaking as the process through which meaning is derived out of ambiguous situations and experiences. According to Klein *et al.* (2007), sensemaking refers to the processes of cognition wherein attempts are made to understand situations that are new and unfamiliar. This differs from situational assessment and awareness, and instead refers to the processes of constructing meaning out of new events. This is consistent with the views of Weick (2001), who states that sensemaking is about deriving, constructing and interpreting meanings to understand the context that is being experienced. Sensemaking effectively converts unfamiliar events into solvable problems (Schon, 2003). This process is termed ‘problem setting’, which refers to the interactive processes through which events are converted into problems and the solutions identified to these problems.

In an ERM context, sensemaking is relevant as there is a need to understand how leaders make sense or derive meaning/understand current or potential risky situations that, by their very nature, are new, unfamiliar and ambiguous. This is highlighted in the idea that managers serve as both the ‘makers’ and ‘givers’ of sense in the context of risk (Maitlis and Lawrence, 2007). Leaders are makers because their main responsibility is to interpret the risky situation and derive meaning from it, and they are givers because they also have to disseminate these meanings to others in the organisation and guide them to make sense out of risky situations.

According to Langer and Moldoveanu (2000), people entrusted with risk management use processes of reflection and interpretation to continually change the framework used to derive meaning out of risky situations. In this context, sensemaking is a dynamic process. Klinke and Renn (2005) state that sensemaking is not an isolated exercise, but takes place in relation to the social, cultural and political structures of the business entity. This is the context in

which sensemaking occurs. Weick and Sutcliffe (2001) point out that decision making under the condition of risk is a process of negotiation that involves intra/interpersonal interactions, dialogue, communication and feedback. This 'group' approach to sensemaking is corroborated by Nutt (2003), who points out that sensemaking and consequent decision making processes have to be participative and discursive. Fard and Rostamy (2009) also add that risk managers utilise data gathered through face-to-face interaction in order to avoid confusion. Discussion about, and the participative interpretation of, this data leads to the identification of critical cues, and the process of participative meaning-making is important in addressing the complexities of risk. These views are consistent with the new psychology of leadership's emphasis on group participation. This means that deriving meaning out of risky situations cannot and should not take place at only the individual level but also in consultation with 'others' in the organisation.

Mezirow (2009), however, makes the point that participation and discourse do not automatically guarantee any action-oriented meaning-making. This depends on the nature and the quality of the discourse or learning that is taking place. Beer *et al.* (2005) state that the learning derived should contextually fit the event that is taking place. Therefore, learning or discourse should be 'transformative' in nature so as to develop participants' dynamic capabilities to objectively derive the correct meaning from risky events (Gergen, 2009). Argyris (2001) explains the nature of transformative discourse by highlighting the concept of 'relational responsibility'. This process involves the mutual of organization of one another, where participants involved in sensemaking processes have to reflect at both the individual and collective levels. According to Gergen (2009), this process places importance on self-expression, creates an environment of trust, and gives participants a chance to state their views. These are relevant for the purposes of productive outcomes from the negotiation process.

Lahey and Kegan (2009) summarised these views by pointing out that transformative learning facilitates critical reflection processes that result productive and relevant insights that can be actioned through processes of interaction and communication. This is particularly relevant in risk management, which is about control. Maitlis (2005) highlights this point, stating that business entities control their members through supervision and the processes of sensemaking that lead to the formulation of rules, regulations, and comprehensive premises.

In the context of ERM, the processes through which meaningful and actionable insights are derived from risky situations are highly pertinent. Kegan (2009) asserts that in order to derive meaning and achieve control, leaders mostly engage in defensive routines and incompetent

processes – not because they do not possess knowledge or because they lack skills, but because they are not aware of their own patterns of behaviour nor how their behaviour impacts others. Argyris (2001) states that it is important to understand how symbolic realities of real-world situations are constructed in order to appropriately and correctly manage realities of risk. Nathan (2004) also points out those deficiencies in the sensemaking of risk results in compromised decision making. Reason (1990) indicates that human error in decision making is not only related to lapses in skills, rules and knowledge, but is due to faulty interactive processes. It might be inferred that since effective decision making depends more so on interpretive processes than procedure when dealing with risk, current deterministic decision-making processes limit effective decision making in the ERM context. Given that ERM frameworks are essentially tools for sensemaking, their efficacy will depend on how they are deployed by leaders in real-life risk situations to guide decision making, and whether or not they use participative processes at both the individual and organisational levels. Sensemaking thus becomes a process that takes into account worldviews and contexts that reveal risk decision-making processes at the organisational level. On this topic, Weick (2001) argues that mature sensemaking capabilities should be built if efficacious risk management is to be realised. Klein (2007) suggests that such sensemaking processes focus attention on real issues, make the nature and reality of risk confronting the organisation transparent, facilitate remedial action since people only consider those things that they can comprehend, and ultimately influence both goal setting and risk coping strategies. The implication here is that sensemaking, in the ERM context, will be efficacious only if it includes learning at both the individual and collective levels. Such a process develops decision-making abilities at the individual level (both leaders and others) and develops the ERM capability of the organisation.

2.4.2 The psychology of action/response under the condition of risk

This section of the thesis discusses the ways in which sensemaking influences responses and actions under the condition of risk. Weick (2001) stated that sensemaking results in the organisation of cues into frameworks that are selected from the event that is occurring or is predicted will occur. These cues are enlarged through sensemaking processes into a framework that is comprehensive, can be interpreted, and gives cognisable meaning. This occurs through a discursive process between leaders and others and involves conflict, discovery, construction, interpreting and describing. Klein *et al.* (2007) point out that the outcome of such processes is not necessarily action and can be the realisation that action

should not be taken. That is, sensemaking refers to processes of constant framing and reframing. It involves putting data into a framework that is constantly filtered, tested, interpreted, improved and Adopted in accordance with newer meanings derived through discursive processes. This process of constructing and reconstructing data occurs at both the individual and collective levels within the organisation.

However, risk decision making is more than just the interpretation and formulation of meaning through sensemaking. Dutton and Jackson (2008) pointed out that is also related to the methods of generating insights and its attendant constraints and possibilities. It is argued that only things that people perceive to be within their control and possible to take action on are thought of as sensible (Dutton and Jackson, 2008). On this topic, Smirchich and Stubbart (2005) state that the way in which situations are labelled (as the outcome of sensemaking) evokes an action or response. Sensemaking creates symbolic realities out of risky situations, which the organisation then uses to cope with that situation. Ashby (2006) highlights a new point in that sensemaking is in turn shaped by organisational identity. That is a sense of identity moderates and shapes responses of the organisation to identified risks. Furthermore, the organisation's self-representation – meaning, that which the organisation represents – determines the meaning that a risk will have to the organisation. It also refers to what the organisation becomes as it deals with the risky situation. This is consistent with the new psychology of leadership, where leaders are called upon to define organisational identity, as discussed in Section 2.3. The implication here is that the more a leader is able to define the identity of the organisation for his/her followers, the more meaning can be extracted from a risky situation and the fewer surprises there will be to cope with. Weick and Sutcliffe (2001) term this phenomenon 'anticipatory risk awareness'.

Omodei (2005) points out a critical shortcoming of modern data-driven risk management systems, in that such systems lead to information overload and the deterioration of decision making. Instead, Shanteau (2002) suggests that what is required is values, priorities and clarities on preferences that define what is most important and relevant to the organisation. Identifying and defining values and priorities form the core tasks of leadership, which is no longer simply related to the skill to decode and make sense of data. Weick (2001) points out that such leadership results in order, transparency, reasonability, coherence, plausibility, pragmatism and rationality throughout the organisation, which in turn makes the organisation more resilient to the occurrence of risk.

Thus, it may be inferred that participative discourse, which results in greater understanding and rational decision making, is not the only factor involved in risk leadership. Indeed,

Nathan (2004) asserts that risk management is also about facilitating others to integrate facts and conjectures derived from the analysis of a situation; to make the connection between observation and inference; to explain, diagnose, guide, and develop new routines of action; or to change existing action routines to better deal with risky situations. Weick (2001) indicates that all of this should be the task of the risk leader, who not only 'sees' problems but also understand them, and then explains the decisions to others along with an explanation of what actions these decisions can be translated into.

Leadership in risk decision-making is therefore also associated with getting others to commit to act, which includes making judgements, choices and risk-framing organisational design. The act of risk-framing organisational design refers to the process of assessing risk situations in order to construct a framework or framework that can be understood, interpreted and shaped through subjective meanings. Morgan *et al.* (2002) indicate that risk-framing organisational design refers to the process of assessing risk situations in order to construction of a framework or framework that can be understood, interpreted and to which subjective meanings can be introduced. According to Breakwell (2001), proficiency in sensemaking, decision making and organisational design are core competencies that need to be nurtured explicitly by leaders. According to Weick (2001), there are seven key elements of sensemaking that should be incorporated into organisational design. These include context, identity, hindsight, important clues, resilience, reasonability and actionability. Weick (2001) states that if leaders of business entities can develop an organisational framework of risk decision-making that incorporates these seven elements, they will be better able to create and influence others with a sense of what are they are going to face. Conversely, risk management ability will be compromised if the organisational design framework reduces any of these elements or undermines them in some way. In light of this, March (2008) formulated a test to determine whether an organisation incorporates a sensemaking-based risk assessment framework. This test measures properties such as "encouragement given to conversation", "inculcating others with a distinct sense of what they are and what the organization represents", "preservation of data and effective utilization of that data", "cue management", "resilience in the face of interruptions", "encouraging others to accumulate and interact about risk events", and "encouraging action".

According to Stubbart (2005), risk decision-makers should also understand the concepts of risk perception and risk judgement. Risk perception is derived from the environment, organisational processes, structure and individual disposition. Risk judgement impacts behaviour and the way in which risk is treated. Smirchich (2008) indicates that individuals

use their imaginations to construct a symbolic reality of an actual reality such as a risky situation. Unless risk managers ascribe meaning to a risky event, it is rendered meaningless despite being existing independently and in reality. Smirchich (2008) developed a threefold classification of risk conception in the business or corporate environment. These include objective, subjective and enacted views. Objective and subjective views both assume that there exists a material world, and both views consider the cause-and-effect relationship between business entities and the business environment.

From the decision maker's perspective, that which is perceived is reality (Langer, 2003). From a subjective perspective, the decision maker has limited rationality (Simon, 1955), but from an objective perspective, the decision maker is completely rational (Simon, 1955). According to the enacted view, attributing meaning to an event results in the construction of a symbolic world. This attribution is performed through processes of negotiation between leaders, others and the identified risk. Breakwell (2001) termed this separation between the material and symbolic worlds as being in line with the conceptualisation of risk as a socially-constructed entity. Here, Rasmussen and Borch (2013) point out that the danger of the current methods of viewing risk is that subjective and objective views are considered to be the same as the socially constructed view. This takes risk away from the realm of reality to that of conjecture, supposition and inference (Taylor and Zinn, 2006).

These views of risk perception are important in an ERM context since they provide leaders with insights to the manifold ways in which risk is constructed and understood. Armor and Taylor (2002) state that from the ERM perspective, it is not pertinent to debate over reality versus illusion, but to understand the differences and the connection between the actuality and the symbolism behind risk sensemaking and decision making in a risky environment. It is necessary to understand how risk managers view risk realities as being material and concerted or imagined, symbolic and constructed, as the product of such perception leads to a response or action. Risks that are expected to occur in the future take the form of prophecy and expectation and are themselves largely constructed (Langer and Moldoveanu, 2000). In this context, Atkins (2008) states that decision makers, in their role as makers and givers of sense, need to understand all of the aforementioned factors that lead to their conception and interpretation of risk and prepare to respond appropriately.

It may be concluded here that several arbitrary perceptions get constructed about a particular risky situation. These perceptions may or may not reflect reality, as they are subjectively constructed. The more leaders take into consideration the views of others and construct their own perception of risk, the closer that perception will match the reality of that risk.

Otherwise, the conceptualisation of risk need not reflect the reality of risk. What is important is that risk managers understand the reality of this fact, since this is how they derive meaning and make decisions pertaining to that risky situation.

2.4.3 The impact of mental world views on risk meaning and action

Much of the existing literature supports the notion that individuals base their understanding of risk on what is meaningful and important to them. Smirchich and Stubbart (2005) point out that an individual's understanding of risk is, in turn, impacted by their personal beliefs and assumptions, which together form their mental worldview within a particular time and space. According to Lipshitz *et al.* (2007), this worldview influences the construction of risky situations, which then determines the meaning, purpose and relevance of actions taken. This point is in accordance with Senge *et al.'s* (2004) view that people ascribe meaning to a situation depending on their experiences of the world and what they believe in. Figure 2-4 shows the ladder of inference, which lists the inferential steps of sensemaking that precede action:

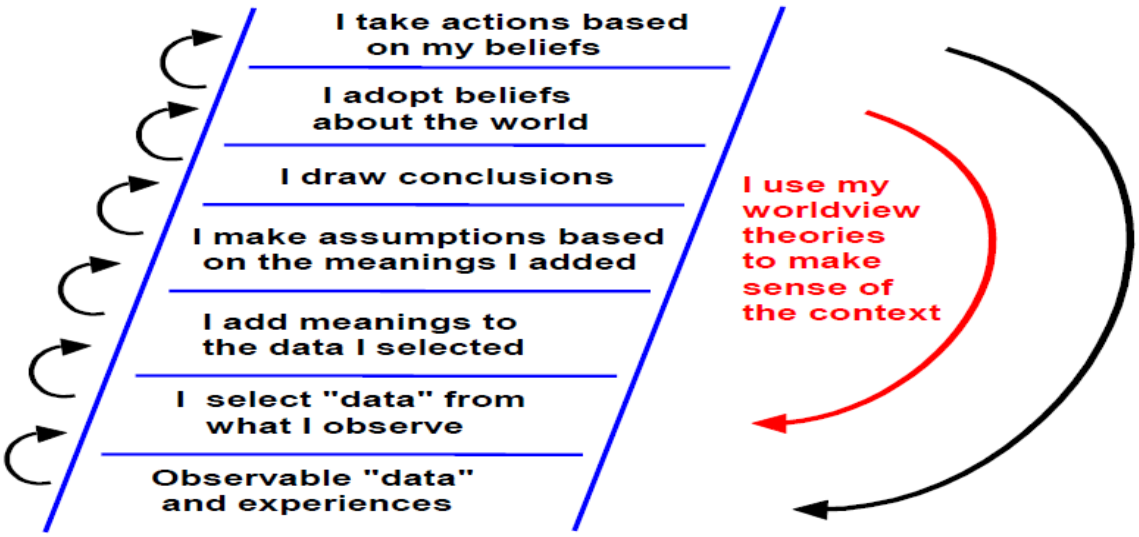

Figure 2-4 Ladder of inference

Source: Argyris (1990)

Figure 2-4 demonstrates that worldviews influence every step of the response to a particular situation, from observing the situation, gathering data and ascribing meaning to responding based on that meaning. As Argyris (1990) points out, there is therefore an interconnected relationship between the individual's worldview, the way in which they make sense of a situation, and their behaviour. According to Koltko (2004), worldviews refer to the ways in which an individual describes the world in terms of what is and what should be. Worldviews

refer to the beliefs, inferences and restrictive statements about what exists and what does not exist, what events are good or bad, and what attitudes, goals, actions and relationships are desirable or undesirable. Koltko (2004) further points out that worldviews demonstrate what can be known about the world, how it can be know and what can be done. A worldview defines which life goals ought to be pursued along with assumptions that may or may not be provable but nonetheless provide a foundation for other views and perspectives within a particular system of beliefs.

Slovic (2000) adds that the worldview construction consists of: (i) existential beliefs, which may be true or false; (ii) evaluative beliefs, which determine whether something is good or bad; and (iii) prescriptive beliefs or value systems, which determine the desirability of a particular course of action. It may be inferred that worldviews shape an individual's views of the world and of society, and that they guide responses to complicated situations. Worldviews therefore determine an individual's attitude towards, and perception of, risks. Rivera (2004) corroborates this point, stating that without a worldview, it is not possible to interpret realities about the world, since worldviews are filters through which realities are perceived, constructed and comprehended. Koltko (2004) further states that worldviews are an integral part of an individual's psychology and, hence, influence cognition and behaviour. Worldviews are aspects of identity that develop over time as the individual interacts with society. They therefore reflect a culture that becomes internalised by the individual. Figure 2-5 summarises the notion that self-comprises both acting and experiencing self.

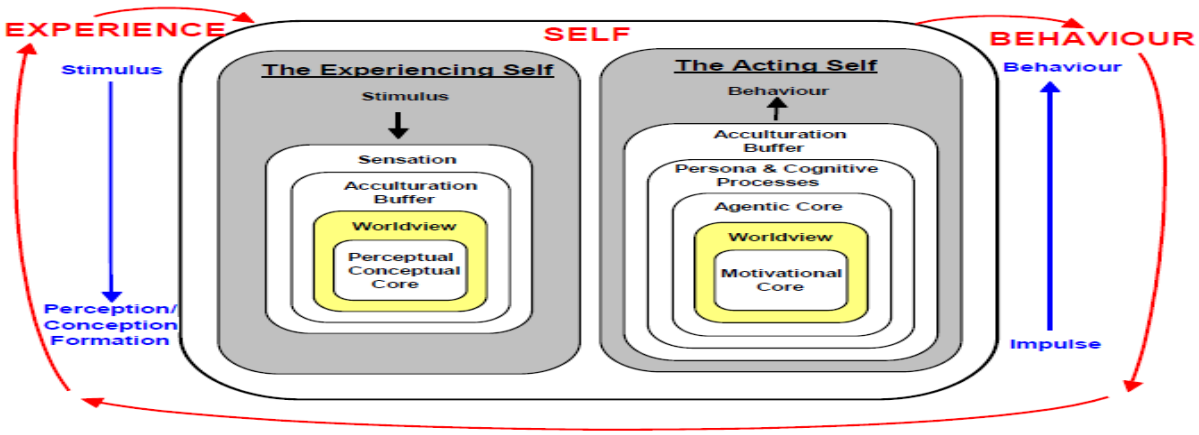

Figure 2-5 Worldviews and their impact on the construction of self

Source: Koltko (2004)

Figure 2-5 summarises the association between the self, experiences and action or behaviour. It demonstrates how worldviews impact behaviour, experiences and identity formation. According to Kotko's (2004) diagram, the acting self indicates the route a person's actions take, from motivation through to cognition and, finally, execution. The experiencing self indicates the route that a person's experience of stimuli takes from sensing the stimuli to perception, leading to the formation of concepts related to the stimuli.

According to Joffe (2003), some individuals regard risk and ambiguity as a challenge and readily engage in it in the pursuit of resolution, whilst others regard uncertainties as threatening and adopt strategies to avoid risk. Bogozzi (2002) points out that worldviews explain why some individuals prefer developing strategies that address the situation of risk directly, whilst others prefer to address the situation or effect triggered by the risky situation. It is the impact of worldviews on our understanding of the relationship between cognition and behaviour that guides individuals' ability to cope with real-life challenges that makes them so important (Tetlock, 2002). In the context of this research, an analysis of worldviews is therefore pertinent, as it indicates why individuals interpret and judge risk differently and cope with uncertainty in different ways.

Pepper (1942) classified worldviews in the form of four metaphors that individuals use to understand the world: formism, mechanism, contextualism and organicism. Formism considers the similarities amongst different realities. Every phenomenon has a basic essence that may be used to classify all categories of similar forms. Mechanism is based on the metaphor of an engine, used to comprehend the world. The assumption here is that the world is a large and complicated engine that works according to the principles of linear causality and cause-and-effect between numerous variables. The world is considered a set of closed systems, and to understand the whole, one should first understand the parts and their interactions using a cause-and-effect paradigm (Pepper, 1942). Contextualism refers to the notion that context plays a key role in understanding events that occur, meaning that any given event can be subject to numerous interpretations depending on the context in which it appears. The world is perceived as consisting of a dynamically changing set of events that can be understood only in the given context, with no absolute perspectives. Organicism considers the world to be an enormous, live organism and that in order to understand an event; its evolutionary processes need to be explored. Worldviews are formed through dialectic processes that continuously resolve seeming contradictions. Through the dialectic process, an individual's construction of reality keeps becoming more differentiated and changes over time.

The relevance of the above metaphors for worldview in the context of ERM is that they indicate how different conceptualisations of risk can lead to different meanings and actions in relation to ERM strategy. Pepper's (1942) theory of worldview indicates that individuals make sense of reality in different ways, and that this represents an attempt to classify the preferences that people use to understand and explain different realities. According to Sofo (2008), worldviews represent the influences that impact an individual's manner of deriving meaning out of risky situations. If these influences are linked to a dominant ERM strategy, it may be possible to infer how proficiency in risk sensemaking moderates the maturity of ERM capability at the individual level. This, in turn, can point the way to developing more efficacious ERM strategies that closes the gap between aspiration and realisation. Rooke and Torbert (2005) state that worldview metaphors indicate different levels of consciousness that describe, in a mature manner, an individual's approach to risk management.

Another approach to worldview and its impact on sensemaking was proposed by Fisher *et al.* (1987). This approach explains that an individual's ability to derive sense out of a situation is shaped by his or her attitudes, inferences, value systems and beliefs. Fisher at al. (1987) also proposed the concept of 'worldview developmental staging', according to which, the worldviews that leaders hold impact the manner in which they structure their decisions. Leaders' worldviews impact their perception of power, appropriate behaviour, definition of tasks and conflict resolution.

The Fisher *et al.* (1997) worldview development staging framework consists of five progressive stages. The opportunistic development staging element refers to managers who are highly individualistic and seek unilateral power. These managers are suspicious that others are looking out for themselves and thwarting their efforts, and so they behave the same way. They externalise blame to others and regard the world in absolute black and white terms. That is, everything is either true or false, right or wrong. These managers place overwhelming focus on the sole control of the world. Managers who fall under the social development staging category focus on group norms and on the control of one's own behaviour. They adhere to leadership norms in order to gain approval. They seek status and happiness and view the world in a specific manner, where everything is clear and transparent. These managers have no room for variety and ambiguity. Managers in the analytic–transition development stage are more interested in how tasks, people and the self-work, and why things and individuals work the way they do. They seek perfection in all things, are open to multiple possibilities and consider contingencies and exceptions in various situations. However, they choose a single position as their preferred decision. These managers are logic-

oriented and take others' perspectives and viewpoints into considerations whilst defending their personal opinions. Psychological Associates (2016) stated that managers who fall into the goal–oriented developmental category focus on the execution of a set of steps that are rationally interrelated. These lead from the presentation of problems to solutions. They are conscientious, plan ahead, are hard-working and they value accomplishment and success. They are able to analyse people and events in greater detail, examine conceptual relationships, delineate differences between appearances and reality, and consider their own behaviour and its impact on the outside world. They prefer a decision-making process that uses consensus to arrive at conclusions. Managers who fall in the relativistic–transition development stage are aware that there are different ways in which to perceive reality and act (Psychological Associates 2016). They consider that each of these ways has its own merit and no one way is fully and objectively correct. Whilst they agree that there are different world views, they cannot commit to a self-defining opinion. They are highly tolerant of diverse views and opinions, place high value on interpersonal relationship, and demonstrate strong concern for social issues. Managers who fall into the self-defining category are better able to resolve both intra/inter-personal and political problems. They are able to derive a pattern from several disconnected events. They can tolerate both ambiguity and diversity. They understand paradoxes and explore different opinions, which they consider to be necessary for understanding new meanings for the purpose of motivation and goal definition. They share a common vision and encourage development.

The five elements of the Fisher *et al.* (1987) manager disposition framework are both stylistic and developmental. The framework is stylistic because it refers to a particular and preferred frame of governance by which meaning and behaviour are derived. It is developmental since it asserts that a preferred style of disposition can be consciously unlearned and a more sophisticated style nurtured and adopted. According to Kahlbaugh and Goldston (1992), both elements are valuable in developing risk decision-making proficiency, which is itself also considered stylistic and developmental. That is, certain preferences guide decision-making for all individuals, but the efficacy of the decision-making process can be enhanced by adjusting this mode of operation. Therefore, managers at a higher level of development are better able to collaborate with others to commit to a common cause. This is because they are able to properly define issues, identify problems and accept opinions presented by others. As such, they have access to more options and can both delegate and act unilaterally, should the situation demand this (Argyris, 1991). According to Caputi and Oades (2001), individuals with higher levels of cognition and conceptual complexity are more sensitive both to their

own feelings as well as to the external environment. They are able to tolerate ambiguities, paradoxes and complexities. They can empathise with those who have dissimilar opinions. As they move up the developmental stages, they add to their capacity of seeing things in multiple ways and develop a flexibility of response to multiple contexts. Hence, they are better able to address and deal with complex situations when they arise. Botella and Gallifa (2005) termed this ability as 'requisite variety', defining it as an essential competence to develop organisational knowledge.

It may be inferred that developing decision-making proficiency under the condition of risk and uncertainty calls for specific skills and competencies. It calls for a specific personality type and those with a certain worldview. This is especially the case when dealing with situations that are complex and yet to emerge, and accounts for organisational differences in ERM capability maturity.

2.4.4 The impact of transformative learning on risk decision making

According to SAI Global (2009), the paradox with standards-based ERM systems designed to deal with risk is deterministic in that it assumes that by following a set of standards, risk can somehow be addressed and controlled. However, risk cannot be controlled in a deterministic manner. ERM entails the management of complex organisational responses to estimated risks (Streatfield, 2001). However, when it is applied in a deterministic manner, it results in a rule-based system with a limited ability to control risk.

According to Langer (2004), since risk cannot be controlled through a deterministic approach, it is important to constantly consider how individual processes of cognition and conation interact to construct symbolic realities of a risky situation. This, in turn, determines the risk response. Once this risk response preference is made, individuals restrict themselves from alternate choices and succumb to the illusion of control. Langer (2004) states that it is more important to be highly sensitive to the risk environment and be open to different ways of understanding and managing the situation of risk. This result in the risk resilience required to anticipate and prepare for risk.

It is clear that risk decision-making proficiency is a learnable skill, as explained in Section 2.4.3. According to Batha and Carroll (2007), developing a risk decision-making ability involves increasing the amount of risk knowledge that can be actioned upon and the associated cognitive capacity that monitors regulates and effectively uses that knowledge. Kienholz (2009) states that through these processes, individuals develop a greater awareness of their own modes of inquiring into risk phenomena, how they go about collecting data, their preferred style of working, how they ask questions, solve problems and arrive at decisions.

Kostanski and Hassed (2008) state that in this way, they become more aware of and attentive to their own cognition levels, become emotionally sensitive, and better understand their motives. To develop the competencies that lead to enhanced decision making and action capability, Smith *et al.* (2003) recommend a process of 'deutero-learning' or 'learning how to learn'.

Deutero-learning has been classified into four distinct categories by Sofo (2009). Single loop learning is when learning collectively results in changes in existing rules and systems. There is a focus on improvement and on collective learning. Here, there is no discussion about the underlying premises, rules, assumptions and principles, nor is there any major change in strategy, structure, culture, systems or process within the organisation. Basset and Barbara (2015) stated that double loop learning is also a collective process, but there is a greater focus on challenging the status quo of existing rules, structures and assumptions and on developing collective insights into a problem. Triple loop learning directly targets the most basic principles and value systems of the organisation. This includes the type of business activity the organisation is engaged in and its market image. It is analogous to strategic planning processes that question the current positioning of the organisation, where it needs to go, and the best way to get there. Collective learning and organisational development are the two main points of focus here. Quadruple loop learning focuses more on different scenarios and on contexts. It includes the construction of multiple views of a current reality and combines current views with scenario-planning to develop a narrative for the future. It develops connections between current and future scenarios and considers individuals, groups, communities and organisations as the basis for organisational change.

Miccolis *et al.* (2001) explained the various types of learning loops by pointing out that they all have different emphases. Single loop learning focuses on understanding whether an organisation is moving in the right direction. Double loop learning is more adaptive and focuses on both efficiency and effectiveness, and it considers not simply doing things in the right away but also doing the right things. Triple loop learning expands upon double loop learning and considers ethics, moral rightness, diversity and justice. Quadruple loop learning, however, is transformative learning. Its main aims are to achieve integration and efficacious learning outcomes from processes of developmental learning.

Based on the knowledge gained through the literature review, it is believed that risk leaders can enhance their 'risk mindfulness' through the transformative learning process. According to Mezirow (2004), risk mindfulness means being sensitive to newness, distinction, different situations/events/contexts, and having the ability to consider variation in perspectives and the

present situation. Burgoon *et al.* (2000) states that developing mindfulness is necessary to improve cognitive performance and that the lack of it translates to prejudice, stereotyping, a higher incidence of error, misunderstanding, misinterpretation and misperception in complex situations of risk. To counter all of this, Batha and Carroll (2007) state that risk mindfulness is necessary for the development of critical reasoning ability and to avoid decision bias. Weick and Sutcliffe (2001) also indicate the importance of developing risk mindfulness, as this leads to highly reliable and resilient organisations, creates a culture of continuous risk awareness, and allows for the quick detection and diagnosis of risk.

The ability to develop risk mindfulness can be achieved through the development of organisational learning culture, and herein lays its importance. This view is corroborated by Weick and Sutcliffe (2001), who indicate that risk mindfulness is something that can be learnt at both the individual and organisational level. Learning improves not only the current resilient capacity but also the anticipatory resilient capacity of the organisation in that enables the organisation to counter both current and estimated risks. It may be inferred that a culture of learning leads to the development of maturity in the ERM capability of a business entity, as characterised by enhanced risk mindfulness.

Having understood that learning leads to enhanced risk mindfulness and that transformative learning is the recommended mode of learning for increasing the maturity of ERM capability, it is necessary to examine what transformative learning consists of. According to Lipshitz *et al.* (2007), transformative learning involves the cyclical evaluation of past behaviour and decisions, discovery of error, identification of opportunity and the development and implementation of new behavioural paradigms. Sussman and Henderson (2001) state that transformative learning leads to both enhanced levels of risk decision-making proficiency and ERM capability maturity. Schon (2008) defines transformative learning organisations as places where people are encouraged to create the results they desire, where new patterns of thought are continually nurtured, where aspirations are collectively nurtured, and where individuals continually learn to learn together. In this context, Lipshitz *et al.* (2007) recommend that business entities put in place organisational learning structures that facilitate data collection, analysis, dissemination and the application of information and knowledge. According to SAI Global (2009), transformative organisational learning is made possible through the design and implementation of learning mechanisms that incorporate cultural, psychological, leadership and policy aspects of the organisation together with a contextual aspect related to opportunities and threats. This increases the manager's level of influence and creates a perception that management is committed to the workforce. Finally, it is

asserted that transformative learning's reinforcement of risk decision-making ability is the most significant motivation for inculcating a culture of transformative learning in the workplace (Michaelis *et al.*, 2009).

2.4.5 The impact of transformative learning on developing risk culture

According to Mezirow (2009), learning is a social process whereby people construct and appropriate a new or revised meaning of their experiences. Learning results in the progressive development of an individual's capacity to engage in rational thought and dialogue and to derive broader, discriminating and integrated meanings from their experiences. Action is then driven by these meanings. The important point here is that learning does not take place in isolation, but is a social activity. This view is corroborated by Vygotsky (2008), who states that mental functions are formed and determined by social and cultural activities. Verenikina (2003) also states that higher mental functions may be developed only within the socio-cultural context. In the context of this research, it may be inferred that the development of risk leaders occurs within the broader context of organisational culture.

The degree to which organisational actions are likely to be productive has been said to be determined by organisational culture (Schein, 2004). Armenakis and Shook (2009) point out that dysfunctional cultures lead to non-performing organisations. These views are corroborated by Lipshitz *et al.* (2007), who note that because learning is a social function, in a corporate context, it is organisational culture that can either support or derail productive activity. The implication here is that the key to successful ERM implementation is the development of an organisational culture that supports risk. Knowing how to build and leverage the appropriate culture of risk is thus fundamental to the success of ERM implementation. The mere presence and incorporation of standards-based ERM processes into the board of directors' activities does not ensure effective ERM implementation. In this context, Lipshitz *et al.* (2007) recommend transformative learning processes, which are the outcome of an organisational culture that supports the development of relevant knowledge, and taking further action based on this information.

Organisational culture has been defined as representing human habits that, collectively, create a certain set of patterns (Stacey, 2002). In the context of risk management, Koltko (2004) points out that organisational culture collectively reflects whether or not a culture of risk has been internalised at the individual level. It may be inferred that development of organisational culture is a dialectic process formed by, and forms, the thoughts, actions and habits of its people. Weick (2001) also states that standard operating procedures (SOPs), such as the

standard ERM procedure, are necessary to create order and control within entities. However, whilst culture can also create the same order and control, SOPs can never facilitate dynamic interpretations, improvisations or action. Sutcliffe (2001) points out that culture is important in creating high-performance organisations, since organisational behaviour, habits and meaning-making are more susceptible to cultural norms than they are to technical specifications.

Having ascertained the importance of developing a culture of risk for effective ERM implementation, it is necessary to explore exactly what is meant by organisational culture. Petersen *et al.* (2003) regard culture as the framework under which members of an organisation are able to find meaning and identity. Waddell (2004) stated that culture comprises four elements structured in a layered manner. At the bottom of the layer are the basic premises - assumptions about how members ought to relate to their work environment, their human nature, activities, relationships, and how people ought to feel, think and perceive events within a corporate environment. Next are values, which guide members' behaviour, followed by norms, which provide an implied and often unwritten framework for culturally-acceptable rules of behaviour. Artefacts are the top and final layer, and they refer to the highest level of cultural awareness. This layer incorporates behaviours that are observable, as well as systems, rules, processes and procedures within the organisation. This layered view of culture indicates why it is thought of as a combination of decision making, communication, risk taking, diversity and innovation styles, along with organisational goals and outcomes. The implication here is that it also reflects whether or not a culture of risk has been incorporated into the systems and processes of the organisation.

According to Schein (2003), culture consists of six elements: basic assumptions or premises (element 1), which are developed by the social group comprising the organisation (element 2) as the entity learns to cope with various problems involved in adapting to external circumstances and internally integrating its various processes and systems (element 3) in ways that have found to be valid and meet desired objectives (element 4), and that can therefore be taught to new members who join the organisation (element 5) as the correct way to approach those problems (element 6). Lipshitz *et al.* (2007) point out that this definition of culture incorporates the various constructs of sense-making, worldview and learning.

These views also corroborate what has already been stated: that the effective implementation of ERM standards is dependent on a culture of organisational risk. Only a culture of risk will lead to the effective integration of structure and processes related to ERM standards. According to Harris (2004), an organisation's collective worldview with regard to risk is

reflected in the principles, behaviour, values and attitudes of the organisation's members, which also contribute to the development of risk culture. This means that risk culture also indicates the level of awareness of risk within the organisation and the level of preparedness for ERM implementation. In other words, the risk culture of an organisation indicates the maturity of its ERM capability and provides a framework through which such a culture may be adopted throughout the organisation collectively, impacting how people perceive, interpret and react to risk at the individual level.

It is necessary to understand the various kinds of organisational culture explored in the literature and identify which one is recommended to develop risk awareness within the organisation. Four distinct types of organisational culture have been proposed in the literature (Reason, 2009). First is the culture of reporting, which focuses on reporting errors, mistakes or lapses. Second is the culture of justice, which indicates how blame and punishment is apportioned when something goes wrong. Flexible culture, which is the third type, indicates individuals' level of adaptability to sudden changes in the internal and external business environments. Finally, the culture of learning impacts how efficiently people internalise lessons and develop assumptions and responses based on these learnings. An organisation may incorporate all four types of culture. In this case, it becomes an 'informed culture' or an 'informed organisation' (Reason, 2009). Such a culture develops a highly mature ERM capability and promotes commitment, confidence and collective action. Langer (2003) points out that this is similar to a risk culture that facilitates transformational learning both at the group and individual levels.

These views are extended by Fard and Rostamy (2009), who point out that an organisation can be bureaucratic, competitive, participatory and transformative. These researchers assert that it is transformative organisations that are able to demonstrate greater performance and stronger resilience to untoward or risk events, and this comes as a result of the incorporation of learning culture. Beer *et al.* (2005) point out that learning-oriented organisations know how to create and distribute knowledge, whilst Mckenzie and Van Winkelen (2004) add that learning organisations know how to leverage information or knowledge to develop competencies that will lead to sustainable competitive advantage. Power (2009) put forward the concept of 'intellectual complexity', which includes competitive, decisive, learning, relating and monitoring capabilities that need to be nurtured for effective risk management. The implication here is that if there is a gap in the standards of ERM implementation, this can be rectified by developing intellectual complexity amongst members of the organisation.

It is suggested, then, that developing effective ERM depends on the understanding on the relationships between worldviews, sense-making, risk culture and knowledge development. A comparison of these constructs with the mono-disciplinary, deterministic structure of conventional ERM explains why the standards-based ERM system fails to close the gap between aspiration and realisation. According to Ashurst and Hodges (2010), transformative learnings that create knowledge that can be actioned upon are the result of conscious practice. Tenkasi and Hay (2004) point out that by forging links between theory and practice, transformative learning can be inculcated at both the collective and individual levels within organisations. In this context, Midgley (2000) recommends the use of systemic interventions to facilitate transformative learnings. This is a methodology that facilitates explicit reflection on various problematic situations that are occurring or might occur and takes into consideration the views and opinions of a large number of stakeholders. This method focuses on addressing issues of marginalisation and uses theories and methods to solve identified problems.

Horlick-Jones *et al.* (2001) recommend the soft systems methodology (SSM) for facilitating transformative learning, which asserts that proper framework link and structuring is the key to identifying solutions to problems. According to Wilson, B. and van Haperen, K. (2015) SSM uses ‘deliberate frameworks of activity’ also called ‘holons’ that serve as guides in the process of managing planned and unplanned situations. They focus on four main activities, which, taken together, serve as a transformative learning process that helps people make sense of and deal with complicated situations. The first activity involves representing the risky situation, taking into consideration its social, cultural and political dimensions. This means analysing the roles of all those involved in the situation, the social context in which it is occurring, the relationships between various roles and norms, indicating how power is expressed, and demonstrating how different interests may be ac (Wilson, B. and van Haperen, K. 2015). The second activity pertains to risk mapping and identifies the resources that can be used to counter the situations, who should be assigned to what task, and why particular tasks have to be performed. The output is measured in terms of the ‘5Es’ of efficacy, efficiency, effectiveness, ethicality and elegance. The third activity is to use the output from the first two activities to debate the situation and bring about changes that are desirable, feasible, implementable, accommodative of conflicting interests, and in accordance with the culture of the organisation. The fourth and final activity is to take action to improve, dynamically monitor and control the situation via evaluation. Horlick-Jones *et al.* (2001) point out that, in

this way, the SSM method encourages action-oriented learning, which involves learning from both action and experience.

Sofo (2009) highlights that SSM is only a template or example of the type of transformative learning that is required to build up the risk resilience of an organisation. Any form of transformative learning should include the basic principles of continuous reframing and reflection leading to action, which results in better comprehension of the risk and also to newer modes of behaviour. SAI Global (2009) points out that it is important to document lessons learnt from previous risk situations and incorporate these as part of organisational learning. The rationale for building this kind of database is that members of the organisation will be better able to perform when similar events occur in future. Thus, the implication is that organisational leaders are responsible for facilitating this practice. More effective ERM implementation can be achieved through the creation of a learning-based ERM system shaped by the incorporation of risk documentation.

2.5. Analysing the Research Concept

This research takes the position that current ERM practices are implemented ineffectively mainly because of poor decision-making ability of senior managers under condition of risk and uncertainty. Conventionally, decision making in ERM processes follow the deterministic structure of the formal-empiricist model. However, this deterministic process of making decisions is incomplete. The formal and rationalist models have been criticised by Beach and Lipshitz (1993) as not taking psychological processes of the decision maker into consideration. Hammond et al., (2001) point out that decision making in real life is a dynamic process which cannot be accounted for purely deterministic or rational methods. Moreover, these models do not inform as to the mental processes that a person undergoes under condition of risk. KPMG (2005) pointed out that the standards based approach to ERM implementation has largely been ineffective which may be attributed to faulty decision making processes. Slovic (2000) indicates that faulty mental processes of reasoning leads to erroneous consideration of risky situations that lead to wrong decisions being taken. Here wrong decisions are those that do not lead to desired outcomes. The implication here is that both mental processes of leaders and the context in which decision making occurs must be considered in ERM processes.

It is the leaders of an organization that makes decisions related to risk and uncertainty. Critical decision making is an activity exclusively undertaken by the senior management of organizations. Bass (2008) points out that the role of leaders is to evaluate and select from a

host of options, those that improve efficiency of processes and operations. Northouse (2012) indicates that leaders need to ensure that the businesses they head are competitively positioned, vertically integrated, incorporate technology into their processes, capabilities and facilities and are operationally efficient. Hitt et al, (2012) state that senior management take decisions relating to supply chain, strategy formulation, product diversification, marketing, expansion, change management, data management, quality control, regulatory mechanisms and investments. These decisions are critical as the success or failure of an organization depends on them.

Given the link between leaders of organizations, faulty decision making and ineffective ERM implementation, the main concept being developed in this research is to understand the link between a special type of leadership and the effective implementation of ERM. ERM is conceptualized and implemented by the leaders of a company. However, given the high rates of failure of ERM, it may be inferred that there is some fault in the leadership that is the cause. Leadership therefore is not just about holding a position of authority and then leveraging this authority to effectively implement ERM. It involves those qualities and attributes that are specially geared towards achieving effective and efficient ERM implementation. The literature indicates that there are two qualities that are most important for leaders to effectively implement ERM. These include (i) critical decision making under conditions of risk and uncertainty and (ii) the ability to build a culture of risk in organizations.

Leadership **–** This research takes the view that effective ERM will only be possible in the context of other board members, the employees of the organization and the organization itself which are headed by the leaders which for the purpose of this research may be termed collectively as 'others'. The primary responsibility therefore of the board of directors is not just to understand the psychological factors that impact their decision making capability, but to influence others through creation of a risk aware and risk supporting organizational culture. However, according to Hillson (2012) it is this one factor that is often missing in organizations and the inability of the business entity to treat risk properly may be attributed to the lack of a risk supportive culture. Hillson (2012) points out that there is too much emphasis currently on how to manage risk and not enough on risk leadership. That is, there is a focus on tools and techniques of risk management – such as the standard based approach to ERM implementation – but not enough on risk leadership implemented at a strategic level.

According to researchers such as Reicher et al., (2005) and Huse (2007), the new psychology of leadership refers to the ability to inspire people to commit themselves to a cause. In the ERM context, this translates into the ability to influence others to build a risk supportive culture within the organization. It is this ability which, along with the ability to make rational decisions under condition of risk and uncertainty, that distinguishes risk leaders from general leaders. Amaratunga and Baldry (2002) corroborate this view by pointing out that along with risk management; risk leadership is also required for creating a risk – aware culture. Without risk leadership there is an overall lack of direction and vision that will shape the business entities' approach to risk management. Conversely, a combination of risk leadership combined with effective risk management skills will give the business entity a greater ability to tackle the challenge of risk.

Stephenson (2010) points out that risk management implementation cannot be effective through policies, systems and processes only. It can only be achieved through establishing a culture of risk management brought about through risk leaders. In a survey of banks and financial organizations done by Stephenson (2010) after the global economic recession of 2008, it was found that leadership did make a difference in an organizations ability to weather the recession especially with respect to risk management. It was found that these organizations were able to foresee the coming financial meltdown, understand the potential impact on their business and took appropriate pre-emptive steps. Essentially, these organizations had put in place risk cultures that were able to effectively counter risks. In contrast Stephenson (2010) pointed out that those organizations with no risk culture in place, could not anticipate the problems ahead and fared poorly at the time of the crisis. Stephenson (2010) pointed out that the leaders of these latter organizations ought to have known about the risks and being aware should have put I place those actions that would effectively counter them. Systems and policies were not as important as the leader's ability to effectively manage risk. It was concluded that effective risk management beings and ends with strong leadership.

The link between a strong culture of risk management and leadership is further corroborated by Onwuegbuzie (2007) who pointed out that risk management cultures can only be developed by the board of directors who do not hesitate to challenge senior management and is actively involved in developing this culture throughout the organization. Kelly (2006) points out that it is not enough to relegate the task of risk management only to risk management committees or a board of directors. Rather, a culture of risk management must be built top town and from bottom up. It is the board of directors together with the CEO, the executive management team, business leaders and the chief risk officer who together assume

responsibility to develop risk culture in the organization. Johnson et al., (2007) point out that risk leadership has to be developed not only amongst board members but amongst personnel in second and third lines as well including risk managers, compliance, credit and internal audit sections. According to Dailey (2003), every decision formulated and implemented within a business entity depends on leaders who have the ability to recognize opportunities and risks. Organizational performance at times of risk is wholly dependent on leadership which determines whether the organization will become a market leader or follower. In this sense, its leadership can become a business entities' most significant risk. Dailey (2003) also points out that risk leadership is something that has been largely overlooked by the Boards who prefer to focus on strategy, audit and compliance instead.

The implication here is that it is necessary to understand how leaders must influence others in order to create a risk supportive culture within the organization and how decision making and implementation must be conducted in the context of the larger group of 'others'.

Critical Decision Making - Critical decision making is of strategic business importance. Denis et al., (2011) point out that decision have to be strategically, administratively and operationally effective for a business to achieve sustainable competitive advantage. According to Papadakis and Barwise (2002), critical decisions ensure the competiveness of an enterprise by matching enterprise capability with market realities and address the requirements of current and future state of the business. Janczak (2005) states that the very survival of organizations depends on decisions take and decisions can establish organizational change, quality levels, vision / mission of the organization, strategy, appropriate markets and solve problems as well. It may be concluded that decision making is extremely strategic activity for organizations and is a complicated and time – intensive activity as well. Decision making under these conditions cannot be relegated to purely economic or financial issues but has to be extended to and impacts all areas of the organization. Risk has been defined as those factors that causes variances of actual results from projected or estimated results (O'Neill, 2001). Renn (1998) defined risk in terms of uncertainty involved in the outcomes of critical decisions. Spulick (2015) stated that critical decisions are mostly carried out in an atmosphere where it is not possible to predict outcomes with certainty. In an ERM context, several factors operate together that increase the risk involved in decision making including the market environment, the nature of the product or project, unanticipated events and the decisions of other stakeholders. Hence it may be inferred that leaders who are charged with the responsibility of ERM implementation must

have appropriate critical risk decision making abilities. They must have the ability to make decisions that lead to the expected outcomes from occurring.

Having established that leaders need to have the ability to make critical decisions, it is necessary to examine the best possible way in which this can be done to minimize inherent risk. According to Goldstein and Hogarth (1997), most persons do not have the ability to make decisions under risky conditions. It may be therefore inferred that the psychology of decision making is not a well understood phenomenon.

It is because of this that various approaches to decision making have been formulated to guide decision making for business leaders in corporate organizations. These include the formal-empiricist; rationalist and naturalistic decision making frameworks. The formal–empiricist framework, asserts that decision making is a staged, prescriptive and deterministic activity. This framework advocates a quantitative approach to decision making, where decision makers will choose options offering the highest utility. Here, the optimal decision is believed to be the one that offers the most utility. The rationalist framework asserts that decision makers should strive to make appropriate decisions rather than optimal decisions (Tversky and Kahneman, 2000). According to March and Shapira (1992), when faced with many alternatives, managers should choose the options that contain opportunities without the presence of dangers or risks.

However, these conventional processes of making decisions are faulty. Beach and Lipshitz (1993) criticised the formal-empiricist and rationalist frameworks for their failure to take the decision maker's psychological process into account. Moreover, these frameworks do not address the mental processes that an individual experiences under the condition of risk. KPMG (2005) also notes that the standards-based approach to ERM implementation has been largely ineffective, which may be attributed to faulty decision making processes.

The naturalistic method of decision making acknowledges that human capability has to be considered in the decision-making process under the condition of risk and uncertainty, and that decision making should be understood in the context of a dynamic work/business environment (Zsambok and Klein, 1997). Slovic (2000) suggests that the wrong decisions are made when faulty mental reasoning results in the erroneous consideration of risky situations. Here, the wrong decision is one that does not lead to the desired outcome. The implication is that both the mental processes of leaders and the context in which decision making occurs should be considered during the ERM decision-making process. Thus, it may be inferred that

a key sub- concept that must be considered in understanding those attributes of leadership that lead to effective ERM implementation is that of **the psychology of decision making under condition of risk & uncertainty.**

Developing a Culture of Organizational Risk – Another key sub-concept that must be considered in the literature on leadership & ERM implementation is the ability to create a culture of organizational risk. This concept is derived from the finding from the literature that the board of directors must not just understand the psychological factors that enable them to make decisions under condition of risk and uncertainty. They must also be able to influence others through the creation of a risk-aware and risk-supporting organisational culture. Risk leaders are set apart from general leaders based on this ability combined with the ability to make rational decisions in the face of risk and uncertainty. In this connection, Onwuegbuzie (2007), indicates that risk management cultures can only be developed by a board of directors. A culture of risk management should be built within a top-down and bottom-up structure (Kelly, 2006). Johnson *et al.* (2007) point out that risk leadership has to be developed not only amongst board members, but also amongst personnel in second and third lines, including risk managers and compliance, credit and internal audit sections. The implication here is that it is necessary to understand how leaders should influence others in order to create a risk-supportive culture within the organisation and determine how decision making and implementation should be conducted in the context of the larger group of 'others'.

From the above discussion, it may be inferred that there are three sub-concepts contained within the core concept being explored in this dissertation including that of ERM, critical decision making and creation of a culture of organizational risk. Decision making and creating a culture of organizational risk together ensures that the objectives of ERM are achieved. These include proactive identification of current and emergent risks, implementing risk mitigation activity, ensuring that all decisions taken are within the risk appetite of the organisation, including risk management responsibilities within strategic operations, creating a risk awareness culture throughout the organisation and linking risk information to strategic decision making.

2.6. Analysing the Research Gap

In the process of examining the links between specific leadership traits and ERM implementation, the following gaps in the literature were identified.

First Gap – Ambiguity in the concept of Enterprise Risk Management. There is a gap in the literature on the concept of ERM and what it is supposed to achieve. The literature indicates that many organizations believe in ERM and have put in place holistic risk management practices. Many organizations have prioritised risk management; have nominated special offices for risk management, constituted board committees to focus only on risk management strategies etc. However, their risk management implementation processes still have gaps. This is indicated by Minsky (2015) who pointed out that business organizations that have put in place ERM programs are still working on them to see what suits them and what is best for them. Whilst they recognize the importance of risk management, they consider its implementation still incomplete as it is not yet implemented across the organization. Miccolis (2013) indicates that some organizations do not consider risk as something that requires an enterprise wide program such as ERM while others do not see much value in formal ERM programs According to Loosemore (2008), some organizations manage risk in other ways besides ERM, while still others consider the benefits of ERM not exceeding the costs. It may be inferred that there is a gap in comprehending the concepts of ERM as well as its benefits because of which risk is not often linked with business strategy in organizations.

This gap in the literature on ERM implementation is highlighted by Beasley (2017) who stated that risk can be properly countered only with strong leadership. Beasley (2017) points out that while most organizations believe in the concept of ERM, they get frustrated by issues of implementation that do not achieve the desired objectives. There is no clarity on what the problem is and what the secret to effective ERM implementation is. Miccolis (2003) indicates that there is a continuing gap between what management considers to be the promises of ERM and the fulfilment of these promises. These gaps between promise and fulfilment are indicated in several ways. These include the low satisfaction levels implementers of risk management programs report with the tools and capabilities that are provided to them to management sources of risk, the limited inclusion on non – financial sources of risk in ERM programs despite the objective of ERM to counter financial as well as non – financial risks, the limited integration of ERM with other departments in the organization and a lack of knowledge on how to institutionalize ERM into the overall organizational structure.

Second Gap – Ambiguity in who should lead ERM implementations

While the literature indicates that it is the top leadership which must be responsible for the implementation, there is considerable ambiguity on who specifically must lead ERM

implementation programs and the role of the persons assigned to lead such programs. In some organizations, it is the board of directors that lead ERM implementations. The literature indicates that some organizations choose a specific Chief Risk Officer (CRO) who is assigned with the responsibility of implementing ERM programs, while others appoint those in financial roles such as the Chief Financial officer or the Chief Audit officer. This is because of the nature of their responsibilities. Some other assigns ERM implementation responsibility to their Chief Strategy Offices. It may be inferred therefore across organizations leaders assigned with management of risk often 'double hat' their roles. That is, they may be CFO's and CRO's or CEO's and CRO's as well. However, in these dual roles, their responsibility with regards to risk management is not defined clearly. In this scenario, the specific traits and qualities that an effective risk manager should possess is not clear.

Third Gap – Lack of Understanding on Psychology of Decision Making for Risk Leaders

The literature indicated that one of the most important qualities that an effective risk leader must possess is the ability to make decisions under condition of risk & uncertainty. However, there is a gap in the understanding of the psychological processes that a leader undergoes under condition of risk and uncertainty. There is more focus on what qualities, traits and attributes that leaders must possess rather than on the psychological processes that operate during decision making. This is indicated by the several theories that have been developed that treat of leadership qualities and traits. For example, trait theories focus on qualities such as achievement orientation, assertiveness, emotional stability, sensitivity etc. The Cohen-Bradford model discusses the communication styles that leaders must adopt. The psychodynamic theory talks about communication and sharing skills. Path-goal theory indicates how leaders can motivate others, while contingency theory studies how leaders manage change. From these and other theories it was inferred that the literature on leadership does not consider the psychological processes involved in decision making under condition of risk. There is no clearly defined route that leaders who are operating in risky conditions must follow in order to make those decisions that de-risk the organization on the one hand and help the organization achieve its organizational goals on the other. The literature on how leaders make decisions is also highly confusing. According to researchers such as Zsambok and Klein (1997) and Flin et al., (1997), leaders use a system of prioritization when making decisions under risky or stressful conditions. That is, in situations of ambiguity, where several options and paths of action present themselves, leaders use rational thinking and past

experience to choose those options they feel are of higher importance and priority. Other researchers such as Isenberg (1984) and Schon (1987) however state that decision making under condition of risk is rarely a rational process. Decisions are most often made based on intuition. Researchers such as Hammond et al., (1997) indicates that researchers use a combination of intuition and reason to arrive at decisions under risky and ambiguous conditions. Some of the psychological factors that impact decision making have been identified from the literature. These include, Risk Seeking, Risk Averseness and Detachment, Psychometric paradigms, Attitude, Bias, Gender, Individual Culture and Surrounding Culture. However, these factors have not been examined in the context of an ERM implementation. It may be inferred therefore that the lack of clarity on how managers arrive at decisions and more particularly on the mental and psychological processes involved in decision making is a big gap in the literature on risk leadership.

Fourth Gap – Lack of Understanding on factors impacting creation of risk culture by leaders in an organization.

Apart from the ability to make decisions under condition of risk and uncertainty, another distinguishing feature amongst effective risk leaders was identified from the literature is their ability to build a culture of risk in the organization. However, the literature indicates that the ability to create a risk culture is most important as it creates the background against which risks and opportunities may be identified and evaluated by the organization. In this connection, there is a gap in the literature on the psychological factors that operate as the risk leader attempts to build this culture of organization risk appetite. Some of these factors have been identified from the literature. They include the ability to think in terms of a team player, to inspire the team, being sensitive to context / perspective, to leverage personal charisma, to take into consideration team interests, to facilitate group activity, sense making, transformatively learn, to take action, to gain a worldview and to identify risks and opportunities. However, none of these constructs have been empirically verified in the context of ERM implementation. It is this gap in the literature on ERM that this research seeks to bridge.

2.7. Conclusion.

ERM is a new form of risk management, conceptualised and executed by the organisation's board of directors in an attempt to govern the various complicated, socially-negotiated and developed interrelationships of business entities as they interact with external business/socio-economic-political systems. Contemporary practice of ERM aims to contain existing risks

and counter future risks through the implementation of rules, principles and standards. However, the literature has identified a gap between the aspiration and realisation of effective ERM implementation. To that extent, the risk management standards currently being used can be said to present an idealised solution to risk situations that occur in actual daily life.

The ability to bridge this gap is what distinguishes risk leaders from regular leaders. Thus, whilst the board of directors should display all of the leadership-related traits and behavioural characteristics explored in the literature, they should also be able to make rational decisions under the condition of risk and uncertainty and create an appropriate risk culture within the organisation. The literature identified the various factors or constructs that operate at the individual level that influence a person's decision-making capability under the condition of risk and uncertainty. These include mental protective frames that lead to risk acceptance or risk avoidance, psychometric paradigms and bias – all of which are found to impact decision making in the presence of risk and uncertainty. However, these are theoretical constructs that have not been empirically applied to leaders operating in situations of risk in order to test their validity.

The literature also explores the various concepts embedded within the new psychology of leadership that are able to guide decisions and create an appropriate risk culture within organisations in order to drive effective ERM. It was found that the psychology of leadership exclusively focuses on the qualities and behaviour expected from a leader. Whilst these are still relevant, it is more important for leaders to change their current 'I'-centred modes of thought to the 'we'-centred approach. New leadership is about collaborating with others, engaging in the process of negotiation, and the creation of an identity that increases the charismatic appeal of the leader. It is this type of leadership that is able to psychologically influence others to adopt a common vision and work towards common organisational objectives. When translated to an ERM context, the new psychology of leadership is essentially related to the processes of collaboration that lead to joint decision-making and the act of working together to redress current and future risks. The extent to which organisational leaders are able to influence others to work towards this type of risk management process determines the degree of effectiveness achieved in standards-based ERM implementation and application. Again, these are theoretical findings that need to be validated, meaning that the new psychology of leadership needs to be empirically tested.

The psychology behind the creation of organisational risk culture has also been reviewed in the literature. The foundational concept here is that of the ability to make sense or meaning out of risky situations and to communicate these meanings to others. Drawing on the

literature, this foundational concept has been expanded to include sense making, worldview, transformative learning and the ways in which transformative learning can develop a risk culture within the organisation. Based on the assumption that the gap between aspiration and reality in standards-based ERM is essentially a cap in capability regarding the application of ERM standards, the literature indicates that this gap may be bridged by developing risk culture through processes of transformative learning.

Chapter 3 – Evaluation of the Literature

3.1 Introduction

This chapter highlights gaps in the literature regarding the psychology of risk leadership; the section outlines the research gaps that exist in the current literature regarding risk leadership in the ERM context. The aim of this research is to close these gaps, thereby making a valuable contribution to the literature on risk leadership in order to facilitate more effective and efficient ERM implementation. Althonyan (2003) four quadrant framework, explained in further detail in the following section, has been adopted in order to identify the gaps in the literature. The key themes identified from the literature were used to develop a theoretical framework that explores how these research gaps may be closed.

3.2 The four quadrant framework

The four quadrant framework is a commonly-used tool adopted to evaluate the literature regarding a specific phenomenon or topic, and thereby identify gaps in the existing literature that need to be addressed through further research. As noted in the previous section, the four quadrant framework of Althonyan (2003) has been adopted in this study to categorise the academic literature on the subject of leadership and ERM. This categorisation is based on purpose (vision or implementation) and outcomes or results (descriptive or prescriptive).

Visionary literature focuses on the aspirational aspects of ERM rather on the processes that need to be implemented to close the gap between reality and aspiration. Implementation literature, on the other hand, focuses on the practical steps that can be taken to bridge the gap between aspiration and reality. This framework then yields four possible categories, whereby risk leadership in an ERM context may be explored in the form of a matrix that includes descriptive vision, perspective vision, descriptive implementation and prescriptive implementation. Figure 3-1, below, illustrates all four quadrants together with the dominant themes and the gaps in the literature with respect to these four themes.

Research Philosophy		
	Visionary	Implementational
Research Outcomes – Descriptive	**Quadrant I** *Describes Standards Based Approach to Enterprise Risk Management* • Development of Standards Based Approach to ERM • Develops the theoretical model of ERM explaining all the steps involved in the ERM process • Explains the capability maturity model of ERM • Highlights gap between aspiration and realization	**Quadrant III** *Describes the link between psychology of risk leadership and standards ERM Implementation* • Indicates the various theories of leadership • Indicates the various models of leadership • Shows the critical gap in that there is no literature on risk leadership and effective implementation of ERM
Research Outcomes – Prescriptive	**Quadrant II** *Provides perspective on the nature of risk for which ERM Processes have been established* • Highlights the different kinds of risk in the business environment • Indicates the evolution of enterprise risk management • Indicates the unresolved theoretical issues regarding managerial risk decision making	**Quadrant IV** *Provides perspective on how developing organizational risk culture counters risk* • Indicates the importance of cultivating a culture of Intra-organizational risk • Highlights the gap in developing an appropriate risk culture at the organizational level

Figure 3-1 four quadrant gap analysis

Source: Adopted from Althonyan (2003)

The first quadrant in the above chart demonstrates that the standards-based approach to ERM has been explained with consideration of the gap between aspiration and realisation. Quadrant III provides an overview of the links between the psychology of risk leadership and the implementation of standards-based ERM along with the gaps in the literature on this subject. A perspective of the risks that endorse specialised risk management strategies such as ERM is provided in quadrant III, whilst a perspective of how risk can be countered through the development of a risk-based organisational culture is provided in quadrant IV. Figure 3-2 summarises the key contributions of the literature with respect to each quadrant.

Research Philosophy			
		Visionary	Implementational
Research Outcomes	Descriptive	**Quadrant I** ***Describes Standards Based Approach to Enterprise Risk Management*** Miccolis et al., (2001), Yates et al., (2003), SAI Global (2009), Hood and Jones (1996), COSO (2004), SAI Global (2009), Khoo (2012), Cooper (1997), Crouchy et al (2001), Frame (2003), Lam (2003) and Sharman (2002), Abrams et al., (2006) AON Global (2010), KPMG (2006), Abrams et al., (2006) Loosemore (2008), Accenture (2011), AON Global (2010), COSO (2010) and Ernst & Young (2010)	**Quadrant III** ***Describes the link between psychology of risk leadership and standards ERM Implementation*** Hartop and Koopman (2001), Yukl (1998), Derue et al., (2011), Kirk-Patrick and Locke (1991), Dean and Meyer (2002), Ginsburgh and Shiesmann, 1977), Stech (2004), House and Mitchell (1974), Dinh et al., (2014), Gill (2011), Reddin (1970) , Randell (2008), Avolio (2007), Murase et al., (2014), Feigenbaum (1993), Lichtenstein et al., (2006), Flin et al., (1997), Zsambok & Klein (1997), Klein et al., (1993), Klein (2003), Isenberg (1984), Schon (1987), Hammond et al., (1997), Goitein and Bond (2005), Maani and Maharaj (2004), Baron and Loomes (2001) and Anderson (2003), Druker (2001), RIMS (2004), COSO (2004) , RIMS (2004), Knight (2002), Chorafas (2009), Power (2009), Barton et al., (2002), Blanks and Dunn (2003), Accenture (2011), Haslam et al., (2011), AIRMIC et al., (2010), Stulz (2009)
	Prescriptive	**Quadrant II** ***Provides perspective on the nature of risk for which ERM Processes have been established*** Frame (2003), Dickinson (2005), Aven and Renn (2009), Miller (1992), COSO (2010), Ernst & Young (2009), Young and Tippins (2001), Deloitte Touche Tomatus (2009), Accenture (2011), COSO (2004), SAI Global (2009), World Economic Forum (2011) Athanassoulis and Ross (2010), Hermasson (2010) Goldstein and Spitznagel (2009), Tarantino (2006) Liebenberg and Hoyt (2003)	**Quadrant IV** ***Provides perspective on how developing organizational risk culture counters risk*** Barton et al., (2002), Zammuto and Mitroff (2000), Lloyd (2005), Ernst & Young (2010), COSO (2010), Accenture (2011), Ernst and Young (2009), KPMG (2006), Power (2009), McClean (2010), Power (2004) , Aven and Renn (2009), Stacey (1992), Streatfield (2001), MacGill and Siu (2004), Barton et al., (2002), Weick and Sutcliffe (2001), Salas and Klein (2001), Shanteau (1992), Crouchy et al., (2006), Carlopio (2003), Kotter (1996), Maguire and Redman (2007) Nash et al., (2001), Armenakis and Harris (2009), Stulz (2009), Ashurst and Hodges (2010), Dash (2006), Tabeb et al., (2009), ANAO (2003), Barrett (2004) and Ernst & Young (2005), Loosemore (2008), FERMA (2006), (KPMG, 2006), Lam (2003), Chorafas (2004), Power (2009)

Figure 3-2 Literature - four quadrant gap analysis

Source: Adopted from Althonayan (2003)

The specific gaps in the literature corresponding to each quadrant are explained in the following subsections.

3.3 Quadrant 1 – Gap between aspiration and realisation in ERM

According to Miccolis *et al.* (2001), the organisation may approach ERM using both measurement and process control methods. In the measurement method, the organisation understands the main problems or risks confronting the organisation, the seriousness of the risk, the probability of their occurrence and the development of risk mitigation strategies to counter the most serious risks. The process control method focuses on the risks embedded in the business process. Here, the emphasis is on reporting relationships, methods to control risk, collecting data, analysing these data, and reporting the data to make informed decisions (Yates *et al.*, 2003). According to SAI Global (2009), process control approaches manage

risk through data-driven decision making processes that limit the likelihood that risk will occur.

According to Hood and Jones (1996), irrespective of the way risk is approached, all risk management processes incorporate three basic characteristics of control systems: goal setting, data collection and analysis. This leads to the mitigation of risk through action. At present, the most commonly-adopted ERM system is the standards-based system, which entails the use of best practices in the design and implementation of ERM processes. Some of the commonly-followed standards across the world include the AS/NZS ISO standards, the COSO 2004 standard as well as the UK's AIRMIC standard and as many as 26 other standards used in various countries (SAI Global, 2009). All of these standards have a common element in that they systematically apply formal processes and procedures for the purpose of communicating, establishing context and identifying, evaluating, treating, monitoring and reviewing risk. These processes are summarised by Khoo (2012) as illustrated in Figure 3-3, below:

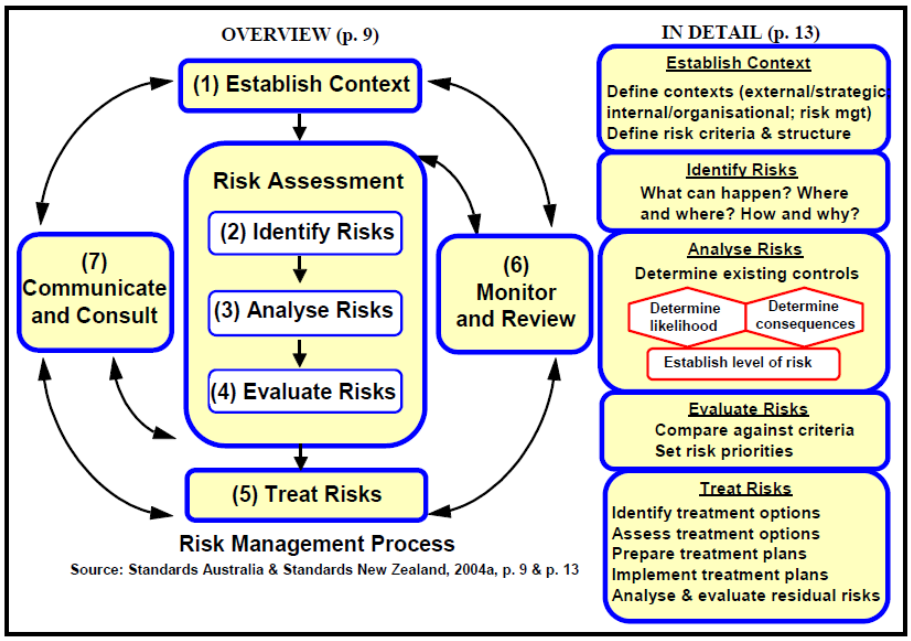

Figure 3-3 Formal standards-based ERM process

Source: Khoo (2012)

It is observed from the chart, ERM is a seven-step formal process that entails the following points: i) establishing the context in which ERM should be implemented and the criteria for the evaluation of risk; ii) identifying events that could potentially impact the achievement of organisational objectives; iii) identifying and evaluating existing controls and processes; iv)

comparing the estimated level of risk against the risk criteria; v) implementing the identified risk management processes; vi) monitoring the effectiveness of ERM processes in order to achieve continuous improvement; and vii) communicating with internal and external stakeholders during every stage of the ERM process. These seven steps reflect the ERM processes developed by other proponents of corporate risk management, including Cooper (1997), Crouchy *et al.* (2001), Frame (2003), Lam (2003) and Sharman (2002).

According to SAI Global (2009), the proponents of a standards-based ERM framework state that systematic application enables organisations to counter risk, manage and maintain organisational competitiveness. Some of the benefits of standards-based ERM implementation include comprehensive risk management across the organisation, assurance of compliance, enhanced risk awareness, good corporate governance and enhanced organisational learning. However, the efficacy of the standards-based ERM approach has been questioned by Abrams *et al.* (2006) and AON Global (2010), who point out that a business entity can only reap all or some of these benefits if its ERM capability is in a highly mature/evolved stage. That is, ERM implementation should reflect continuous improvement, accountability, focussed consideration of risks and continuous processes of communication with stakeholders. In this context, it is highlighted that a checklist approach is invariably taken to ERM implementation despite recommendations that ERM approaches should be customised to suit the organisation's specific risk management requirements (Khoo, 2012). KPMG (2006) and AON Global (2010) have identified criteria for top performance ERM programmes and a health checklist to examine where business entities are positioned with regards to their ERM performance. Abrams *et al.* (2006) explain that here, organisations get rated along a continuum of risk management capability maturity, and this process is being increasingly used to benchmark and audit ERM capability maturity amongst today's organisations.

Loosemore (2008) points out that the ERM capability maturity framework is in turn based on the software capability maturity framework developed by Carnegie Mellon University. Fox (2003) points out that this framework consists of a five-level maturity framework, expressed as the initial, repeatable, defined, manageable and improvement levels. At the initial level, risk management processes and the associated decision-making processes are ad-hoc and chaotic. Processes are undefined and, hence, implementation success is more a measure of individual capacity and experience than it is organisational capability. Previously implemented processes that achieved success are documented and repeated at the repeatable

level. Process discipline is based on having similar previous experience within the business entity. These processes are repeatable but dependent on individual experience and skill. At the defined level, ERM processes are formally defined, standardised, documented and integrated into the strategic processes of the organisation. ERM is institutionalised within the organisation. At the manged level, it is possible to quantitatively measure ERM processes' implementation and results. These processes are implemented throughout the organisation. At the improvement level, organisational sustainability and the viewpoints of different stakeholders are taken into account in order to continuously enhance ERM processes. Here, ERM becomes a source of sustainable competitive advantage.

Organisations such as Accenture (2011), AON Global (2010), COSO (2010) and Ernst & Young (2010) all point out that it is only when an organisation's ERM processes reach the improvement level that all of the purported benefits of ERM will accrue. The same organisations also point out that the results of ERM surveys indicate that most organisations fail to achieve this capability level even after applying standards-based ERM processes. Therefore, there is a gap between the aspiration and realisation of standards-based ERM processes. The implication here is that there is nothing wrong or limiting in the standards or best practices that have been identified for ERM implementation. From the literature, it is clear that this gap is due to a failure in risk leadership. The gaps that occur between decision-making capability at the level of the individual leader and organisational culture need to be explored in order to determine how the gap between aspiration and realisation may be bridged.

3.4 Quadrant 2 – The nature of risk

Examining the nature of the risk that an organisation should deal with is critical to understanding why risk leadership is required to drive effective ERM implementation. Frame (2003) points out that the identification of risk is important to understand how it may be managed. Dickinson (2005) defines risk management as a set of coordinated activities that directs and controls risk in a business. According to Aven and Renn (2009), risk refers to the unpredictability contained within human decisions and actions, and to the incertitude present in the real–life business environment. Miller (1992) points out that risk is both inevitable and ubiquitous, and that it refers to a wide array of uncertainties including general environment, industry, organisational and behavioural uncertainties.

COSO (2010) and Ernst & Young (2009) note that ERM is a relatively new discipline that has evolved through four stages of risk management. The first stage involved the pre-emption

of risk through the reduction in innovation, with a greater focus of insurable risks (Young and Tippins, 2001). During the second stage, risk management included the quantification and treatment of risk through policies and procedures. During the third stage, organisations considered entrepreneurial risk and aligned risk management with business objectives. The fourth stage marked the evolution of ERM, wherein businesses attempted to manage risk throughout the organisation in a proactive and coordinated way, through prioritisation. According to organisations such as Deloitte Touche Tomatus (2009) and Accenture (2011), this form of risk management, which is integrated, comprehensive, strategic and holistic, has become the most popular method to maximise shareholder value, improve capability maturity level and enhance organisational performance. Organisations' boards of directors and senior management teams identify events that could cause risk across the business and manage such risks so as to ensure that organisational objectives are achieved, thus serving as the main drivers of risk management under the ERM approach (COSO, 2004).

SAI Global (2009) and the World Economic Forum (2011) point out that ERM is necessary given the variety of risks a modern business enterprise has to contend with. The business environment is characterised by increasing global turbulence, with globalisation resulting in more cross-border risks. Financial disturbances and political instability within any one country create a ripple effect throughout the globe, impacting the risk profiles of other countries. Examples of this include the financial crisis that hit the US banking sector in 2008 and the Brexit vote in the UK in 2016. A weak domestic economy can impact the business viability of local industry. In the face of such a challenging environment, organisations should ensure that they achieve optimal performance. In addition, Athanassoulis and Ross (2010) indicate that organisations have to manage diversity and treat all stakeholders equitably or in a manner that is seen as just. Any compromise on this can negatively impact the brand value of the organisation. Hermasson (2010) indicates that ERM is not only about scientific analysis or a quantification of risk, but includes the management of corporate social responsibility or how organisations are 'seen' by the outside world. It may be inferred that risk management in the modern business environment is a discipline that is a strategic activity, encompassing governance and socio-political and economic issues in a complicated and dynamic setting. Goldstein and Spitznagel (2009) therefore point out the need for ERM that is both innovative and transformative, with past experience and historical data being imperfect guides for future risk management.

Tarantino (2006) notes the heightened sensitivity towards risk management over recent years due to the high profile, widely-publicised corporate failures that have occurred at both

national and international levels. Other issues that organisations should contend with include environmental disasters, stricter regulatory mechanisms and the implementation of mandatory corporate governance guidelines. Liebenberg and Hoyt (2003) point out that risks are no longer insurable but strategic, calling for more sophisticated risk treatment mechanisms, development and the adoption of new risk principles, where more importance is given to chief risk officers as owners of ERM processes. With growing pressure to comply with corporate governance related regulations, multiple demands from stakeholders, and growing risks and threats, there is an urgent need to identify ways in which standards-based ERM can be effectively implemented. The ways in which the implementation of standards-based ERM can be performed in order to counter all of the risks faced by modern day organisations represents a gap in the literature that needs to be filled.

3.5 Quadrant 3 – Gap in the literature on risk leadership and decision making

From the literature, it was identified that the psychology of risk leadership that distinguishes between leaders in an atmosphere of risk and uncertainty highlights the ability to make decisions and develop a risk culture within the organisation. However, a brief review of the literature on leadership indicates an overwhelming focus on deriving the qualities and traits of a leader rather than understanding the psychological processes that drive decision making and the development of risk culture.

According to Hartop and Koopman (2001), **trait theories** of leadership are based on specific traits that distinguish leaders from the common mass of followers. Yukl (1998) stated that leadership traits include integrity, honesty, smartness, proactivity, leadership, honesty, fairness, self-confidence, achievement, motivation and other cognitive capabilities. Derue *et al.* (2011) note that other traits include assertiveness, decision making, openness, dominance, emotional stability, assertiveness and the sensitivity to empathise with followers. Kirk-Patrick and Locke (1991) distinguished abilities such as maturity, self-assurance, working class affinity, decisiveness and traits such as the need for self-actualisation, occupational achievement and power over others. The **Cohen-Bradford framework** asserts that leaders possess distinct communication styles that influence their followers to obey them. However, Dean and Meyer (2002) criticise the framework for its focus on one-directional communication (leader to followers) rather than two-way communication (leader to followers, and followers to leader). According to Freud's **psychodynamic theory**, leaders are able to share and communicate a vision to their followers and help in building relationships with them based on trust and fairness (Ginsburgh and Shiesmann, 1977). When employees

feel that they are valued, they engage in more positive efforts, whereas negative outcomes occur when employees do not feel valued by their leaders. Stech (2004), however, states that psychodynamic theories cannot be generalised, are non-scientific and deterministic. **Path-goal theory**, presented by House and Mitchell (1974), indicates that leaders are able to show their followers the path they have to pursue and establish a system of rewards (financial and non–financial) that motivate them to achieve set goals. Dinh *et al.* (2014) point out that path-goal theory links a leader's effectiveness to the performance of his/her followers. There is no focus here on the cognitive skills that a leader should develop in order to motivate employees. According to the **contingency theory** of leadership, leaders are assertive and open to accepting changes, responding in accordance with changing situations in the market. Gill (2011) states that leaders are able to deal with any situation because they are flexible and they know how to manage uncertainty. The **situational theory** of leadership asserts that individuals are able to command a following due to their proactive approach and attitude towards their work. It is also argued that the most committed and accountable leaders are those who adopt the situational leadership style (Reddin, 1970). According to the **full range framework** of leadership, leaders are individuals who set goals and actively monitor progress in order to avoid conflict and errors. This framework is based on a leadership style that is geared towards empowering and motivating employees. The full range framework asserts that leaders can influence their followers by listening to them, encouraging them, allowing for brainstorming sessions and building their followers' confidence. This framework is criticised by Randell (2008), who states that it is too informal and therefore ineffective in influencing followers. This framework results in leaders who avoid taking action and ignore problems rather than challenging them. **Great Man theory** is based on the impact that a great man has on followers, and relies upon a biographical analysis of the lives of great men in history. However, this theory has been criticised for being too vague in its definition of leadership (Avolio, 2007). It is stated that there is a lack of clarity within the theory, and that it does not identify any particular skills. **Stratified systems theory** states that leaders are able to lead by virtue of direction and their commitment to the organisation, and its goals are imitated by others within the organisation. However this theory has been criticised by Murase *et al.* (2014), who state that it focuses exclusively on the organisation, but not on the behaviour of the leaders. Therefore, there is a lack of clarity regarding the way in which commitment is perceived and how these translates to managers' motivation to commit to organisational goals. As noted by Feigenbaum (1993), the **interactive complexity theory** of leadership focuses on organisational structure and on how leadership may be achieved through

interactions with followers. This theory has been criticised by Lichtenstein *et al.* (2006), who point out that it does not take into account individual differences and the environmental conditions within which workers have to interact.

An analysis of the aforementioned theories indicates that they do not consider the psychological processes involved in decision making and in creating a risk culture within the organisation. Decision making is complex, with no clear process being identified in terms of decisions reached under the condition of risk. Indeed, the literature indicates considerable confusion on how managers make decisions overall. Zsambok and Klein (1997) and Flin *et al.* (1997) assert that efficient decision makers dealing with high-stress environments do not engage in the process of alternative-generation when there is a need to make a decision. A high-stress environment is characterised by very short deadlines, frequent changes, lack of proper structure, problems that are not clearly defined, constantly-moving targets, and multiple stakeholders (Klein *et al.*, 1993). In addition, there are constraints on organisational goals and norms, and the requirement to respond to a context where there are high stakes involved. Klein (2003) points out that in such situations, efficient decision makers evaluate their options sequentially and incrementally using rapid action feedback loops. They use mental imagery and past experience to aid the judgment process and assess outcomes (Klein, 2003).

In addition, Isenberg (1984) points out that senior executives are rarely rational, focused or decisive, nor do they have well-articulated goals and objectives. Instead they use intuition and disciplined problem-solving methodologies in their decision-making activities. They incorporate an action taken in response to a particular problem whilst diagnosing it. Schon (1987) points out that this process is one of dynamic thought and action, using framing and reframing processes similar to that of a 'reflective conversation'. Hammond *et al.* (1997) add that some real-life decision making processes are influenced by analysis and others by intuition. It is also argued that decision makers are not associated with any particular decision-making style (Goitein and Bond, 2005). This corroborates research carried out by Maani and Maharaj (2004), Baron and Loomes (2001) and Anderson (2003), who point out that managers, differ considerably in their thinking styles, data processing methodologies and decision-making strategies.

Druker (2001) points out that with so much diversity in decision-making processes, a proceduralised standards-based ERM process will have limited effectiveness. This is because procedures only indicate how something can be performed efficiently but cannot indicate

what exactly should be done in a particular situation, such as in a situation of risk. It is also argued that because procedures are created in repetitive situations where decisions have been validated and prescribed, they cannot be used as substitutes for judgement (RIMS, 2004). COSO (2004) points out that it is more important to develop proficiency and capacity for rational judgement. This is because the effective implementation of ERM that will deliver the purported benefits of standards-based ERM can only be achieved through sound judgement and efficient decision-making processes.

Here, RIMS (2004) asserts that the standards-based ERM processes currently being used presuppose the existence of rational decision-making processes. SAI Global (2009) indicates that the literature on ERM specifies the necessity of developing decision-making skills but does not explain how and why such skills are to be developed. Knight (2002) points out that this is due to the purposefully generic nature of specifications of ERM standards, as business entities are expected to customise and apply the standards according to their particular requirement. The point to be noted here is that ERM standards already suppose the existence of sound judgement and decision-making ability at critical junctures. However, in reality, ERM standards do not reflect this supposition. They do not indicate how a leader can develop proficient decision-making abilities by merely following steps, guidelines and best practice measures outlined within the ERM framework. That is, standards-based ERM practices are completely silent on the cognitive aspects of making judgements/decisions in a particular context.

The lack of understanding regarding the increase in risk-averse risk managers can be attributed to the gap in the literature regarding the mental processes that impact decision making. Chorafas (2009) points out that managers have a tendency to focus on the secondary risks that could potentially impact themselves over primary risks to organisational health because they become ‘risk/responsibility averse’ when confronted with the need to make decisions. Power (2009) considers this an intellectual failure that shifts organisational focus onto output alone rather than developing the internal capacity to create efficacious outcomes at all times. Power concludes that because of this, those managers who are called upon to make decisions at time of risk become a victim of their own defective assumptions, beliefs and worldviews, which in turn impedes efficient ERM implementation and performance.

The argument for developing a risk culture to facilitate ERM implementation is made by Barton *et al.* (2002), Blanks and Dunn (2003), and Accenture (2011), who point out that while the onus for making decisions at times of risk lies with top leadership, every employee should develop the ability to become a risk manager. This reflects a more inclusive

perspective and is consistent with the new psychology of leadership that mandates leaders as making decisions in collaboration with others. According to Gordon *et al.* (2009) such inclusiveness will bridge the gap between the aspiration and realisation of ERM capability maturity. However, there is a lack of clarity as to how this risk culture is to be created, and with regards to the contribution of leaders in its creation.

Another gap in the literature on risk leadership is highlighted by Haslam *et al.* (2011), who said that a leader's mental frame that determines his/her ability to make decisions is impacted by a range of social and contextual factors. These include: (i) the organisational culture or the culture of the group in which the individual is called upon to lead, as well as the larger society within which the group operates; (ii) the leadership style adopted by the individual; and (iii) the gender of the leader. However, these aspects have not been dealt with in the literature on leadership and decision making in the context of ERM. AIRMIC *et al.* (2010) state that addressing these gaps is very important, since effective standards-based ERM implementation will contribute to better corporate governance, risk management, enhanced market share and sustainability. Conversely, Stulz (2009) points out that failure in ERM implementation results in corporate demise.

3.6 Quadrant 4 – Developing a risk culture and effective ERM implementation

The literature indicates differing levels of success related to the implementation of standards-based ERM. Barton *et al.* (2002) point out that ERM standards are themselves limited and often applied in an ad-hoc manner. According to Zammuto and Mitroff (2000), organisations do not follow the prescriptive method of applying ERM, particularly in times of crisis. According to Lloyd (2005), ERM implementation is fragmented and segregated. There is little evidence of ERM implementation being carried out in an embedded and integrated way, despite this being recommended under best practice (Ernst & Young, 2010). COSO (2010) points out that for most enterprises, a true organisation–wide approach to ERM implementation and compliance is still not a reality. Lloyd (2005) points out that this gap between aspiration and realisation is particularly predominant amongst boards manned by persons who have no training or education in how to leverage ERM to its full potential. This view is corroborated by COSO (2010), which states that organisational boards suffer from a lack of accountability, no foresight and deficiency in risk management application. It is for this reason that organisations such as Accenture (2011) and COSO (2010) state that the limitations of the ERM approach are not related to the specifications of the standards but rather by their application. Ernst & Young (2009), KPMG (2006) and Power (2009) all point

out that the gap between aspiration and realisation is the result of wrongful interpretation and deficient utilisation of the specified ERM standards by the board members and the organisation as a whole. On this topic, it is also asserted that as long as the application of ERM standards is guided by knowledge of their theoretical assumptions, they can serve as powerful decision-making tools (McClean, 2010).

These views are corroborated by COSO (2010), which states that the implementation of standards-based ERM does not reflect what happens in the decision making processes the real-world. This is especially true for the complicated risks emerging in the modern day business environment. Power (2004) points out that the general attitude towards decision making with regards to risk is to use one's 'common sense'; however, this does not lead to efficacious decision-making in the context of complicated risks. Aven and Renn (2009) further indicate that ERM implementation takes the form of particular steps that are sequentially applied and the consideration of specific variables instead of understanding the complicated cognitive processes that go into judgement and choice. Stacey (1992) stated that thinking of standards-based ERM processes in a prescriptive or deterministic way only leads to partial fulfilment of ERM implementation, which is characterised by the presence of few tangible elements of the overall ERM framework. Streatfield (2001) explains that this leads to a focus only on specifications rather than on efficacy of performance. It is for this reason that the current prescriptive and deterministic approaches to ERM cannot be used for accurate, real-life decision making processes. MacGill and Siu (2004) reiterate the point that the risks now confronting organisations cannot be precisely defined are multi-faceted, and complex. In this scenario, it is important to understand processes of cognition, how these processes impact individuals' concept of risk and the impact on decision making and organisational behaviour under the condition of risk and uncertainty.

According to Barton *et al.* (2002), risk management primarily involves decision-making that is designed to leverage the maximum gain from risk opportunities and/or to address either real-time or likely risk. Such decisions should also reduce the adverse effects that occur due to risk. Weick and Sutcliffe (2001) point out that the main focus of ERM is to build resilience through developing both capability and capacity, through innovation and improvisation, and by creating an organisational culture of risk mindfulness. Salas and Klein (2001) highlight that the deterministic method of making decisions under the condition of risk and uncertainty does not convey or capture the total gamut of decision-making dynamics that occur in real life, particularly at the organisational level.

The need for generic ERM standards to be developed is highlighted in the literature, with the point being made that the entire element of risk-based decision-making is ignored in ERM implementation processes (Shanteau, 1992). What may be inferred here is that in addition to developing specifications on ERM standards, it is also necessary to develop decision-making skills so that the standards that have already been developed can be efficaciously applied to realise optimal benefits. Crouchy *et al.* (2006) indicate that the most important task ahead in ERM is not just the formulation of quantitative measures of risk but also the development of human and cultural assets within the organisation that will lead to more efficacious ERM implementation. In this context Carlopio (2003), Kotter (1996), Maguire and Redman (2007) and Nash *et al.* (2001) all point out that the improper leverage of human and cultural factors cannot lead to organisational change, such as those changes required in times of risk. Similarly, Stulz (2009) states that the inability to handle change in real-time is the main reason for the failure of ERM implementation performed based on conventional approaches. Armenakis and Harris (2009) point out that a lack of readiness to embrace change or even the ability to manage change in real-time is one of the main human factors that pre-empts successful risk management. Ashurst and Hodges (2010) call upon the need for organisations to develop 'benefit-realising' capabilities amongst their members so that the right mix of skills is created that will enable individuals to take on the increased responsibilities required to improve ERM implementation inside the organisation.

It might be inferred that it is individual risk managers' ability to adapt and transform their own behaviour that determines the improvements made in ERM implementation. Dash (2006) and Olson and Wu (2008) point out that adaptive and transforming behaviour should be inculcated along with decision-making competencies at the cognitive level. In the context of ERM implementation, these factors are often neglected or treated with very little importance (Tabeb *et al.*, 2009). ANAO (2003), Barrett (2004) and Ernst & Young (2005) point out that although developing the right risk culture is highly important for the successful implementation of ERM, there is a huge lack of understanding about this very important construct. Ernst & Young (2009) add that this is because it is an ambiguous construct that is incompletely explained within ERM. Loosemore (2008) points out that risk culture is important as it creates the background whereby possible risks and opportunities may be immediately spotted by the whole organisation. The importance of risk culture in ERM implementation may be ascertained from the fact that it is associated with high levels of ERM capability maturity (Accenture, 2009; FERMA, 2006; KPMG, 2006). Lam (2003) asserts that it is critical to gain an understanding of how the right risk culture can be created and

disseminated at an organisation-wide level, given that best practice for ERM implementation is dependent on the existence of this very culture (Lam, 2003). According to Chorafas (2004), risk culture is a prerequisite for the effective implementation of standards-based ERM and entails incorporating a culture of active, continuous and actionable learning. Power (2009) also states that there will always be a gap between the aspiration and realisation of standards-based ERM, with a noticeable shortfall in expected benefits if human and cultural competencies and capabilities are not given adequate attention or harnessed adequately.

3.7 Gaps in the literature

Table 3-1, below, presents a summary of the discussed gaps in the literature:

Table 3-1 Gaps in the literature

Quadrant	Identified Gaps	References
Quadrant 1 – Gap Between Aspiration / Realisation in ERM Implementation	▪ Ineffective implementation of standards-based ERM ▪ Non–realisation of benefits of standards-based ERM ▪ Low capability maturity of standards-based ERM ▪ Scarce analysis of the ineffectiveness of ERM implementation ▪ A need to explore decision-making capability at the level of the individual leader ▪ A need to further investigate organisational culture in order to determine ways to bridge the gap between aspiration and realisation	Miccolis *et al.* (2001), Yates *et al.* (2003), SAI Global (2009), Hood and Jones (1996), COSO (2004, 2010), SAI Global (2009), Khoo (2012), Cooper (1997), Crouchy *et al.* (2001), Frame (2003), Lam (2003) and Sharman (2002), Abrams *et al.* (2006), AON Global (2010), KPMG (2006), Loosemore (2008), Accenture (2011), Ernst & Young (2010) Yechiam, E.; Hochman, G. (2013). Psychological Associates (2016)
Quadrant 2 – Gap Regarding the Nature of Corporate Risk	▪ A need to analyse the complete set of risks that modern organisations have to counter, and to address the ways in which ERM should be implemented to counter these risks	Frame (2003), Dickinson (2005), Aven and Renn (2009), Miller (1992), COSO (2004, 2010), Ernst & Young (2009), Young and Tippins (2001), Deloitte Touche Tomatus (2009), Accenture (2011), SAI Global (2009), World Economic Forum (2011), Athanassoulis and Ross (2010), Hermasson (2010), Goldstein and Spitznagel (2009), Tarantino (2006), Liebenberg and Hoyt (2003) Ulrey, S and Sargent, M (2013)
Quadrant 3 – Gap in the Literature on Risk Leadership and Decision Making	Heavy focus on leaders' general traits and qualities, with a need to explore the psychology of risk leadership in greater detail. The above gap is demonstrated in the lack of attention paid to the psychology of leadership in the existing frameworks, as summarised below: ▪ Trait theory – personal qualities and traits of leaders	Hartop and Koopman (2001), Yukl (1998), Derue *et al.* (2011), Kirk-Patrick and Locke (1991), Dean and Meyer (2002), Ginsburgh and Shiesmann, (1977), Stech (2004), House and Mitchell (1974), Dinh *et al.*

	▪ Cohen-Bradford framework – communication styles of leaders ▪ Psychodynamic theory – dynamics of sharing and communicating a common vision/mission ▪ Path-goal theory – systems of rewards and recognitions that motivate teams ▪ Contingency theory – importance of assertiveness and aggression in leaders ▪ Situational theory – leadership attitude and approach ▪ Full range framework – goal-setting processes of leaders ▪ Great Man theory – biographies of great historical leaders ▪ Stratified systems theory – ability of leaders to lead by direction ▪ Interactivity complexity theory – organisational structure ▪ Confusion as to how leaders make decisions: a need to explore the psychological processes involved in decision making and creating risk culture ▪ Specification of the necessity of developing decision-making skills without any explanation as to how and why such skills are to be developed. ERM standards assume the existence of sound judgement and decision-making ability at critical junctures ▪ A need to study which leadership style is best suited to risk management ▪ A need to explore the impact of gender on risk management ▪ A need to study the impact of societal culture on risk management	(2014), Gill (2011), Reddin (1970), Randell (2008), Avolio (2007), Murase *et al.* (2014), Feigenbaum (1993), Lichtenstein *et al.* (2006), Flin *et al.* (1997), Zsambok and Klein (1997), Klein *et al.* (1993), Klein (2003), Isenberg (1984), Schon (1987), Hammond *et al.* (1997), Goitein and Bond (2005), Maani and Maharaj (2004), Baron and Loomes (2001), Anderson (2003), Druker (2001), RIMS (2004), COSO (2004), Knight (2002), Chorafas (2009), Power (2009), Barton *et al.* (2002), Blanks and Dunn (2003), Accenture (2011), Haslam *et al.* (2011), AIRMIC *et al.* (2010), Stulz (2009) Ulrey, S and Sargent, M (2013) Psychological Associates (2016)
Quadrant 4 – Gap in Literature on Risk Culture and ERM Implementation	▪ A need to explore risk-based decision making in the ERM implementation process ▪ A need to achieve greater clarity on how risk culture can be established within organisations as well as the leader's role in its creation ▪ A need to study the ways in which the efficacy of ERM implementation can be improved through the organisation's human and cultural assets	Barton *et al.* (2002), Zammuto and Mitroff (2000), Lloyd (2005), Ernst & Young (2005, 2009, 2010), COSO (2010), Accenture (2011), KPMG (2006), Power (2004, 2009), McClean (2010), Aven and Renn (2009), Stacey (1992), Streatfield (2001), MacGill and Siu (2004), Weick and Sutcliffe (2001), Salas and Klein (2001), Shanteau (1992), Crouchy *et al.* (2006), Carlopio (2003), Kotter (1996), Maguire and Redman (2007), Nash *et al.* (2001), Armenakis and Harris (2009), Stulz (2009), Ashurst and Hodges (2010), Dash (2006), Tabeb *et al.* (2009), ANAO (2003), Barrett (2004), , Loosemore (2008), FERMA (2006), (KPMG, 2006), Lam (2003), Chorafas (2004), Power (2009)

Source: Researcher

Table 3-1 highlights key gaps in the literature related to psychology of leadership and effective ERM implementation. These gaps may be summarized according to the following categories.

1. The gap between aspiration and realization in ERM implementation. The literature acknowledges that the standards ERM frameworks suffer from the drawbacks of ineffective implementation, non – realization of benefits and low level of maturity. However, there is a scarcity of literature on why ERM frameworks have not been properly implemented leading to all these drawbacks occurring. There is the need to understand the role of the leader in bridging the gap between aspiration and realization.

2. The gap regarding the nature of corporate risk. There is a need to comprehensively understand the nature of corporate risk as it plays out in modern organizations. The different ERM frameworks are designed to treat different kinds of risk. However, a comprehensive understanding of all possible risks is necessary to formulate a comprehensive ERM framework that can be effectively implemented to counter these risks.

3. The gap in the psychology of risk leadership. There is a need to understand the modern theories on psychology of leadership, all the conventional psychologies of risk including focus on traits, qualities, behaviour, communication styles, situation, qualities such as aggressiveness and assertiveness etc. However, the particular psychological operations that take place during decision making under condition of risk and uncertainty and the psychological processes that leaders should use to influence other employees in order to create an organizational culture of risk should also be explored. There is a need to understand what type of leadership style is best suited to effective risk management and to explore how and why gender impacts risk management.

4. There is a gap in the literature on how an organizational culture of risk may be created and fostered. How the organization's human capital may be influenced in order to increase the effectiveness of ERM implementation needs to be examined.

Despite these gaps, the findings from the existing literature have been used to form a foundation to develop the framework comprising of psychological factors involved in ERM implementation that will be discussed in Chapter 4.

3.8. Conclusion

Enterprise Risk Management is a contemporary form of risk management and has been devised in order to counter various risks that modern organizations have to contend with. There are various kinds of ERM frameworks containing rules, principles and standards that

indicate how to contain existing risks and pre-empt future risks. However, the literature on ERM has revealed a gap between aspiration and realisation of effective ERM implementation. This means that current risk management practices and standards are not being implemented proactively or in a manner that can effectively counter risks impacting modern organizations.

The literature indicated that the implementation of ERM is primarily the responsibility of the senior leaders or the Board of directors of an organization. The implication is that the leaders of the organization should effectively implement ERM and any failure to do so is a failure of leadership. This means that there are additional psychological features that should feature in any psychology of leadership such that leaders are able to make rational decisions under the condition of risk and uncertainty and create an appropriate risk culture within the organisation. The constructs that have been identified from the literature as influencing decision making ability under condition of risk and uncertainty – including mental protective frames that lead to risk acceptance or risk avoidance, psychometric paradigms and bias - are purely theoretical and need to be empirically validated.

The literature also identified those elements contained in the new psychology of leadership that are necessary to influence people and create a culture of risk within an organization. This research does not minimize the conventional qualities and behaviour expected from a leader. However, the literature identified several changes that need to be made if leaders are to effectively others. A shift to a more collective from the current individualistic approach, collaboration, negotiation and development of a charismatic personality are critical in order to effectively influence others. In an ERM context, the literature indicated that the new psychology of leadership is related to collaborative processes that facilitate joint decision-making and teamwork to counter current and future risks. The extent to which organisational leaders can influence others to work towards this type of risk management process determines the degree of effectiveness achieved in standards-based ERM implementation and application. However, these are theoretical findings that need to be validated empirically.

This chapter has summarized the theoretical findings derived from the literature. Many of the theoretical factors related to the psychology of leadership need to be validated empirically. The following chapter will derive the framework which is based on these theoretical factors.

Chapter 4 – Developing the Psychology of Risk Leadership Conceptual Framework

4.1. Introduction

This chapter indicates how the conceptual framework of the psychology of risk leadership that can possibly lead to effective ERM implementation was derived. Researchers such as Rosa (2014) and Aven and Renn (2013) have pointed out that the manner in which standards-based ERM processes have been implemented have not resulted in the effective management of risk. This is because processes and guidelines do not compensate for efficient decision making processes at the level of the board of directors nor to the development of a risk culture within the organisation. Risk leaders have the ability to create an organisational risk culture and take risks in uncertain and risky environments.

However, the psychological aspects of risk leadership and its impact on effective ERM implementation have not been explored in the literature (Salas and Klein, 2014). Schneider and Shanteau (2015) point out that it is currently assumed that anyone involved in ERM implementation is also a risk leader. The aim of this chapter is to develop a conceptual framework that identifies the various psychological dimensions of risk leadership required for effective ERM implementation. The various ERM frameworks are first discussed, followed by the key psychological elements of decision making and organisational risk culture identified from the literature.

4.2. Evaluation of Current ERM Frameworks

According to researchers such as Slezak (2014), Minsky (2015), Kumar (2015) and Beasley (2015) ERM implementation has been ineffective in that many of the benefits of ERM have not accrued to the organizations that have implemented ERM programmes. These include greater transparency, corporate governance, security, cost savings, technological leverage, business continuity, preparedness for disaster, and regulatory compliance, as well as greater accuracy of financial disclosures, stricter norms for financial reporting and control, greater focus from organisational ratings, and the facilitation of the globalisation of the organisation's activities (SOA, 2008).

This research postulates that this failure in implementation is a failure of leadership amongst those senior managers entrusted with driving ERM programmes in their respective organizations. This failure may be attributed to faulty psychological processes of decision making and inability to lead others effectively to create an organizational culture of risk. This

section evaluates some of the ERM frameworks to examine if they indicate how decision making should be done under condition of risk and if they provide guidance on how to create a culture of organizational risk.

4.2.1. The Baumann Standards-based ERM framework.

According to Baumann (2012), the effective implementation of an ERM process depends on support from the internal organisational environment. This means that activities conducted within the organisation determine its ability to control risk. This internal organisational environment includes the belief system which together with written and unwritten rules, determine the risk culture of the organisation. External factors are also to be considered in order to determine which specific market events could potentially threaten the viability of the business. Simons (1999) indicates that this external analysis develops the risk appetite of the organisation, which reflects the amount of risk the organisation can accept or is willing to tolerate. According to Power (2007), an organisation's risk appetite is greatly determined by its risk culture. These views are consistent with the findings from the literature review: that the risk culture of an organisation determines the efficacy of its ERM implementation process.

Figure 4-1 Standards-based approach to ERM implementation

Source: Baumann (2012)

Setting objectives - The organisation's overall direction and governance principles are outlined at the objective-setting stage. The purpose of this is to ensure that an auditable risk culture can be created (Power, 2007). Kaplan and Mikes (2012) stated that it is very

important to mention the organisation's perspective on risk in the organisation's long term goals, or embed the concept of risk in the organisation's vision/mission. This then takes the form of a risk appetite statement that serves a guide for others in the organisation. Ganter and Hecker (2013) recommend that the statement explicitly incorporate views of different business divisions. This mission statement thus lays down the fundamental mission of the organisation and points the way for other employees to follow. Simmons (1999) points out that vision/mission statements are important as organisation values, beliefs and codes of behaviour all of which form the risk culture of the organisation, are derived from them. Executives demonstrate their obedience to these values by changes in their actions and behaviour.

Here again, risk management becomes a task that the entire organisation (and not just the board of directors) has to undertake. Here, the implication is that the creation of a risk management culture within the organisation plays a highly important role in the effective implementation of ERM standards.

Identification of risky events - According to Chapman (2011), in order to achieve effective ERM implementation, a comprehensive analysis of all possible events that may impact an organisation has to be conducted. This will identify the different risks that can potentially impact the organisation and its profitability. Hoy and Tarter (2012) point out that conventional data management system can only capture quantifiable risks, whereas even non–quantifiable risks have to be identified. This includes risks that have not been considered in the past, such as the impact of climate change or importance of brand value (Economic Intelligence Unit, 2007). Risk identification can also be performed using additional mechanisms such as brainstorming sessions, structured/semi-structured interviews and first scenario evaluations.

It is for this reason that risk identification processes are to be conducted by specialised person experienced in risk management. It is recommended the organisations employ a risk register that gathers perspectives on risk from all organisational departments and then creates a checklist outlining all potential risks to the organisation (Power, 2007).

Assessment of risk - Once risks have been identified, they should be prioritised and ranked. According to Sirgy and Wu (2012) this involves the formulation of a risk description. This description should include the context, risk evaluation, risk appetite, likelihood of occurrence and impact, if any. Each risk should then be ranked on the basis of this evaluation. AIRMIC

(2010) indicates that impact should be described, and that its chance of occurrence in the short/medium/long-term should be determined so as to determine whether it should be addressed operationally, tactically or strategically.

***Response to risk* -** The response to risk refers to the preventive action that should be taken to mitigate the intensity of a given risk. An example of this is to counter the risks involved in financial accounting by ensuring the accuracy of financial reports and documentation. Risk response can also occur in the form of a reaction, a focus on minimising exposure to a risk, or the leverage of the aftermath or impact of the risk once it has occurred. According to Chapman (2011), the specific response taken to risk will depend on the type of risk itself and should be met with definite action plans, implementation dates and potential impact analysis. Steinberg (2011) states that it would be better to formulate a risk response flow chart for greater comprehension of the various types of possible responses, and that formulating a suitable response is necessary for the realisation of objectives, and for maintaining the competitive positioning of the organisation.

***Activities to control* -** According to AIRMIC (2010) in order to control risk activities, appropriate policies and guidelines should be developed. The internal audit has long been a traditional means of internal control that secures compliance with organisational policies, adherence to government regulations, and to ensure ethical behaviour.

***Data and communication* -** According to Youssef and Luthans (2012), an essential element of the entire risk management process lies in data management and communications between various business divisions and teams. Power (2007) asserts that such communications are necessary for the correct assignment of roles and responsibilities, and for ensuring transparency regarding the same. In this regard, corporate communication assumes an important role as a control mechanism that ensures the quality of the risk management process. Chapman (2011) points out that communication can take the form of reports, communiques, press releases, newsletters and emails, both internally and externally, and in the form of a website/online presence. Wood and Tarrier (2012) indicate that to be truly effective, communication should be bi-directional, i.e. from the bottom up and top down. Such communication also plays an important role in developing the risk culture of the organisation.

It is further highlighted in the literature that a top management characterised by extreme hierarchy, reluctance to disseminate important information, or failure to engage employees in

discussing key issues facing the organisation prevents the effective development of risk culture (Simmons, 1999).

Monitoring **-** Monitoring is the last of the eight standard steps recommended for enterprise risk management. According to IRM (2012), monitoring ensures the effective application of measures, detection of failures and a reversion to the first step. In the ERM context, a major role has long been played by the internal auditor in monitoring risk management effectiveness.

Steinberg (2011) points out that monitoring also includes gathering feedback and assessing the data for the efficacy of risk containment. In this sense, monitoring does not conclude the risk management process but in fact initiates the first step. ERM thus becomes a cyclic or continuous process.

Evaluation - An evaluation of the Baumann (2012) standards based framework indicates that there is no mention of how to make decisions or how to create an organizational culture of risk. The psychological dimensions associated with decision making and organizational culture of risk has not been explored. It suffers from being merely a prescriptive method of implementing ERM. Slezak (2014) indicates that faulty decision making, lack of risk awareness through the organization and lack of proactive implementation are the main failures of most ERM frameworks. This view is corroborated by Minsky (2015) who indicated that the failure of ERM frameworks is due to a lack of proper risk management planning and implementation.

It may be inferred that these failures are on account of a prescriptive format proposed by most ERM implementation frameworks including the Baumann (2012) framework.

4.2.2. The COSO 2016 ERM Framework

The COSO (2016) ERM framework updates the original COSO (2004) ERM framework and its subsequent variations, such as the COSO (2012) framework. The 2016 version of the framework is demonstrated in Figure 4-2, below:

Figure 4-2 Main Elements of COSO 2016 E RM Framework
Source: PwC, 2016

The COSO (2016) framework recognizes that the board of directors / senior management have the critical responsibility for ERM implementation primarily related to the area of decision making. The framework is designed to provide support for rational decision making. In order to make more effective the decision making process under condition of risk, the COSO (2016) framework emphasises in 4 points.

Business Strategy Should Include Risk – According to PwC (2016) Boards of Director do consider risk management in order to adequately prepare for risk. However, research conducted by PwC (2016) shows that 80% of ERM implementation failures occur due to strategy mismanagement rather than to errors in operations or compliance. Hence the COSO (2016) framework supports execution but emphasises that risk should be considered during the strategic planning stage itself, so that the Board and the organization will have better strategies in place that are more effective in countering any risks that may arise from execution of strategy. The COSO (2016) framework breaks risk alignment and strategy into three different dimensions:

Risk Related to Strategy – Potential risks that may arise during strategy execution should be identified. This will also indicate when strategy needs to be revisited.

Strategy Implications – the implications to the organizations arising from identified risks due to implementation of a particular strategy should be considered to help the organization during execution.

Risk Alignment – considers how strategy (including risks) may be aligned to the mission, vision and core values of the organization.

The ultimate goal of the process outlined above is based on the assumption that strategy implications and the risk of a strategy not getting aligned with the vision / goals of the organization have very serious impacts on business performance. In order words, the outlined steps serve as a means of constructing a risk profile of strategy that a business may adopt. In this way, ERM facilitates selection of strategy rather than focussing on risk after strategy is selected.

Reframing Risk in Terms of Business Performance – The COSO (2016) framework seeks to reduce abstractions related to the concept of risk more concrete by considering risk in the context of performance. It assumes that fulfilling business goals requires some risk taking and these risks cause variations in performance. Hence it is erroneous to consider business objectives / goals apart from associated risks. The revised COSO framework clearly indicates how performance goals are to be set up and the various variations or changes in performance have to be considered in terms of risk. It emphasises that risk and planning for risk are fundamental to and central to any decisions taken with respect to business and are not separate from it. The COSO (2016) framework talks not just about business but about risk.

This encourages considerations of risk throughout the company and the development of a risk aware culture. This in turn enables the organization to get more value from their ERM implementations.

Organizational Culture – COSO (2016) takes the view that organizational culture comprising of shared behaviour and mindset is as unique as strategy. Some organizations are more aggressive in strategy as compared to others who may have less risk appetite where culture determines strategy. COSO (2016) recognizes that changes in culture may be more difficult to achieve than changes in strategy and hence risk and culture should be properly aligned. COSO (2016) places great importance on culture and employee behaviour. Here again, the emphasis is on the Board of Directors and senior management who are largely responsible for setting behavioural norms and determining organizational culture. It is organizational culture that reflects the core values of the organization and the attitude of employees towards risk. It is the organizational culture that drives behaviours involve in daily decision making.

The COSO (2016) framework emphasizes the requirement to create a risk – aware culture over time as it is culture that impacts organizational practices, the way risk is managed, decision are made and opportunities are pursued. In fact, how well strategy gets executed depends on culture.

Integration of Internal Control – According to COSO (2016), ERM and internal control are complementary activities and not separate from each other. They have to be considered jointly in terms of performance. However, they have different focus. While internal control is related to objectives on operations, compliance and reporting, ERM emphasizes on strategy planning, allocation of resources and decisions related to risk response. COSO (2016) states that effective internal control is important for successful ERM implementation, but internal control will not ensure performance. Conversely, ERM that is not based upon effective internal control will not only inhibit performance and also drive the organization towards different hazards. Optimal performance will not occur without controls and ERM together.

Thus COSO (2016) recognizes that internal controls have to be considered within the overall framework of ERM.

Evaluation - An analysis of COSO (2016) indicates that it is concerned with updating the principles of ERM and identifies key stakeholders in the management of ERM processes. It recognizes the importance of decision making and organizational culture. However, it does not address how ERM should be implemented and those leadership qualities in senior management entrusted with its implementation that would lead to effective ERM implementation.

4.2.3 The New Zealand Transport Agency (NZTA) (2013) ERM framework

The NZTA (2013) ERM framework defines risk as the 'uncertainty of the organisation achieving its business objectives'. The risk is something negative indicating a threat to the achievement of the organisation's objectives, or an opportunity to achieve organisational objectives faster and more efficiently. This corresponds with the definitions of risk given by Denk and Exner-Merkelt (2005) and Aon Corp (2009). The NZTA (2013) framework is a four-stage process framework for ERM comprising risk governance, risk management foundations, risk management implementation, and the monitoring and review of the framework itself (see Fig. 4.3).

The first stage of risk governance entails mandate and commitment. The mandate for risk management is to be provided by the board along with the organisation's senior leaders, under the NZTA (2013) framework. This is in accordance with the findings of Dafikpaku (2011), HBR (2013) and Yilmaz (2008), all of whom indicated that the success of ERM implementation depends on mandate and commitment from senior management and, particularly, from the board of directors.

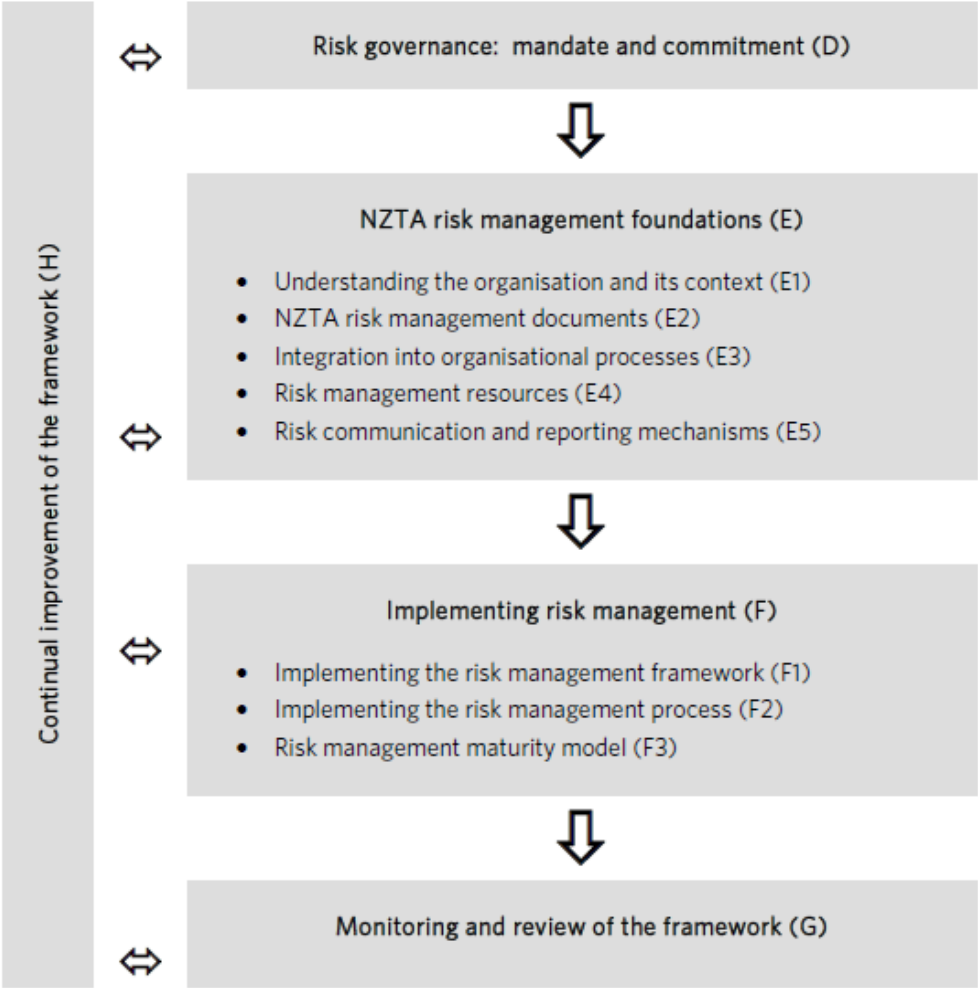

Figure 4-3 NZTA (2013) ERM framework

Source: New Zealand Government (2013)

The second stage of the NZTA (2013) ERM framework is the risk management foundation, which comprises most of the stages described in the Baumann (2012) framework and the revised COSO (2016) framework, including assessment of the business environment in which the organisation operates allocation of resources for risk management and risk communication and reporting mechanisms. The third stage relates to implementation. The NZTA (2013) ERM framework has laid down a process for the identification and treatment

of risk. This includes risk recognition, ranking of risk, response to risk defined in terms of tolerating, treatment, transference and termination, allocation of resources, reaction planning and reviewing the effectiveness of risk treatment. In the fourth stage, the ERM framework is monitored and reviewed.

Evaluation - Since the NZTA (2013) framework fails to outline the necessary conditions for effective implementation, instead only prescribing the processes that need to be implemented to address risk, this represents a noted limitation of the framework.

4.2.4 The Toronto Transit Commission (TTC) (2015) ERM framework

The TTC (2015) risk management framework, illustrated in Figure 4-4, provides a mechanism for managing uncertainty in organisational objectives. It provides a structured means for improving the likelihood that business objectives will be met with success and provides greater confidence and assurance to all stakeholders of the organisation.

Figure 4-4 TTC ERM framework

Source: TTC (2015)

The TTC ERM framework identifies the key stakeholders in ERM implementation as the board of directors, audit and risk management committee, risk and governance committee and the employees of the organisation. This framework acknowledges that the board is responsible for ensuring the effectiveness of ERM implementation, as with other ERM

frameworks. The various steps involved in ERM management include communication and consultation with stakeholders, establishing the context, risk identification, analysis, evaluation and treatment of risk, as well as the monitoring and review of risk.

Evaluation - The TTC ERM framework does indicate the processes that should be implemented to treat risks, but it does not indicate the necessary conditions for the effective implementation of these processes.

4.2.5. Overall Evaluation of The Frameworks - In the above frameworks, the ERM standards that contain risk has already been formulated. However, there is a gap in the implementation of standards by the board of directors. The reason for this can be traced to faulty decision making and an organisational culture that does not support risk. Both decision making and the ability to create an atmosphere of risk work together to form a psychology of risk leadership. The literature proposes that the two qualities distinguishing risk leaders from general leaders are the ability to create risk culture within the organisation and decision making. However, these proposals are yet to be validated. Whether there exist any additional qualities / behaviours / traits that distinguish risk leaders from regular leaders against these two dimensions will be ascertained in the analysis of the primary data collected during this project.

The ability, or lack thereof, to make rational decisions under the condition of risk and uncertainty, and to create an organisational culture of risk, will either facilitate or hinder the proper implementation of ERM standards. It is predicted that the development of risk leadership will lead to the proficient implementation of ERM, which in turn will lead the organisation to accrue several benefits.

4.3. The role of decision making and organisational culture in ERM

This section summarises the key gaps in the implementation of ERM standards by risk managers and provides justification for conducting the research. The literature demonstrates that board of directors' implementation of ERM processes is largely ineffective despite the framework providing a comprehensive structure through which to assess and handle risk. One key area of ambiguity is in the impact that risk has on an organisation's introduction of risk culture (Power, 2007). Thus, whether or not it has succeeded in embedding the concept of risk in the members of an organisation and developing an appropriate risk attitude in them is open to debate. Kaplan and Miles (2012) point out that the ambiguities surrounding the concept of risk appetite results in problems in ascertaining how much risk the organisation

can tolerate. Because of this, standards-based ERM is implemented in such a way that it leads organisations to become over-optimistic regarding their ability to control risk. This is unrealistic, leading to biases in decision making (Kaplan and Miles, 2012).

Given this situation, the Economic Intelligence Unit (2007) recommends that the behavioural side of risk should also be considered in order to effectively implement ERM standards. Goto (2004) corroborates these views, pointing out that the human factors involved in decision making processes have to be considered for effective risk management, and only such considerations can pre-empt irrational decision making due to factors such as bias.

The above points support the findings from the literature review: that human factor amongst leaders should be taken into account in order to achieve effective risk management, especially given that they are shown to be associated with the creation of risk culture as well as with decision making. Nutt (1989) points out that risky decision are characterised by confusion, dispute and uncertainty. However, they become 'bad' or 'wrong' decisions when confusion, dispute and uncertainty are ignored or assumed away during the decision-making process. Slovic (2000) indicates that faulty decision making and reasoning processes are the main reasons for wrong decisions being made at a time of risk. Hence, Slovic (2000) concluded that decision making under the condition of risk and uncertainty differs from decision-making processes under normal circumstances.

There are special requirements in terms of data processing, task complexity, time pressures, ways and points of responding, and other context-related issues for risk-based decision making. It is suggested that depending on the situation, the most suitable option is not necessarily always the option that carries the least impact in terms of risk (Ritchie and Marshall, 1993). Sikin and Pablo (1992) also state that a decision should be based on the definition of the problem, analysing other alternatives, considering the context of environment and organisation. Fischhoff *et al.* (1981) make the point that choice of the most appropriate decision under the condition of risk is dependent not only on the characterisation of the risk itself but also on the interpretation and comprehension of the context surrounding the risk situation. Rettinger and Hastie (2001) opine that decision makers should aim for a decision-making approach that is diverse and flexible, and that the decision should be comprehensive, logical, sound, realistic, transparent and in line with organisational values and culture. Rettinger and Hastie (2001) also propose that this decision-making approach should be facilitated by an organisational culture that supports continuous learning in such a

manner that the decision-making process and the application of such processes may be constantly improved.

It may be inferred here that the risk inherent to the most acceptable option in a scenario of risk and uncertainty is highly subjective. Rasmussen (1997) corroborates this view, stating that that there are no universally accepted risks for any particular decision or option. This is because every decision should be determined in the situational context in which it is being made, and there is no definitive method for making the most acceptable choice. Tierney (1999) extends this argument by pointing out that there are no value-free methods that can be used to make the most acceptable decision. This is because there is always a certain element of risk to the organisation present in all acceptable decisions, and this risk will be determined by the organisation's market, operational mode, and unique nature. The degree of risk contained within any decision depends on the type of judgement, the kind of interpretation that makes meaning out of the risk situation, and the context in which such meanings are derived at both the individual and organisational levels.

The implication here is that ERM decision making and implementation takes places against a backdrop, atmosphere and environment that is complex, and that includes various levels or layers of decision-making processes, each of which is socially constructed with many interrelated activities and technologies being taken into consideration. Taplin (2005) points out that it is for these reasons that ERM implementation takes on different meanings for different organisations. There is an urgent need to develop generic processes of decision making that extend beyond the conventional deterministic conception currently being followed.

According to the constructivist view of researchers such as McDaniels *et al*. (2006), decisions should be both mentally and logically constructed. This perspective acknowledges that decisions can never be completely accurate and always contain some element of subjectivity. It is this subjectivity that introduces some element of risk, since the possible outcome of the decision can never be accurately predicted and determined in full. In contrast, realists assert that since the level of risk inherent to any decision can only be estimated and quantified through technical processes, the decision-making process should be purely technical in nature (Klinke and Renn, 2002). Action taken to mitigate risks should be subsequently undertaken on the basis of such technical assessments. This is regardless of the beliefs and views of the decision makers themselves.

With regard to the realist perspective of decision making, Slovic (2000), Weber *et al.* (2001) and Peters and MacGregor (2004) point out that such an approach, in an ERM context, may be better suited to the consideration of routine issues where the goals are known. These are applicable to probabilistic models of decision making, which operate in an atmosphere of some certainty and where rational, analytic rules and algorithms are already in operation. This reflects the deterministic perspective of ERM decision making adopted by the majority of organisations today. However, Rosmussen and Borch (2003), Senge (2006) and Holt (2004) all point out that in the real world, the risks that confront business entities are the result of organisations' interactions with society, other organisations, and operational and technical factors. Beattie and Barlas (2001) indicate that risks are usually interdisciplinary and occur in a highly pluralistic society. Here, problems are ill-formulated, information is unclear, stakeholders demonstrate conflict of opinions and values, and the ramifications for the system as a whole are ambiguous. Senge (2006) opines that in this dynamic, complex and interdependent system, risks have to be complex and complicated. They are rarely simple and/or quantifiable. According to Holt (2004), risks occurring in the real world are both 'wicked' and 'messy', and their management is a value-driven process necessitating criteria and trade–offs that may be utilised to ascertain both acceptability and tolerance limits.

Klinke and Renn (2002) further classify risks into both emergent and emerging risks. Emergent risks are still latent and have not yet been perceived, though they may still be known at a particular point in time. Emerging risks are those that are completely new and novel. Bammer and Smithson (2008) stated that the context of emergent and emerging risks is one of ignorance, which in turn results from data that is incomplete, unavailable or inaccessible. Because there is so much ignorance surrounding these risks, Peters (2005) states that they are treated as sensitive subjects and not discussed by decision makers. They are considered as something unknown to managers or to those who may be impacted. Their impact is considered to be delayed and not easily observable. Such risks are therefore not defined, not documented, not scientifically analysed, nor anticipated. Douglas and Wildvsky (2002) argue that such risks can neither be known nor predicted, and there is a need to develop precautionary strategies that incorporate the required resilience to deal with them as and when they occur. Vaughan (2009) points out that resilience, in turn, requires a high awareness of the organisational environment and its key areas of vulnerability.

It is also suggested that in order to mitigate unknown risks, they should be accurately and effectively detected early on (Weick and Sutcliffe, 2001). In order to appropriately manage emergent risks, business entities should develop a culture of risk mindfulness. Such risk

mindfulness will create business processes that can counter and suitably tackle risky situations as and when they occur, or even before they occur.

Stacey (2002) points out that risks that are wicked, messy or the outcome of ignorance will continue to impact the organisation due to the presence of interdependent, complicated and complex processes. The implication here is that proficient risk management, which counters complexities in risk, is dependent on the renewal and expansion of risk knowledge and the capacity to continuously regulate and grow the body of risk knowledge. In this context, it is argued that more accurate decisions cannot necessarily be made purely as a result of the availability and accessibility of data (Batha and Carroll, 2007). Rather, Klayman and Hastie (2008) point out that it is more important to manage knowledge about risk and the nature of risk. Here, MacGill and Siu (2004) indicate that the way to build knowledge of risk is through multidisciplinary discourses with diverse members, through the sharing of knowledge, and by improving the quality of information.

It is this that can result in knowledge that carries some meaning, points to a particular direction, is relevant and can be acted upon. Without such information, there can be no meaning made out of risk, and a lack of understanding that results in faulty decision making. This, in fact, increases the likelihood of risk, hence the importance of leaders developing the ability to make sense out of risk and to communicate that meaning to others in the organisation.

These views corroborate the findings of the literature review, where meaning-based decision making processes have been recommended as the best way to make decisions and act on the basis of such decisions in situations of risk and uncertainty. According to Sitkin and Weingart (2005), attempting to make sense or derive meaning out of a risky situation is more important than decision making processes that are purely technical. This is because meaning-making reveals, clarifies and constructs concepts that are hidden, latent or not previously known. These include aspects such as attitude towards risk, perception, preference, propensities and risk culture. Wagner and Gooding (1997) point out here that meaning drives conation, which is an action that is deliberate and objectively-oriented, self-directional and self-regulatory. Both the individual and the organisation are then able to access the meaning derived from the risky situation. Finucane and Holup (2006) indicate that conation can also refer to the decision not to act based on the meaning derived from a situation of risk. Boholm (2003) pointed out that conation links sense-making / meaning-making to risk preferences, the propensity to take risk and to action related to risk. This is different from motivation, which is a purely mental construct that determines attitude. According to Boholm (2003), since

conation impacts both intention and action, it is considered to be of greater importance than motivation in the context of risk.

MacCrimmon and Wehrung (1986) indicate that the literature on decision making is mono-disciplinary and focussed on decision making/risk taking behaviour at the individual level. In this context, Shapira (1995) and Yates (1992) point out that managers' decision making has to incorporate diverse points of view in order to include greater knowledge and disciplines. This implies decision making to be more than an individual-based process. These views corroborate those of risk researchers such as Hatfield and Hipel (2002), Renn (1998) and Rosa (2010), in that risk has to be considered from both the social and scientific perspectives. According to these researchers, an understanding of risk needs to be constructed. It is not immanent within the individual. In order to do this, the knowledge systems that feed risk-determining mechanisms have to be extended beyond explicit scientific data, with the range of mechanisms being multiple viewpoints that are equitably distributed amongst the larger body of stakeholders. This reflects the social constructivist view of risk construction favoured even by early researchers such as Berger and Luckmann (1975) and Gergen (1999).

The ERM literature has not yet addressed the impact of organisational culture on meaning/sense-making, leading to conation and action, as well as its inability to shape risk-oriented behaviour. Tetlock (2003) points out that organisational culture should be taken into consideration since it influences both the perception of risk as well as risk communication. Culture influences accountability, thinking processes and choices as well as the processes that determine both purpose and identity. However, organisational culture tends to be treated as a black box by which risks that cannot be otherwise explained are regulated. These views are extended by Goto (2007), Shanteau (2000) and Taylor *et al.* (2006), who all point out that ERM implementation has to be examined beyond the current economic and technical approaches. In addition to these aspects, key psychological and sociological points of view should also to be taken into account. This calls for a departure from a purely positivist or deterministic approach to examining ERM implementation to a constructivist perspective that is more attuned to examining the risks that occur in real-life situations.

Having determined that rational decision making under condition of risk and the ability to create an organizational culture of risk are the two dimensions of psychology of risk leadership, the following sections will indicate the various factors or variables that influence psychology of risk decision making and psychological factors involved in organizational risk culture creation.

4.4. Factors Related to Psychology of Risk Decision Making

According to Crouchy *et al.* (2006), exposure to risk has both physiological and psychological effects, which impact the decision-making capability of managers. Apter (1992) points out that all humans approach risk in two different ways, based on two fundamentally differing perspectives of risk or danger. The first approach is a thrill-seeking perspective, where individuals perceive the excitement inherent in all risk. The other approach is that of anxiety, and occurs amongst those who seek predictability in all things. Kalat (2013) termed individuals who subscribe to the first approach as being 'risk seekers' and the latter to be 'risk averse'. Barnabei (2008) states that risk seeker are confident individuals who seek out extreme risk and take decisions without any trauma occurring to them. However, 'risk averse' individuals are motivated by being safe from danger and the feeling of harm and can exist in a state of comfort and equilibrium by taking the decision of avoiding risk altogether.

Researchers such as Cohrs *et al.,* (2013) and Barnabei (2008) highlighted the 'detachment' frame of mind where the individual may be exposed to risk but does not feel threatened, does not avoid anxiety and does not seek excitement. This frame of mind according to Cohrs *et al.,* (2013) is the best possible frame for evaluating risk, as it eliminates the subjectivity inherent in the risk seeking and risk averse frames of mind. Due to the absence of emotion, it is possible to objectively evaluate risky situations and make decisions accordingly. It may be inferred here that excitement, anxiety and detachment are the psychological factors that impact decision making in a risk-filled corporate context, such as in the case of ERM. This analysis leads to the formulation of three psychological dimensions associated with risk decision making namely '**Risk Seeking'**, '**Risk Averse**" and "**Detachment**".

Another psychological factor explored in section 2.2.2 of the literature review that is associated with decision making is that of psychometric paradigms or the tendency to make decisions based on popular opinions at the time of risk. According to Donaldson and Ko (2015), Paradigms are popular viewpoints based on previous experience and in the context of risk, reflect the phenomenon wherein managers use both past experience and the public perception of risk paradigms to arrive at decisions, especially during times of uncertainty. According to Breakwell (2007), public perception is relevant to decision making as it influences the individual's attitude towards risk. Derby and Keeney (2003) also state that risk is subjectively perceived by the individual, who is always subject to psychological, societal and cultural factors. Derby and Keeney (2003) further point out that public perception of risk

can be faulty since it is based on the three factors of voluntariness, awareness and fear. "**Psychometric paradigms**" may be therefore considered to be another psychological factor associated with decision making under condition of risk.

In section 2.3.3 of the literature review, the psychological factor of bias was explored in the context of decision making under condition of risk. According to Bildung (2013) bias refers to those factors that prevent persons from making rational decisions. Barone-Adesi *et al.* (2012) termed bias as the 'human factors' that pre-empt effective decision making, whilst Kahneman and Tversky (2009) indicate that bias occurs due to heuristics or processes of thinking or mental attitude under the condition of risk. Kahneman and Tversky (2009) suggest that human decision making under the condition of risk is based on attitude, intuition and personal information rather than on information or data, and that individuals cannot deal with uncertainty. This means that individuals have a limited ability to predict future events where the outcomes are uncertain and to rationally analyse information to make informed decisions. Kahnemann (2003) points out that in order to make sense out of perceived situations that may be ambiguous, decision making is influenced by the unconscious mind, which in turn is influenced by emotions and society. Hartman *et al.* (2012) state that both emotion and societal opinion combine to form misconceptions called 'bias' that impact the individual's ability to judge events and make decisions rationally. Hence "**Attitude**" and "**Bias**" may be considered to be another psychological factor that impacts rational decision making under condition of risk and uncertainty.

According to Charness and Gneezy (2011) there is strong evidence that suggest men and women make decisions differently under condition of risk and uncertainty. It was found that men are more willing to take financial risks, while women are more financially risk averse than men. Harris and Jenkins (2016) stated that in the real world, in general, men take more risks than do women. This is because men more optimistically judge probability of good outcomes of decisions taken during risk, while women are more likely to perceive negative outcomes of such decisions. Booth and Nolen (2015) acknowledged that there are differences in the ways males and females approach problems and proposed that gender differences in reactions to risk are more the outcome of social learning where girls are conditioned to be more risk averse than boys. It may be implied therefore that ways of thinking related to "**Gender**" is another psychological factor related to decision making under condition of risk and uncertainty.

Research conducted by Laban (2014) indicates that the culture in which an individual is reared in or in which the organization operates impacts decision making under condition of risk and uncertainty. Culture is a function of social networks and cultural norms. In general, those individuals hailing from collectivist cultures form more social networks than do individuals hailing from individualistic cultures. The former individuals are more likely to take risks within their social networks, whereas the latter will take risks even without the support of social networks. Duckworth and Steen (2015) corroborate these findings by pointing out that persons from individualistic cultures such as those from the United States or the United Kingdom are more risk seeking as compared to those from collectivist cultures such as those hailing from South East Asia. Mihet (2014) studied risk taking behaviour amongst 500 organizations from across the world and found that risk-taking is high for those organizations which have low aversion to uncertainties, low tolerance for hierarchy and are highly individualistic. Those organizations operating in a cultural environment which is highly averse to risk and highly tolerant to hierarchy are less likely to take risks. Hence from this analysis "**Individual Culture**" and "**Surrounding Culture**" may be considered to be other two psychological dimensions associated with decision making under condition of risk and uncertainty.

Based on the above analysis, the psychological factors related to decision making under condition of risk and certainty may be summarized in figure 4-5.

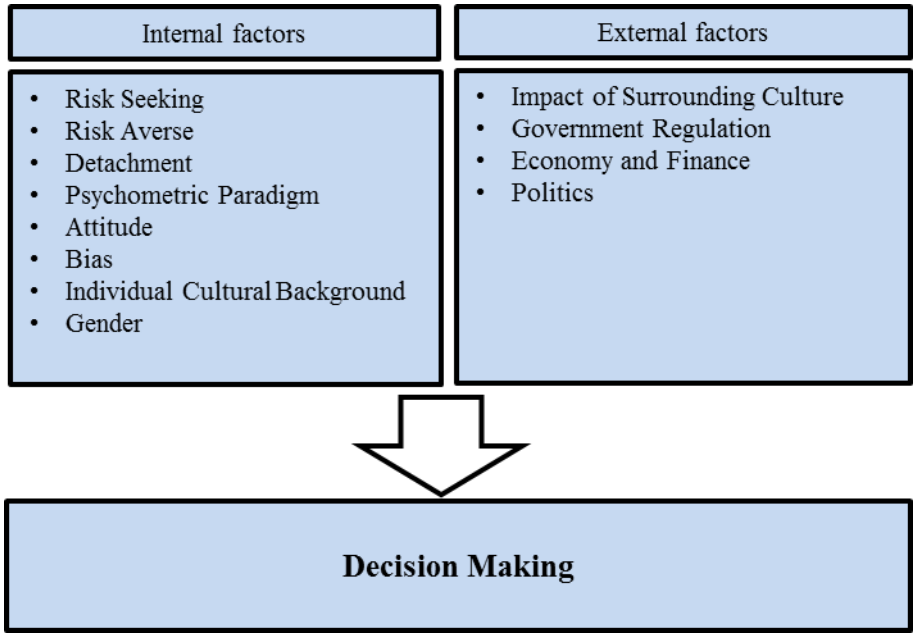

Figure 4-5 Psychological Factors Impacting Decision Making Under Risk

Source: Researcher

It may be noted here that all of these theoretical factors need to be empirically verified in the context of decision making under condition of risk and if there are any more factors, these too have to be identified.

4.5. Factors Related to Psychology of Creating Organizational Culture of Risk

This section indicates those factors through which modern leaders can assert psychological influence on followers in order to engage them in creating risk culture within the organisation.

According to Drucker (1992), the most important difference between the old and new psychologies of leadership is that modern leaders never say or think 'I', but rather place the emphasis on their teams. This new psychology of leadership places more importance on the 'We-ness' of the leader and their team rather than on the 'I-ness' of the leader alone (Gatto, 2015). Thus, leadership is a group process, wherein leaders and followers work together in a shared effort, rather than being an individual process involving individualistic thought and action (Mills *et al.,* 2014). A psychological connection has to be forged between leaders and their acolytes, where followers are enthused to follow leaders who are perceived to be 'one of us' compared to 'one of them' or 'only for themselves' (Huse, 2007). Thus the ability to think in terms of a "**Team Player**" or in terms of "We" rather than in terms of "I" alone is an important psychological factor impacting the ability of a modern leader to influence others in his team.

Another psychological factor is the the leader's capacity to embrace and promote a psychology that may be shared with their followers. According to Schui and Krampen (2014) individual qualities and personality traits that old psychologies of leadership focus on have limited means on influencing the hearts and minds of others. Modern effective leaders recognise their role in ensuring that the team delivers on the given task, and they are able to identify strongly both with this task and with their team of people. Bligh *et al.* (2006) corroborates this view by stating that leadership is not about telling or getting people to do things, but about making the people want to do things. Wong (2014) stated that leadership shapes belief, desire and priorities, and that it is more about influencing others rather than just ensuring compliance. The implication here is that leadership is about more than just individual qualities and personality traits; because these factors do not necessarily secure the voluntary compliance of others, nor do they necessarily motivate or create passion amongst team member. The inference here is that "**Team Aspiration**" or compatibility between the

personal qualities and aspiration of the leader and the aspirations of the team is another psychological factor that determines the modern leader's ability to influence others.

According to Wright and Lauer (2013), leadership is a dynamic concept that should be considered in relation to the individual's surroundings, followers and social context. Rosing *et al.,* (2014) stated that the various qualities of leadership were important only in relation to the context in which the various individuals operated in. That is, different situations and contexts call for a different form of the same attributes, and leadership cannot be studied in isolation from the context in which it is required. Stodgill (1994) argued that leadership research should incorporate the leader's social environment in addition to individual-level factors. The implication here is that leadership is always tied to context, with leaders' personalities being a product of the context in which they live and operate and that leaders should be "**Sensitive to the Context**" or "**Sensitive to the Perspective**" in which risk occurs, moving beyond his/her own mental world

Charisma has been termed by Cialdini (2001) as the mental 'glue' that merges leaders with their followers and is critical to leaders securing commitment from their followers, and encouraging and driving them to move together in one particular direction. Lopez and Snyder (2014) states that charisma is that is conferred upon leaders by their followers. Harzer and Ruch (2013) point out that charisma is related to the way in which followers come to see leaders as an important and vital part of a larger group. Charisma is dependent on whether leaders are perceived to be part of the team, as team players, and as being able to further the achievement of a common goal. Godin (2015) stated that through charisma, leaders influence groups to realise common goals and help to create an environment in which their values are expressed and potential gets actualised. Thus "**Charisma**" maybe considered being another psychological factor that impacts the leader's ability to influence others in the organization.

Leaders should be perceived as advancing the interest of their followers, and not simply 'feathering their own nests' or serving the interests of other groups (Froman, 2014). Bhatnagar (2012) points out that only when leaders are perceived to promote the interests of their followers that the latter will be influenced to co-operate wholeheartedly with the group effort of turning vision into reality. The new psychology of leadership does not consider the individual alone but all of the followers and lower echelons of management who convert ideas into action. Here, Adams (2012) points out that the influence of the individual is very important but that it is also important to understand how the psychology of the individual called up on to lead the group is transformed when they participate in shared activity. Thus

creating a perception of furthering the "**Interests of the Team"** is another psychological factor in a leader's ability to lead people.

The new psychology of leadership emphasises a leader's ability to engage in "**Group Activity**". According to Avey *et al.,* (2011) it is not enough to relegate the task of risk management to risk management committees or a board of directors alone. Instead, a culture of risk management should be built within a top-down and bottom-up structure. It is the board of directors together with the CEO, the executive management team, business leaders and the chief risk officer that together assume responsibility to develop risk culture within the organisation. Adams (2012) point out that risk leadership has to be developed not only amongst board members, but also amongst personnel in second and third lines, including risk managers and compliance, credit and internal audit sections.

According to Maitlis and Lawrence (2007), leaders have to be 'makers' and 'givers' of sense in the context of risk. Leaders are makers because their main responsibility is to interpret the risky situation and derive meaning from it, and they are givers because they also have to disseminate these meanings to others in the organisation and guide them to make sense out of risky situations. Goepel *et al.,* (2014) state that it is important to understand how symbolic realities of real-world situations are constructed, in order to appropriately and correctly manage realities of risk. Nathan (2004) points out that deficiency in the sensemaking of risk results in compromised decision making. Sensemaking thus becomes a process that takes into account worldviews and contexts that reveal risk decision-making processes at the organisational level. Kern *et al.,* (2014) argues that mature sensemaking capabilities should be built if efficacious risk management is to be realised. Klein (2007) suggests that such sensemaking processes make the nature and reality of risk confronting the organisation transparent and ultimately influences both goal setting and risk coping strategies. Thus "**Sensemaking**" may be considered to be an important psychological factor in the development of a culture of risk.

According to Lineley *et al.,* (2013) sensemaking should result in the organisation of cues into frameworks which in turn should drive action. These cues are enlarged through sensemaking processes into a framework that is comprehensive, can be interpreted, and drives action. This occurs through a discursive process between leaders and others and involves conflict, discovery, construction, interpreting and describing. Klein *et al.* (2007) point out that the outcome of such processes is not necessarily action and can be the realisation that action should not be taken. That is, sensemaking refers to processes of constant framing and

reframing. It involves putting data into a framework that is constantly filtered, tested, interpreted, improved and Adopted in accordance with newer meanings derived through discursive processes. This process of constructing and reconstructing data occurs at both the individual and collective levels within the organisation. Thus the "**Ability to take Action and Inspire**" is another psychological factor that determines leaders' proficiency in leading others.

Risk decision making is more than just the interpretation and formulation of meaning through sensemaking. Dutton and Jackson (2008) pointed out that is also related to the methods of generating insights with its constraints and possibilities. Smirchich and Stubbart (2005) stated that the outcomes of sensemaking should evoke a response. Sensemaking creates symbolic realities out of risky situations, which the organisation then uses to cope with that situation. The implication here is that the more a leader is able to define the identity of the organisation for his/her followers, the more meaning can be extracted from a risky situation and the fewer surprises there will be to cope with. Weick and Sutcliffe (2001) term this phenomenon 'anticipatory risk awareness'. Thus the "**Ability to Identify Risks / Opportunities**" is another psychological factor that determines leaders' proficiency in leading others.

The leaders' perception of the environment impacts their role as a sense-giver. Worldviews refer to the beliefs, inferences and restrictive statements about what exists and what does not exist, what events are good or bad, and what attitudes, goals, actions and relationships are desirable or undesirable (Rivera, 2004). Worldviews therefore determine an individual's attitude towards, and perception of, risks Rietzschel (2014). Bogozzi (2002) points out that worldviews explain why some individuals prefer developing strategies that address the situation of risk directly, whilst others prefer to address the situation or effect triggered by the risky situation. Thus "**Worldview**" is another psychological factor that determines leaders' proficiency in leading others as decisions and actions arising of the leaders' worldview impact others in the organization.

The role of transformative learning has to be explored in the context of leadership and the establishment of risk mindfulness. Sirgy *et al.*, (2016) point out that risk decision-making proficiency is a learnable skill, According to Batha and Carroll (2007), developing a risk decision-making ability involves increasing the amount of risk knowledge that can be actioned upon and the associated cognitive capacity that monitors, regulates and effectively uses that knowledge. Kienholz (2009) states that through these processes, individuals develop a greater awareness of their own modes of inquiring into risk phenomena, how they go about collecting data, their preferred style of working, how they ask questions, solve problems and

arrive at decisions. Kostanski and Hassed (2008) state that in this way, they become more aware of and attentive to their own cognition levels, become emotionally sensitive, and better understand their motives. To develop the competencies that lead to enhanced decision making and action capability, Smith *et al.* (2003) recommend a process of 'learning how to learn' or 'transformative learning'. Thus the ability to "**Transformatively Learn**" becomes another important psychological factor in risk leadership.

Based on the above analysis, the psychological factors related to building an organizational culture of risk may be summarized in Figure 4-6.

Figure 4-6 Psychological Factors Impact Organizational Culture of Risk

Source: Researcher

Empirical verification is required for all of the above theoretical constructs, with additional constructs also requiring identification if applicable.

4.6. Development of Framework

From Sections 4.5 and 4.6 the psychology of risk leadership has been found to be related to rational decision making and the ability to influence others to create a culture of organizational risk. The various variables that are included in each of these dimensions have also been derived from the literature. It is assumed that these two dimensions will provide leaders the ability to effectively implement ERM programmes. The conceptual model that has been derived on the basis of this analysis is indicated in Figure 4-8.

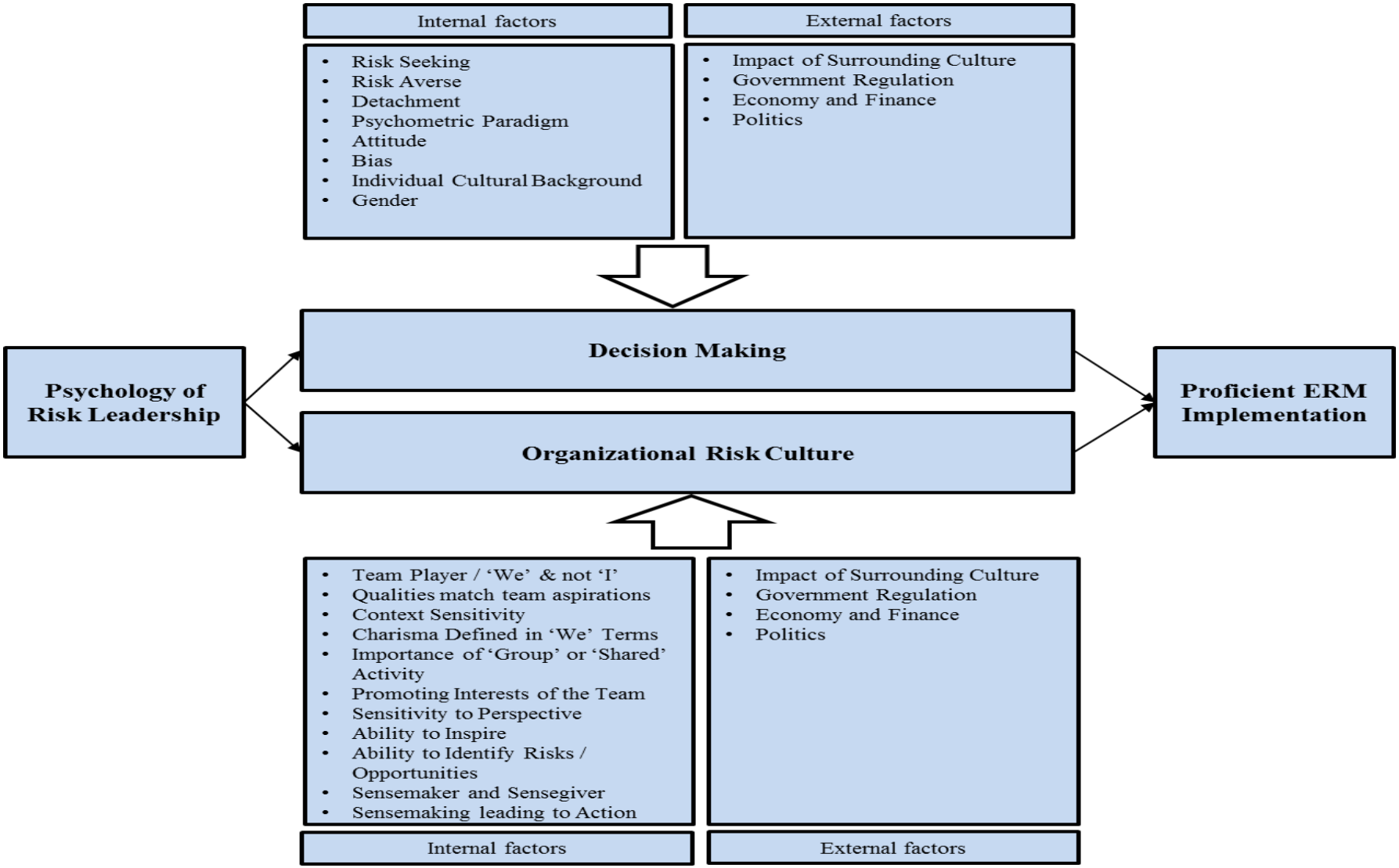

Figure 4-7 Psychology of Risk Leadership and ERM Implementation framework

Source: Researcher

Each of the elements of the framework indicated in Figure 4-7 is explained as follows.

4.6.1. Psychology of Risk Leadership – A Key Element for Effective ERM Implementation

Conventionally, ERM frameworks have been implemented in a deterministic manner. However, this deterministic process is argued to be incomplete. For instance, Beach and Lipshitz (1993) criticise the formal-empiricist and rationalist models for their failure to take the decision maker's psychological process into account. Hammond *et al.* (2001) also point out that real-life decision making is a dynamic process that cannot be accounted for through purely deterministic or rational methods. Moreover, these models do not address the mental processes that an individual experiences under the condition of risk. The KPMG (2005) also notes that the standards-based approach to ERM implementation has been largely ineffective, which may be attributed to faulty decision making processes. In an ERM context, leadership also means getting other board leaders and lower management echelons to accept the decisions made and to act on those decisions in order to effectively counter risks and leverage opportunities. This can only be possible by creating a culture of organizational risk.

This research takes the view that it is therefore necessary to understand the psychology of leadership under condition of risk and uncertainty that will lead to effective decision making under condition of risk and the ability to create organizational risk culture. It is assumed that such a psychology of leadership will lead to effective ERM implementation. The various features under each of these dimensions have to be identified.

4.6.2. Decision Making Under Condition of Risk and Uncertainty

The naturalistic method of decision making acknowledges that human capability has to be considered in the decision-making process under the condition of risk and uncertainty, and that decision making should be understood in the context of a dynamic work/business environment (Zsambok and Klein, 1997). In this context, Nutt (2009) states that critical decisions are risky due to the ambiguity, conflict and uncertainty that occur in real life situations. Critical decisions become bad or wrong when ambiguities and uncertainties are not considered, treated superficially or even ignored during decision making. Slovic (2000) suggests that the wrong decisions are made when faulty mental reasoning results in the erroneous consideration of risky situations. Here, the wrong decision is one that does not lead to the desired outcome. The implication is that both the mental processes of leaders and the

context in which decision making occurs should be considered during the ERM decision-making process.

According to Sander van der Linden (2015) When exposed to risk, individuals can either seek thrills associated with the excitement inherent in all risk or experience anxiety that occurs due to uncertainty that is also inherent in risk. The first kind of people is 'risk seekers' while the latter are 'risk averse'. Decisions made by both risk seekers and risk averse individuals are most subjective and can lead to rational decisions not being made due to the emotions associated with each frame of mind. On the other hand, making decisions when the mind is free from emotion and detached can result in rational decisions being made. Hence the consideration of the three factors of **risk seeking, risk averse** and **detachment** in the psychology of decision making.

Leaders can also be influenced by experience or opinion of others when making decisions at the time of risk. This factor is called '**psychometric paradigms'** (Slavic 2006). They may also suffer from '**bias'** which are all those human factors that prevent persons from thinking rationally at the time of risky situations. Slavic (2006) suggest that the '**attitude'** of the person towards risk also impacts thinking and hence the factor of attitude should also be considered in any psychology of decision making. Men and women make decisions differently under condition of risk. In general, women are more risk averse than men. This also means that '**impact of gender'** or the '**differences in the way men and women think'** is an important psychological factor that should be considered in the psychology of decision making. The way individuals think is also impacted by the culture in which they come from or the culture in which organizations operate. Persons from collectivist cultures, where there is low tolerance for ambiguity and uncertainties and high tolerance for hierarchy are less likely to take risks than those from cultures with high tolerance for ambiguity and low tolerance for hierarchy. Thus '**impact of culture on thinking**' is another psychological variable that should be considered when exploring psychology of decision making under condition of risk.

4.6. 3. Creating an organizational culture of risk

According to ERM Initiative Faculty (2014) the Board of Directors / senior management are responsible for implementing the ERM framework. This research takes the view that the ability of the Board to effectively implement the ERM framework and get others in the organization to execute decisions taken by the Board depends on the ability of leaders to suitably influence their employees. The First National Culture and Risk Survey of cultural

cognition (2012) found that this ability to influence results in the creation of an organizational culture of risk wherein employees are made aware of risk and are able to implement the decisions taken by senior management effectively so as to de-risk the organization. In this connection, it is necessary to establish a psychological connection between leaders and followers where the latter perceive to be 'one of us' compared to 'one of them' or 'only for themselves'. Thus, the ability to think in terms of a "**Team Player**" or in terms of "**We**" rather than in terms of "**I**" alone is an important psychological factor impacting the ability of a modern leader to influence others in his team (ERM Initiative Faculty 2014).

Hofstede (1980) stated that another psychological factor is the leader's capacity to embrace and promote a "**Team Aspiration**" whereby there is compatibility between the personal qualities and aspiration of the leader and the aspirations of the team. Moreover, leadership is always tied to context, with leaders' personalities being a product of the context in which they live and operate and that leaders should be "**Sensitive to the Context**" or "**Sensitive to the Perspective**" in which risk occurs. Another important psychological factor that has emerged to define the new psychology of leadership is that of "**Charisma**" whereby followers perceive leaders as an important and vital part of a larger group. Leaders who are termed as charismatic are more likely to influence and lead their followers as compared to those leaders without charisma.

The ability of the leader to create a perception that the **interests of their team** are being promoted is important to secure their wholehearted co-operation in implementing decisions related to risk. A culture of risk management should be built within a top-down and bottom-up structure where the leader is perceived to be '**part of the group'** or '**engaging in group activity'**. Leaders are sense - makers because their main responsibility is to interpret the risky situation and derive meaning from it, and they are sense- givers because they also have to disseminate these meanings to others in the organisation and guide them to make sense out of risky situations. Thus, the ability to '**sense risk'** and '**communicate risk'** are other important factors in creating an effective culture of organizational risk. The leader should also be able to derive actionable actions from whatever sense has been made out of risk. Thus the **ability to take Action** is another factor related to organizational risk. Leaders should be able to **identify risks and opportunities** and have a **worldview** that will enable to them to identify such risks and opportunities. Leaders should also be able to **transformatively learn** in order to develop the competencies that lead to enhanced decision making and action capability (Hofstede 2001).

4.6. 4. Identifying Effective ERM implementation

There are various ways in which to measure the effectiveness of ERM implementation. According to research conducted by Dafikpaku (2011) and HBR (2013), this includes the proactive identification of current and emergent risks, and opportunities implementing risk mitigation activity, ensuring that all decisions taken are within the risk appetite of the organisation, including risk management responsibilities within strategic operations, creating a risk awareness culture throughout the organisation and linking risk information to strategic decision making.

4.7. Conclusion

An analysis of the various ERM frameworks has indicated that they are only prescriptive. They prescribe steps to be followed to contain risk and identify opportunities. However, the do not consider the psychological factors that enable leaders to effectively implement ERM.

This chapter explored the two distinguishing features psychology of risk leadership with respect to decision making and the ability to create organizational culture of risk. The ability, or lack thereof, to make rational decisions under the condition of risk and uncertainty, and to create an organisational culture of risk will either facilitate or hinder the proper implementation of ERM standards. It is supposed that developing risk leadership will lead to the proficient implementation of ERM, which in turn leads to several benefits accruing to the organisation. Using this analysis, which is based on secondary data, the conceptual framework containing the various dimensions of the psychology of risk leaders as indicated in Figure 4-6 has been formulated. However, these dimensions and interconnections are to be empirically verified in order to formulate a valid and objective framework that can serve as a guide for decision making and establishing risk-based culture. How decision making at the individual level interfaces with risk culture, and how such an interface impacts ERM performance, also needs to be empirically verified. The analysis of the primary data will determine the existence of any additional qualities, behaviours and traits that differentiate risk leaders and regular leaders. Chapter 5 indicates the methods that were used to empirically verify the dimensions of the psychology of risk leadership and identify any possible new dimensions.

Chapter 5 – Research Methodology

5.1 Introduction

This chapter presents the research methodology followed in this research, according to Sapsford (2006), research is a scientific inquiry into phenomena being studied. A research methodology is the process of collecting and analysing data related to such scientific inquiry (Wolcott, 1994). ERM, leadership and risks were discussed in the previous chapter in light of the various theories, approaches, concepts and definitions that explore them. The psychological theories of leadership were discussed and the literature critically evaluated, covering the key studies of psychology of leadership and psychological impacts on executive decision-making. This research is categorised under the multidisciplinary subject of social science since it deals with the phenomenon of risk leadership. Mathiassen (2002) points out that the psychology of research on leadership is complex and the selection of an appropriate research method is not straightforward. According to Walsham (1995), it calls for the several different approaches, methods and techniques, all of which will be explored in this chapter.

5.2 Research as a process

According to Saunders (2010), for research to be truly scientific it should be conducted according to a particular 'process' and not in an ad-hoc or haphazard manner. In this regard, Saunders (2010) developed the 'Saunders Research Onion", as illustrated in Figure 5-1, below:

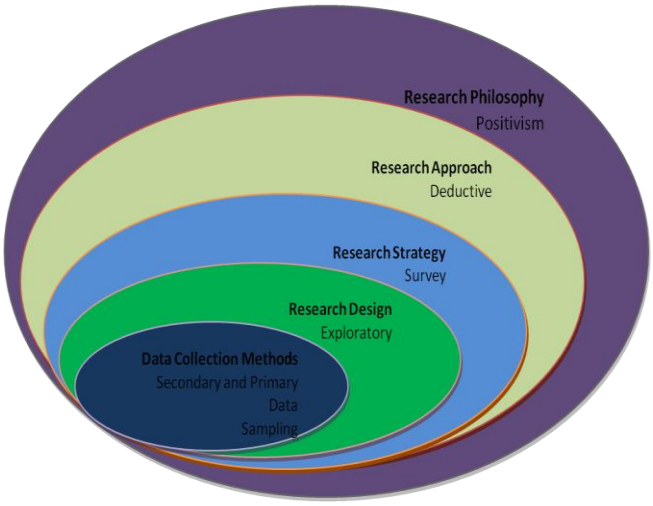

Figure 5-1 The Research Onion

Source: Saunders (2010)

Figure 5-1 illustrates that research is a systematic process consisting of: (i) a research philosophy; (ii) the choice of approach; (iii) the development of strategy; (iv) the

identification of data collection methods and tools; (v) the selection of data analysis tools; (vi) the conduction of analysis; and (vii) the identification of key findings emerging from the analysis.

5.3 The research philosophy

The research philosophy serves as a guide to direct the entire research process. According to Easterby-Smith *et al.* (2002), there are three main reasons for selecting a particular philosophy that will guide the research: (i) to clarify the research design; (ii) to understand which design will work and will not; and (iii) for determining the production of new knowledge and for developing a deeper understanding of the issue being considered. These views are extended by Bahari (2010), who points out that the research philosophy is very important in any kind of research, whether in natural or social sciences. The research philosophy provides the Researcher with different perspectives from which to view the phenomenon being considered. According to Guba and Lincoln (1994), a philosophy is often referred to as a paradigm and can be defined as the 'basic belief system or worldview that guides the investigator'. Trochim (2011) states that there are three main philosophies of research, including ontology, epistemology and axiology. The research paradigm can be understood in terms of ontological, epistemological and axiology assumptions (Thomas, 2011). In this section, the major research philosophies are introduced alongside a rationale for the adoption of the chosen research philosophy in this study (Collis and Hussey, 2013),

Teddlie and Yu (2007) point out that the basic assumptions of research philosophies can allow a researcher to research design beyond past experience. The two most fundamental research philosophies – positivism and interpretivism – will be discussed in this chapter. The purpose of this section of the thesis is to lay the foundation for the consideration of the alternative research strategies that are available to social scientists. The research philosophy refers to the epistemology, ontological assumptions and undertakings that guide an inquiry in a research study, whether implicitly or explicitly. In general, epistemology describes 'how' research knows about the reality and the assumptions about how knowledge should be acquired and accepted (Taskhkkori and Teddlie, 2003). The ontology explains 'what' knowledge is and assumptions about reality (Seale, 1999). These ontological assumptions and epistemological undertakings regarding the nature of the natural world constitute the formulation of research philosophy, consequently determining the selection of appropriate research approach and methods (Pathirage, Amaratunga and Haigh, 2008).

Ontology pertains to the nature of the world and reality (Sandelowski, 2000). It refers to the

set of assumptions made about the phenomenon being studied. According to Saunders *et al.* (2007) ontology considers the nature of social phenomena as entities that are to be admitted to a knowledge system. Ontological assumptions constitute subjectivism/constructivism for qualitative (intensive) research and objectivism for quantitative (extensive) research strategies (Saunders, 2015). As Bahari (2010) notes, qualitative (intensive) research strategies are typically used under interpretivism, whilst quantitative (extensive) research strategies are typically used under positivism. Epistemology is a theory of knowledge and concern about how the world (assumed to exist in the ontology) can be understood (Rowntree, 1991). It determines what is considered acceptable knowledge for the field of study.

The central issue considered by a philosophy of epistemology in social science is the question of whether the social world can and should be studied according to the same principles and procedures as natural science (Robson, 2002). The answer to that question points the way to the acceptability of the knowledge developed from the research process (Rice, 1995). Therefore, epistemological assumptions can be regarded as being associated with the nature of knowledge and the methods through which that knowledge can be acquired (Pathirage et al., 2008). Interpretivism and positivism are the two core epistemological assumptions considered in this research.

5.3.1 Positivist philosophy

According to Bryman and Bell (2007), positivism is a form of epistemology that applies natural sciences methodologies to the study of social subjects. Bryman and Bell (2007) stated that according to the positivist philosophy: (i) only phenomena that can be sensed translates into knowledge; (ii) hypotheses have to be generated that can be tested and will thereby allow explanations of laws to be formed; (iii) knowledge is arrived at through the gathering of facts that provide the basis for laws; (iv) scientific inquiry should be objective at all times; and (v) all deductions and postulates should be scientifically and empirically proven and all else are relegated to the realm of belief and conjecture. Blumberg (2005) points out that the principles of positivism, as it pertains to the social sciences, are that; (i) social phenomena are completely external and may be viewed objectively; (ii) research should be free from all values; and (iii) the Researcher conducts the research independently and objectively. The positivist philosophy recommends the identification of postulates and then tests to what extent these postulates can be generalised using empirical experiments that prove or disprove them. According to Blumberg (2005), positivist researchers assume that phenomena are completely objective, because they exist outside the person and are completely external. They

are not constructed by the mind and hence the Researcher cannot influence them since the research is conducted completely objectively (Remeyni et al., 2003). The implication here is that phenomena belonging to a particular genre may be reduced to a single and simple element, which forms the basis of a hypothesis or postulate. Thus, the same conclusion should be reached if different researchers were to observe the same phenomenon. Hence, according to Orlikowski and Baroudi (1991), positivist researchers focus only on those aspects of a phenomenon that may be objectively observed and neglect other more subjective aspects.

5.3.2 Interpretivist philosophy

According to the philosophy of interpretivism, natural phenomena are too complex to be completely objective (Wegner, 2004). This is especially so with regard to social and natural sciences where there are considerable differences between phenomena being considered. According to Bryman and Bell (2007), social scientists should also try to understand the subjective meaning of social phenomena. In this sense, interpretivism is a contrasting form of epistemology in comparison to positivism. Blumberg (2005) summarises the three main principles of interpretivism as: (i) social phenomena are essentially constructed by the people who ascribe meaning to it; (ii) the Researcher is not separate from phenomena being considered; and (iii) research is motivated by interests. Blumberg (2005) also points out that the fundamental laws recommended by positivists are not sufficient enough to understand the complexities of social phenomena. Social phenomena cannot be completely objective, as they have multiple meanings for different people according to individual construction of value, behaviour and action (Onwuegbuzie et al., 2007). Observation and idea development both contribute to the construction of knowledge. Habermas (2008) also pointed out that research is free from interest. This is because researchers' interpretations of social phenomena are based on their own motives, beliefs and value systems. It is these interests that determine how the world is investigated and how meaning gets constructed. The implication here is that interpretations about social phenomena are dependent on what meanings are ascribed to them by researchers. Blumberg (2005) points out that the mere gathering of facts cannot reveal the reality of a social phenomenon. Rather, it is important to explore and understand the differences in social phenomena and how these differences can be constructed with different meanings ascribed to them.

5.3.3 Justification for the adoption of interpretivism in this research

Table 5-1, below, summarises the key differences between positivism and interpretivism:

Table 5-1 Comparison of positivism and interpretivism

	Positivism	Interpretivism
World View	The world is external and objective	The world is socially constructed and subjective
Involvement of the Researcher	Researcher is independent and objective	Researcher is part of what is observed, and sometimes even actively collaborates
Influence of the Researcher	Research is value-free	Research is driven by human interests
Assumptions	Objective, quantitative, factual	Subjective interpretation of meanings
Development of Knowledge	Reducing phenomena to single, simple laws, and postulates	Developing a broad and holistic view of phenomena and providing new, hitherto unknown meanings

Source: Researcher

The analysis of the literature indicates that leadership is a social science and a complex subject. The various theories, frameworks, definitions and views on leadership indicate that this concept cannot be reduced to a single, simple law or postulate, as recommended under positivism. It is asserted that it is only by virtue of the meaning that others apply to leadership that it can be truly understood (Grint, 2000). Moreover, the analysis of the literature also indicates that the positivist, deterministic manner in which standards-based ERM is implemented has largely failed. The reason for this is that ERM implementation has often discounted and overlooked individual, social and contextual dynamics. The literature also indicates that psychological phenomena such as decision making under the condition of risk and uncertainty and the ability to create a culture of risk within an organisation has to be examined from a constructivist / interpretive point of view. The research takes into account that the psychology of leadership has not been completely understood and that there are theoretical constructs that are currently unknown and yet to be discovered.

It may be inferred that all of these requirements, pertaining to the examination of risk leadership in an ERM context, point to the interpretivist school of thought. Here, the social phenomenon being considered is the way in which leaders interpret risk that threatens viability of the organisation. This requires the Researcher to not only become involved in subjective interpretations offered by multiple participants, but to also recognise their specific motivations and interests. There is no attempt at generalisation, since the Researcher recognises that the business world is dynamic and that risks that occurred in the past may no longer be of much significance. Furthermore, active collaboration with respondents is required in order to achieve the new and potentially surprising findings regarding the

phenomenon of leadership that the Researcher aims to contribute to the existing literature. This level of engagement with respondents allows corporate risk in the real-life setting to be fully and dynamically explored. In turn, this provides the Researcher with the ability to help improve and address currently ineffective standards-based ERM implementation with solutions that are feasible for the actual environment in which it exists. It is for these reasons that the philosophy of interpretivism has been considered in this research

5.4 Research approach

The research approach refers to the methods of logical reasoning that support this research, and to develop a strategy that will result in valid social science research. There are two possible methods of logical reasoning, namely deduction and induction.

5.4.1 The deductive approach

According to Blaikie (1993), the deductive approach is firstly about establishing a hypothesis or postulate that should later be empirically verified. The hypothesis is built up depending on what is already known about a particular phenomenon and of the theoretical constructs related to it (Oates, 2006). The last step in the deductive approach indicates a movement in the opposite direction as the Researcher uses the individual findings of the empirical study to justify or reject the hypotheses (Bryman and Bell, 2007). Figure 5-2 indicates the various steps involved in a deductive approach to research.

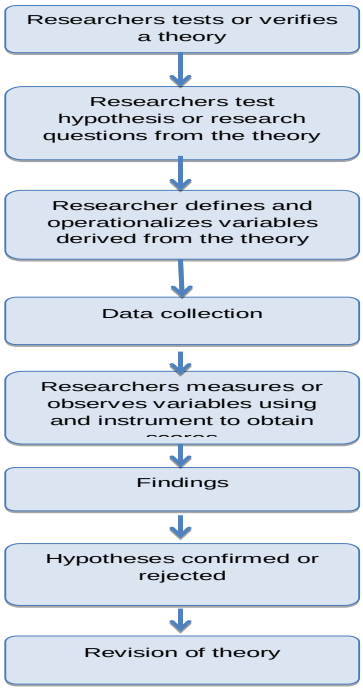

Figure 5-2 The deductive research process

Source: Creswell (2003)

The conclusions of the deductive approach extend what can be known about the phenomenon being studied. For these reasons, Bahari (2010) suggests that the deductive approach is about testing and verifying of theories in research.

5.4.2 The inductive approach

The inductive approach moves in a direction opposite to that of the deductive approach (Miles and Huberman, 1994). In inductive research, theories are formulated following the collection of data (Pathirage *et al.*, 2008). Partington (2000) points out that the inductive approach omits speculation and the a priori nature of the deductive approach. It is the outcome of empirical studies and hence more likely to be plausible compared to deductive research, which reflects the opinion or outcome of the Researcher mind (Leech et al., 2009). The various steps involved in deductive research are outlined in Figure 5-3, below:

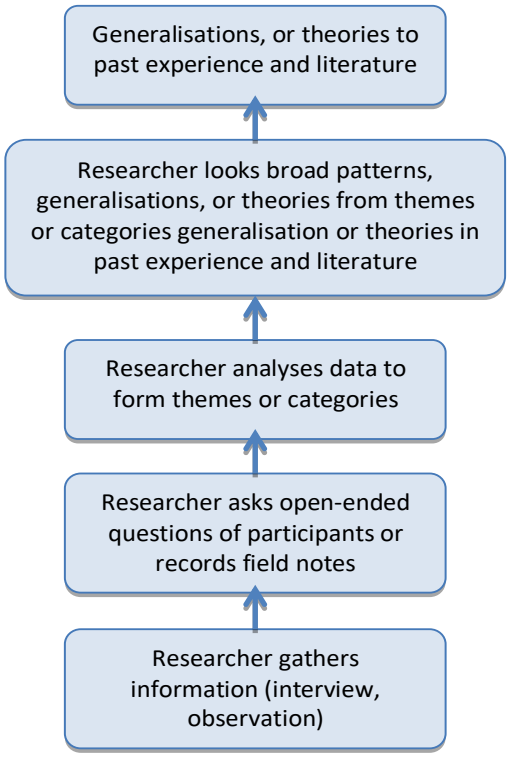

Figure 5-3 The inductive research process

Source: Creswell (2003)

According to Lecompte and Goets (1982), researcher gather data on the given phenomenon when conducting inductive research, as illustrated in the above chart. This data is then organised into themes that form the basis for larger patterns and generalisations. These patterns or generalisations are then compared with personal experience or secondary data on the subject being analysed (Laing, 1967). According to Thommas (2006), the main objectives of inductive studies are to: (i) convert larger masses of raw data into summaries; (ii) establish

transparent, justifiable links between the objectives of the research and the summaries derived from raw data; and (iii) develop frameworks or theories about underlying structures emerging from the data that analysed. A search of existing qualitative research demonstrated that health and social science research and evaluations tend to adopt the inductive approach (Kvale, 1996). The following examples of descriptions, taken from the methodology sections of various research reports, illustrate data analysis strategies that have used a general inductive approach.

5.4.3 Choice of research approach

The differences between the deductive and inductive approaches are illustrated in Table 3-2. An analysis of such differences is necessary to understand which approach will be best suited for examining the psychology of risk leadership in ERM. According to Saunders *et al.* (2009), the analysis of the difference between logical methods of reasoning firstly aids researchers in making informed decision about an appropriate research approach, secondly, aids in identifying strategies of research that will secure (or fail to secure) the key objectives of the research, and thirdly, provide information on different research traditions that will allow the Researcher to identify the most suitable option within the overall context of restraints and limitations.

A mixed approach incorporating both deductive and inductive methods was chosen in this study based on the analysis of the differences outlined in Table 5-2, the research objectives, and the methodology-oriented literature review. Bryman and Bell (2003) point out that there are cases where both the deductive and inductive approaches can be jointly and effectively used, although the influence of one or more approaches is stronger. In this study, the inductive approach has greater influence than the deductive approach. According to Laing (1967), the deductive approach is more suited to the analysis of natural science phenomena, whilst the inductive approach is more suited to the analysis of social science, Risk leadership falls into the realm of social phenomena and hence the inductive approach is deemed more suitable for its examination. Deductive approaches recommend cause and effect types of analysis. However, in research related to human behaviour, there are considerable differences between causes and their manifestations / effects. That is, there is a fundamental difference between human beings and inanimate objects and phenomena such as the weather. These differences are overlooked under the deductive approach, but taken into account in inductive research (Johnson et al., 2007). Gill and Johnson (2002) point out that in any study related to social sciences, the requirement is to explain social phenomena based on observation and

experience.

This requirement can only be met through the inductive approach. According to Saunders *et al.* (2009), inductive methods are to be used wherever it is required to study the way human beings act, think and feel. On subjects that are new and debatable, it is better to generate data and then to analyse and reflect upon the themes emerging from such data (Hammersley, 1999). The decision to follow both the inductive and deductive approaches in this research was made based on this analysis along with the Researcher experience as a management professional (Greene and Caracelli, 2003). The inductive approach leads to the formulation of the various theoretical assumptions underlying risk leadership and ERM. The use of both inductive and deductive approaches in a single research is called abduction (Creswell, 2003) which is a form of logical reasoning which moves from experiment or observation to theory, giving the most likely explanation for the outcomes of the experiment or what is being observed.

The deductive approach is required for a better understanding of risk management and decision-making, and formulating the psychology of risk leadership and decision-making alignment framework. Using the deductive approach, the conceptual framework indicated in Figure 4-1 incorporates theoretical assumptions derived from the literature. The deductive approach was also used to identify the literature gap related to psychological theories, risk management and leadership/decision-making. In other words, the framework was developed deductively from theories and the literature on leadership. Using a mix of deductive and inductive approaches made it possible to achieve the balance and objectivity that are fundamental to the quality and validity of any academic research and its practical contribution to risk management and executive leadership from a psychological perspective.

Accordingly, the research questions were framed such that they could lead to achievable applications being formulated in order to ensure that answers would add value to practical implementation and not simply add to theoretical knowledge. Hence, the Researcher decided that the research design should also include a deductive approach so as to add to the validation and moderation control provided by the adoption of the inductive approach.

Table 5-2 Differences between the deductive and inductive approaches

Deduction	Induction
Moving from theory to data.	Moving from data to theory. A close understanding of the research context
The collection of quantitative data	The collection of qualitative data
Common with natural science.	Common with social science. Gaining an understanding of the meanings humans attach to events
A highly structured approach.	Flexible structure to permit changes.
Explain causal relationship variables.	Understanding of meanings humans attach to events. A more flexible structure to permit changes of research emphasis as the research progress
Select samples of sufficient size to generalize conclusions.	Less concern with the need to generalize.
Deductive analysis, refer to approaches in which data analysis sets out to test whether data are consistent with prior assumptions, theories or hypotheses identified or constructed by the researcher investigator.	Inductive analysis refers to approaches that primarily use detailed readings of raw data to derive concepts and themes, or a model through interpretations made from the raw data by an evaluator or researcher; "the researcher begins with an area of study and allows the theory to emerge from data" (Strauss and Corbin, 1998)
Criticism: The major defect of the hypothetical deductive scheme, considered, as formulary of scientific behaviour, is its disavowal of any competence to speak about the generative act in scientific inquiry. Concerned with the problem of using data to test a theory. The problem of the relationship between the theory and the reality. The last criticism has to do with the intellectual and social context within which science is practiced. The tendency to construct a rigid methodology that does not permit alternative explanations of what is going on.	Criticism: The first difficulty is how the principle of induction can be justified. The number of observations that need to be made before a generalisation is possible. Another serious objection to the inductive strategy concerns the activity of observing.
Strength: Deductive research can be quicker to complete, although that time must be devoted to setting up the study previous to data collection and analysis. Deductive can be a lower risk strategy.	Strength: Inductive research can be more protracted. The original form of induction used to develop knowledge about the world. The inductive strategy corresponds to popular conceptions of the activities of scientists.

Source: Researcher

5.5 Research method – mixed method

5.5.1 Qualitative and quantitative methods

Qualitative and quantitative methods, which are the two available research methods for researchers to choose from, each come with their own specific advantages and disadvantages (Foddy, 1993). Researchers can either choose one or the other, or elect to adopt both qualitative and quantitative methods, depending on the requirements of their research. This approach is known as the mixed methods approach (Fink and Kosecoff, 1993). According to Wegner (2008), qualitative research is used whenever there is a requirement to derive or identify patterns contained in raw data and where hypotheses are to be formulated. Wegner

(2008) notes that qualitative research is used for the understanding, analysis and interpretation of social phenomena and for examining human behaviour as it occur in its natural environment. Yin (2009) points out that qualitative method are often the only methods that can effectively evaluate human behaviour or social occurrences that are complex and impossible to quantify. As stated by Bryman and Bell (2007), qualitative methods are used where there is a requirement to assess and evaluate subjective attitudes, opinions and behaviour, and where insight and impressions are needed for the interpretation of data that have been gathered.

Quantitative methods, on the other hand, are used to establish and identify statistical relationships amongst variables (Zikmund, 2009). They utilise empirical processes of measurement and experiment to identify these relationships and to make predictions based on outcomes. Miles and Huberman (1994) point out that quantitative method examine cause-and-effect and test hypotheses. Here, the tools used for the collection and analysis of data are validated. Zikmund (2009) points out that the selection of quantitative methods is motivated by the requirement to produce results that are as objective as possible.

The advantages and disadvantages of qualitative and quantitative approaches, as indicated by researchers such as Guba and Lincoln (1994), Kaplan and Duchon (1988), Amaratunga and Baldry (2002), Creswell (2009), Bryman (2006), Berg (1989) and Denzin and Lincoln (2005), are summarised in Table 5-3, below:

Table 5-2 Advantages and disadvantages of quantitative and qualitative research

Advantages of quantitative research	Disadvantages of quantitative research
• Allows for the accurate measurement of variables • Methods are structured and standardised • Provides wide coverage of a range of situations • Inclusion of a large sample of the population • Used more commonly in IS studies • Allows for statistical analysis • Does not allow for generalisation of the findings Can be time-saving and economical	• Use of inflexible methods • Deterministic character • Disregards certain important factors • Misses subjective aspects of human existence • Assumption of objective truth • Generates incomplete understandings • Inapplicable to some immeasurable phenomena • Does not aid in generating theories
Advantages of qualitative research	**Disadvantages of qualitative research**
• Methods enhance descriptions and theory development • Describes theories and experiences • Allows for deep understanding and insight • Holistic and humanistic • Exclusion of meaning and purpose • Flexible methods • Value placed on participants' views and empowerment • Inductive data analysis • Subjective dimensions are explored	• No hard data or clear measuring • Subjective, 'non-scientific' • Deep involvement of researchers increases risk of bias • Small samples • Generalisation is limited to similar contexts and conditions • Analysis and interpretation of data may be comparatively difficult • Policymakers may give low credibility to results

Sources: Guba and Lincoln (1994)

5.5.2 Choosing and implementing the mixed method approach

Based on the analysis of the advantages and disadvantages of both the qualitative and quantitative methods, the author decided to combine the two methods and use a combination mixed methods. The author first undertook the qualitative phase interviews followed by the quantitative phase in accordance with the Abduction Pragmatic approach (Bryman and Bell, 2015). The justification of the qualitative method is that the psychology of risk leadership is essentially a social phenomenon and as such, is inherently subjective. Such a complex phenomenon cannot be examined from a purely objective viewpoint. On the other hand, there is the need to arrive at conclusions and establish some sort of causality between various theoretical constructs identified in the framework and ERM performance. Moreover, this

research also required the use of statistical tools to quantitatively analyse the primary data. The quantitative approach was selected for these reasons.

The rationale for the use of mixed method design in this research lies in the recommendation made within the literature, which asserts that complex phenomenon – such as the relationships between the psychology of risk leadership and ERM – are best examined through the use of a combined qualitative and quantitative approach. In fact, so widespread has the mixed method become, that Johnson and Onwuegbuzi (2004) point out it is becoming a major third approach its own right, referring to it as a third research paradigm whose time has come.

According to Creswell (2006), mixed methods provide more comprehensive solutions to research problems. Sandelowski (2000) noted that the use of mixed methods expands the scope of research and provides new insights than could not be obtained using any single method alone. Furthermore, Tashakkori and Teddlie (2010) state that the advantages of mixed methods can compensate for the limitations of either qualitative or quantitative methods.

It can be inferred that implementing the mixed method approach involves the collection and analysis of both qualitative and quantitative data. According to Creswell (2006), there are four different methods of combining the data such that a comprehensive picture of the problem being analysed may be derived. These include: (i) merging / convergence; (ii) connecting or building on previous layers; (iii) embedding where individual pieces of data support each other; and (iv) the use of a framework to link all of the datasets together. These methods are illustrated in Figure 5-4, below:

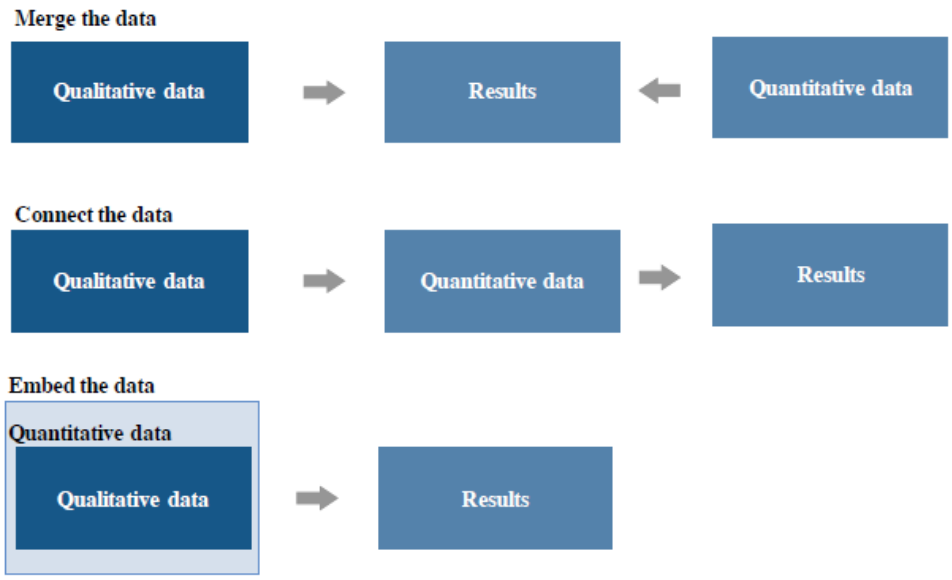

Figure 5-4 Mixed method approach

Source: Creswell (2006)

Given that the nature of this research relates to social phenomena and that the purpose is to establish links between the psychology of risk leadership and efficacious ERM implementation, it was determined that the combined method of mixing both qualitative and quantitative data would be most suitable for this research. Creswell's (2009) four steps to mixed method design – time, weight, mix and theorising – were adopted by the Researcher for guidance.

Time: The time at which qualitative and quantitative data will be collected. This can be sequentially or concurrent and it also determines whether the qualitative or quantitative data will be collected first. In this research study, qualitative data was first collected and then quantitatively analysed.

Weight: Whether greater importance is to be given to qualitative or quantitative research, or whether both methods are to receive equal attention. Weight has to be determined according to the motives of the Researcher, the phenomenon being studied and what the Researcher wishes to emphasise. This research places more importance to the qualitative method since what is being examined is a complex social phenomenon that cannot be fully and objectively quantified.

Mix: The complexity of the mixed method stems from the "when" and "how" of mixing data. In this research, qualitative and quantitative data are kept separate but connected through analysis and drawing inferences. The mixing of data and establishing connections was done in the discussion chapter.

Theorising: Typically, mixed method research includes the use of various theories,

frameworks and surmises to analyse primary data and arrive at conclusions that are explicit, implicit or entirely left unmentioned. In this study, theoretical literature was explicitly used at every stage of the research. An extensive examination of secondary theoretical data supported the justification for the research, the gap in the literature, and the literature review. The secondary data were also used for the formulation of the questionnaire, whilst the analysis of primary data was also conducted with reference to the theoretical literature. The ultimate objective here was to develop a new theory of risk leadership in the context of ERM implementation.

5.6 Research design

At this point, the research design may be attempted. The research design followed in this study is illustrated in Figure 5-5, below:

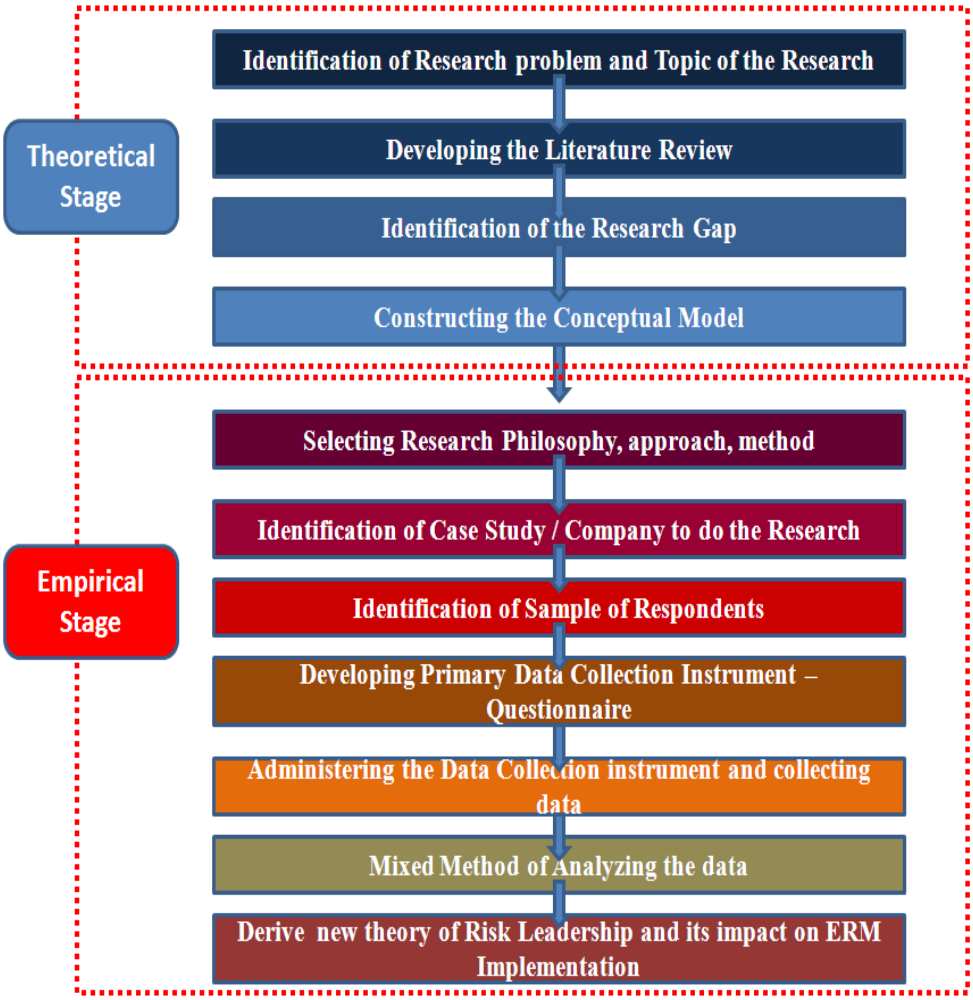

Figure 5-5 Research design

Source: Researcher

It is observed from the above, there are two broad stages involved in the research design. The

first stage is the theoretical stage. Here, secondary data are analysed to arrive at a research topic that is new and unique to the literature regarding ERM. From the analysis of the secondary data, the Researcher identified that there is very little research on the psychology of risk leadership in relation to ERM implementation. Thus, this was selected as the research topic in this study. The secondary data were also used to develop the literature review, where the aim was to discover what constitutes risk leadership and how the theoretical constructs relating to the main constructs of decision making and development of organisational risk culture. Based on this analysis, the key gaps in the literature were identified together with the framework based on theoretical insights obtained from the analysis of secondary data.

The identification of new constructions and validation of theoretical constructs regarding risk leadership is achieved in the second stage: the empirical stage.

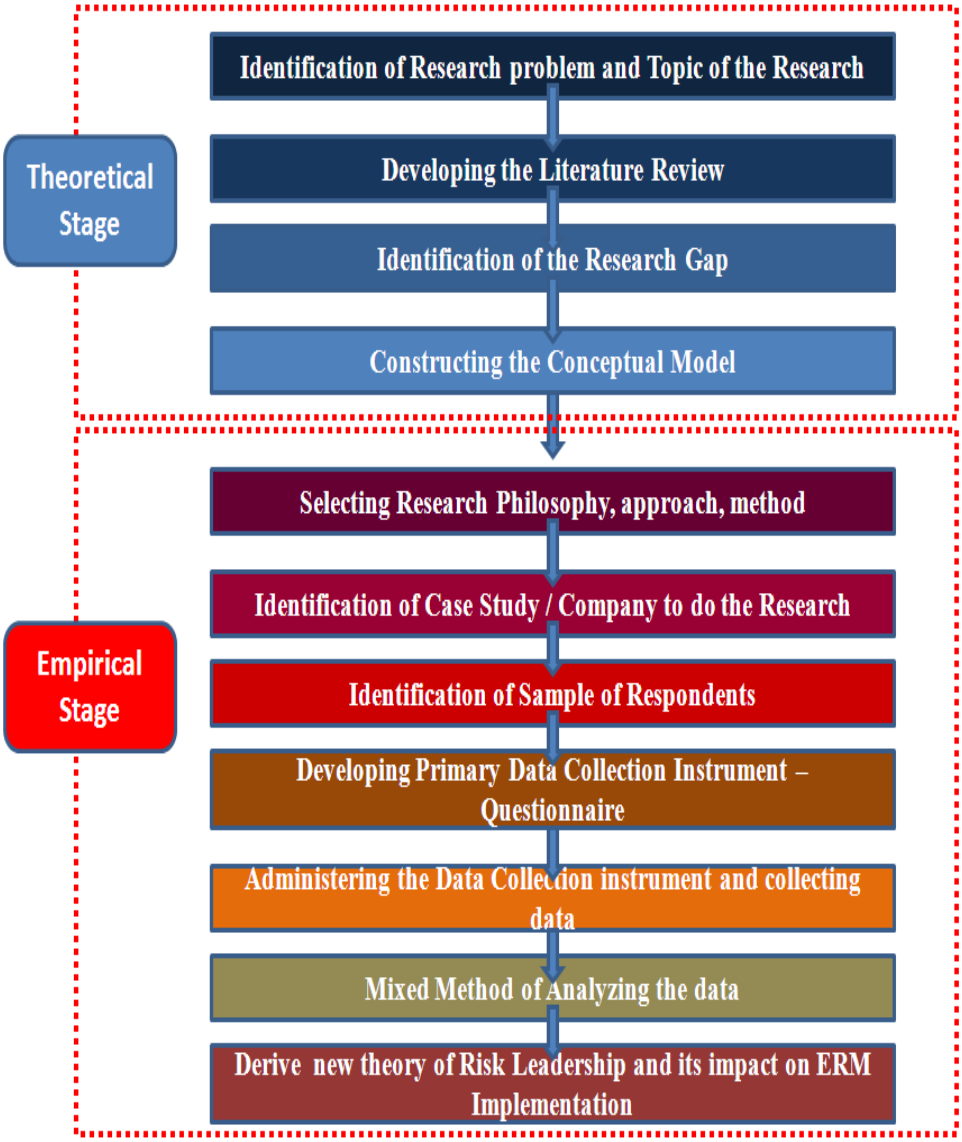

Figure 5-5 Research design

Source: Researcher

In the second stage, the first step was to identify the suitable research philosophy, followed by an appropriate research approach and strategy. A case study research strategy was adopted where the organisation where the empirical research was to be conducted was identified. This was followed by the identification of the respondents, the development of the primary data collection tool and the administering of the primary data collection tool. The primary data was analysed using both statistical tools and insights derived from the literature. During the last stage of the research process, all of these insights were used to develop a new theory on the psychology of risk leadership and ERM implementation.

5.7 Research strategy – the case study

According to Remenyi *et al.* (2003), a research strategy is a sub-set of research methodologies that indicates how research is to be conducted. Saunders *et al.* (2009) point out that the research strategy indicates how the Researcher will answer the research question, whilst Bryman (2008) explains that research strategies provide an overview of the orientation that will be demonstrated in the research. Through the research strategy, the Researcher is connected with the appropriate methods for data collection and analysis (Blaikie, 1993). Yin (2009) states that research strategies should be able to effectively answer the research question and achieve the research goals. According to Collis and Hussey (2009), Creswell (2003), Robson (2002) and Yin (2003), the most common research strategies are case studies, experiments, surveys and action-based research. In the current research, the case study strategy is adopted. The rationale for this choice is provided in the following section.

5.7.1 Reasons for the choice of the case study approach

The case study has been defined by Trochim (2000) as a tool through which to gather extremely detailed data about the phenomenon being studied. Robson (1993) points out that case studies are used whenever there is a requirement to gather in-depth information about a single phenomenon in its natural setting. Case studies are appropriate when contemporary real-life events, topics and issues are the focus of study, particular when the relationships between the phenomenon and its contextual environment are unclear (Yin, 2009). According to Gerring (2004), there is a requirement to choose a case study whenever a single unit has to be used as a representative in order to understand a larger section of similar units. Benbasa *et al.* (1987) points out that in terms of the case study strategy, data collection tools include people, groups and organisations.

In this research, there is a requirement to examine the particular case of psychology of risk leadership and its links to ERM implementation. It is therefore necessary to collect detailed

data about this phenomenon. Considering these requirements, it was decided that the case study strategy would be adopted in this research.

Bryman and Bell (2004) point out that there are several different kinds of case studies, including the critical, unique, revelatory, representative/typical, and longitudinal. In the critical case study, the Researcher starts with a definite and specific hypothesis, and the chosen case is that which allows for a good understanding of the particular circumstances and detailed validation of the hypothesis. The unique case study is used in the examination of extreme cases such as those in the clinical research field. The revelatory case study is used when the Researcher has an opportunity to examine and analyse a phenomenon that was previously inaccessible to scientific study. The representative, or typical, case study is used when the Researcher needs to explore a case that typifies an everyday situation or form of organisation. Finally, the longitudinal case study type illustrates how a particular phenomenon changes over time.

The representative/typical case study is selected in the current research, since it is necessary to extend the research findings to all situations in which organisations are implementing ERM. It is necessary to explore how leaders in all situations of risk are able to make rational decisions and how they can develop a culture of organisational risk within their organisations. The case study chosen thus represents a typical case wherein the business entity or sector is confronted with risk and is able to effectively manage it throughout the organisation. According to Gerring (2007), case studies are particularly suited to mixed method data collection and analysis techniques. Thus, the justification for the choice of case study method is provided. It is also the Researcher belief that the case study approach is suitable for a heterogeneous research field like risk leadership, particularly in the private sector where it is difficult to make strong generalisations due to the highly individualistic character of organisations and their risk management processes.

Yin (2009) asserts that the case study should be particularly representative of the phenomenon being studied. The reason for this is that only when the case study represents the phenomenon can accurate results be generated and applied to large sample of similar cases. In this research, the case study presented is a private Saudi organisation, which will be referred to as ABC organisation in order to maintain confidentiality. Organisations operating in Saudi Arabia's private sector have been subject to risks, the most significant of which being the drop in oil prices, which has severely impacted the economy of the country overall, and of the oil and gas sector in particular (Abdulziz and Abidi, 2012). Since the chosen organisation operates in the oil and gas sector, it effectively represents the ways in which

organisations operating within this sector treat risk, whether senior management anticipated the slump in oil prices, how they prepared for the slump, and whether or not a culture of risk is presents amongst Saudi Arabian organisations.

About ABC Company – ABC Company manufactures key equipment that is used in the Saudi Oil and Gas sector including wellheads and valves that support the turbines and centrifugal compressors operating in oil wells throughout the country. The company is privately owned by a Saudi national whose vision is to localize production of those components required for the oil and gas sector rather than importing them. The company also provides components required for drilling and production of oil and gas. The company has a workforce of 600, 75% of whom are Saudi locals. The company also aims to start exporting these components to other countries in the Middle East such as Kuwait that are dependent on the oil and gas industry. However, with the decline in oil prices over the last three years, the company has put its export plans on hold. There is little demand for oil exploration and drilling equipment manufactured by ABC while the demand for its maintenance equipment has remained constant and not increased.

5.8 Sample selection

Sampling is used to identify respondents whose answers will be most accurate and most in accordance with the broader objectives of the research (Yin, 2009). Here, participants working within ABC organisation were selected for participation in the research. The biggest challenge in the sampling process is to select a subset of respondents from the population that will most represent the research topic being studied. Teddlie and Yu (2007) says that there are four types of sampling methods: namely, (i) random sampling, which is used in quantitative studies; (ii) purposive sampling, which is mainly used in qualitative studies; (iii) convenience sampling, which is mainly considered based on the accessibility and willingness of the participants; and (iv) mixed method sampling, which is a combination of two or more of the aforementioned methods. This research used a combination of purposive and convenience methods and is hence conducted using mixed method approach to the selection of the sample respondent set.

Teddlie and Yu (2007) explain that mixed method sampling strategies are those that use both convenience and purposive sampling strategies that will increase transferability. The researchers recommend a four-point typology comprising basic, sequential, concurrent and multilevel mixed-method sampling. In this study, the concurrent mixed-method sampling approach was taken to select participants based on convenience, whilst purposive sampling

was used in order to generate both qualitative and quantitative data. The characteristics of mixed-methods sampling strategies are illustrated in Table 5-4, below:

Table 5-4 Characteristics of mixed-method sampling strategies

Dimension of contrast	Mixed-method sampling
Overall purpose of sampling	Designed to generate a sample that will address research questions.
Issue of generalizability	For some strands of a research design, there is a focus on external validity. For other strands, the focus is on transferability issues.
Number of techniques	All those employed by both convenience and purposive sampling.
Rationale for selecting cases/units	For some strands of a research design, there is a focus on representativeness. For other strands, the focus is on seeking out information-rich cases.
Sample size	There are multiple samples in the study. Samples vary in size, depending on the research strand and question.
Depth/breadth of information per case/unit	Focus on both depth and breadth of information across the research strands.
Timing of sample selection	Most sampling decisions are made before the study starts, but qualitative-oriented questions may lead to the emergence of other samples during the study.
How sample selection is made	There is a focus on expert judgment across the sampling decisions, especially because they interrelate with one another. Some quantitative-oriented strands may require the application of mathematical sampling formulae.
Sampling frame	Both formal and informal frames are used.
Form of data generated	Both numeric and narrative data are typically generated. Occasionally, mixed-method sampling strategies may yield only narrative or only numeric data.

Source: Adopted from Teddie and Yu (2007)

According to Yin (2009) case study procedures require structured questions to generate qualitative data, whilst interviews are used to collect quantitative data. The data collection procedures outlined by Creswell (2009) involve the collection of qualitative data followed by data analysis, then quantitative data collection and subsequent data analysis. Therefore, in

order to maintain the sequence of the research, the concurrent mixed-method sampling was used to obtain two different samples: a purposive sample to answer the qualitative research questions and a probability sample to test the quantitative research.

As the main data sources were interview and questionnaires, identifying who would be questioned and justifying the selection of the participants were critical steps and an integral part of the case study protocol. Because the unit of analysis in this study was the psychology of executives' leadership, rather than their organisations, the main point of focus was the impact of executives' psychological risk management. Data collection was limited to ABC organisation as a representative of the Saudi private sector. The participants involved in the research were executives in the private sector. The decision to limit data collection only to ABC organisation was made by the Researcher. The nature of the research - that is, the psychology of executive leadership and decision making in the Saudi private sector - meant that the size of the sample was automatically limited to executives working in the private sector.

The study included two groups of respondents, with one selected for the quantitative research and the other for the qualitative phase of the study. Sample sizes were determined by the Researcher.

Sampling for quantitative research

It is asserted that 90-95% of research requirements are fulfilled by the achievement of approximately 15-30 in-depth responses (Deming, 2006). Edwards (2007) reiterates this by pointing out that that sample sizes greater than 15 and lower than 500 are sufficient for most research. According to Tabachnick and Fidell (2001) sampling in SEM has been classified as the following, so 100 cases is considered poor, 200 cases: fair, 300 cases: good, 500 cases: very good and 1000 cases: excellent. Thus, the Researcher decided that a sample size of approximately 200 respondents would be appropriate for the current research study. The Researcher identified a sample of 100 executives within his professional network in the Saudi private sector. Since the Researcher has also collected interviews, the sample size used in this dissertation may be considered to be 'fair'. These respondents met the research requirements of priority, number of years with executive leadership experience, and familiarity with the research topic. This adheres to the convenience sampling method, where only those who are willing to participate in the research were interviewed.

Sampling for qualitative research

Sampling refers to the method of selection of respondents for the research. Random sampling includes choosing from amongst the random population, a set of persons to answer the

questionnaire. Each element in the population has an equal probability of selection and each combination of elements has an equal probability of selection. Stratified Random Sampling divides population into groups that differ in important ways. The Basis for grouping must be known before sampling. Random samples are then selected from within each group. For a given sample size, reduces error compared to simple random sampling IF the groups are different from each other. Trade-off between the cost of doing the stratification and smaller sample size needed for same error. Probabilities of selection may be different for different groups, as long as they are known. Oversampling small groups improves intergroup comparisons.

Random sampling is done according to the equation: Population size N, desired sample size n, sampling interval k=N/n. Stratified cluster sampling reduces the error in cluster sampling by creating strata of clusters. Sample one cluster from each stratum. The cost-savings of clustering with the error reduction of stratification. Divide population into groups different from each other: sexes, races, and ages. Sample randomly from each group. Less error compared to simple random. More expensive to obtain stratification information before sampling. Stratified Cluster sampling combines elements of stratification and clustering. First you define the clusters, and then you group the clusters into strata of clusters, putting similar clusters together in a stratum. Then you randomly pick one (or more) cluster from each of the strata of clusters. Then you sample the subjects within the sampled clusters (either all the subjects, or a simple random sample of them). Purposive sampling involves choosing from amongst the larger target population, those persons who would be best suited for the research. Zikmund (2009) states that the purposive sampling process involves application of inclusion criteria that ensures only relevant persons are chosen for the research. This also eliminates bias and inaccuracies arising from random selection of respondents. An efficient sampling design must confirm to the following: (i) The sample population chosen must be representative of the particular phenomenon being studied (ii) the sample set must result in minimal error (iii) the whole process of identifying respondent sample set must be within the budget of the Researcher (iv) Sample design not result in bias, (v) the process of sampling should yield answers that are objective and can be generalized to a larger population set. In this thesis, the purposive sampling method was used for the identification of respondents to whom the questionnaire could be administered. This procedure eliminates random selection of respondents and possible errors in data collection. Thus, most of the objectives of a good sampling technique were achieved.

In order to select an appropriate sample the following process was used. It was noted that according to Patton (2009), there are no specific rules to determine an appropriate sample size in qualitative research. The size of the sample depends on time and resource available and the objectives of the study. In this scenario, the Researcher considered the views of Deming (2006) who stated that 90-95% of research requirements are fulfilled by the achievement of approximately 15-30 in-depth responses. Edwards (2007) reiterates this by pointing out that that sample sizes greater than 15 and lower than 500 are sufficient for most research. More specifically for qualitative research, Ritchie et al., (2003) indicated that sample sizes are smaller than those of quantitative research. This is due to the principle of diminishing returns, whereas the study progresses more information does not necessarily provide more insights into the problem. Crouch and McKenzie (2006) indicates that in qualitative research, meaning is more important than validating hypotheses. Moreover, because qualitative research is labour intensive, analysis of large samples can be both time consuming, expensive and impractical. Glaser and Strauss (2007) indicated that a broad principle in selecting a sample size for qualitative research is that it must be large enough to ensure that most of the insights related to the problem are uncovered and small enough to ensure that data does not become repetitive and superfluous. Thus, the principle to be followed in determining samples sizes for qualitative research is that of 'saturation' which refers to when collecting new information does not shed more insights into the phenomenon being studied. All of these views were considered in determining an appropriate sample size for this research.

In order to operationalize the concept of saturation, for this research, the Researcher was again guided by the views of other researchers who indicated sufficient sample sizes to achieve saturation. Bernard (2000) indicates that for qualitative studies 30 – 60 interviews are sufficient to achieve saturation. Creswell indicated a sample size of 20 to 30 persons, while Bertaux (2008) stated that 15 persons is the smallest sample size that can be acceptable in qualitative research. Charmaz (2006) suggests that a sample size of 25 will suffice for most projects while Ritchie et al., (2003) & Green and Thorogood (2009) all indicated that the upper limit for samples for qualitative studies should be under 50 persons. From these views the Researcher deducted that a sample size of 50 would be sufficient to gather exhaustive views on the subject being examined. Moreover, since the semi-structured interview will be the means of collecting primary data and the semi-structured interview and this will take time to conduct, the Researcher feels a sample of 50 persons would suffice.

The Researcher got in touch with the head of human resources at ABC organisation via the telephone, explaining the nature of the research and asking for permission to conduct the research through the organisation. After permission was granted, the Researcher asked the head of human resources to identify suitable respondents from within the organisation. The inclusion criteria for participants at this point were managers from various divisions across the organisation with some degree of involvement in risk management. This adhered to the purposive method of selecting respondents, where only those who had some understanding of risk management were interviewed. The total number of managers identified was 50, with 42 of these managers providing their consent to participate in the study. This reflects the convenience sampling method, where only those who willing to participate in the research were interviewed.

5.9 The primary data collection instrument – the questionnaire

Gable (1994) point out that the survey approach refers to a group of methods focused on quantitative methods whereby primary data related to a particular research topic are collected through methods such as postal questionnaires, telephone interviews or published statistics, and then analysed using statistical techniques.

Tashakkori and Teddlie (2003) believe that mixed methods are useful if they provide opportunities to answer the research questions and if they facilitate proper evaluation of the extent to which the research findings and the inferences made from them can be trusted. The two advantages of choosing to use mixed methods in the same research project are that different methods can be used for different purposes in the study. This gives the Researcher confidence that the most important issues are being addressed. For instance, the Researcher may wish to employ interviews at the exploratory stage in order to get a feel for the key issues before using a questionnaire to collect descriptive data.

Conversely, Fink and Kosecoff (1985) point out that a questionnaire could be used to help policymakers, programmer planners, evaluators and researchers to gather primary data. A questionnaire can be defined as a written form of questioning including a pre-defined set of questions, assembled in a pre-determined order. Questions may be close-ended or open-ended. Respondents are asked to answer the questions, thus providing the Researcher with data that can be analysed and interpreted. Questionnaires can be self-administered, where participants respond without the Researcher being present; or researcher-administered, where the Researcher asks interviewees each question in turn and records their responses (Oates, 2006; Thomas, 2011).

In order to ensure that respondents had adequate time to complete and return the questionnaires, self-administered questionnaires were sent to participants and retrieved at a later point. This was a practical decision designed based on executives' time constraints and the strict regulations (i.e. privacy considerations) inherent to the private sector.

Questionnaire design

According to Yin (2009) and Creswell and Plano Clark (2010) suggestions two separate questionnaires were formulated for this research study, with one designed to gather qualitative data and one designed to gather quantitative data. Each questionnaire consisted of five parts: ***part 1*** comprised demographic questions designed to solicit general information about the respondents, their organisation (executives in private sector) and the extent of their roles within the organisation; ***part 2*** was related to ERM implementation and nature of leadership; ***part 3*** contained questions on the psychology of decision making; ***part 4*** contained questions on the psychology of developing a risk culture; and ***part 5*** contained questions on the benefits of ERM based on the psychology of risk leadership. The questionnaire for quantitative research comprised close ended questions and the one for qualitative research comprised open-ended questions. The quantitative and qualitative questionnaire can be found in Appendix 1 and Appendix 2, respectively.

Pilot study

In order to increase the validity of data obtained from the questionnaire, a pilot study was conducted. According to Teijlingen and Hundley (2001), pilot studies are either: (i) small scale versions, or trial runs, conducted in preparation for the major study; or (ii) involve the pre-testing of a particular research instrument. Arain *et al.* (2010) define pilot studies as "*small studies that help to design a larger primary data collection instrument*".

The importance of a pilot study

Pilot studies play a highly important role in questionnaire design. According to Creswell (2009), a pilot study can indicate the effectiveness of the research instruments prior to the conduction of actual fieldwork, enabling the Researcher to make modifications and revisions before going further when investigating on a larger scale. Pilot studies effectively pre-empt incurring of heavy losses in terms of time, effort and money, especially when the scope of the research is wide, the sample is large and quantitative measures are used (Teijlingen and Hundley, 2001). It is considered a fundamental step before launching the primary data collection process through interviews and questionnaires. According to Yin (2009), the pilot study refines the data collection plan, helps the Researcher develop a relevant line of questions and provides some conceptual clarification to the research. Yin also points out that

a pilot study can be so significant that more resources may be devoted to this phase of the research than to the collection of data from any of the actual cases during the 'real' research. The core difference between a pilot report and an actual study report, however, is that the former should be clearly targeted towards learning lessons about research design and field procedures.

Therefore, the Researcher conducted a pilot study as a preliminary 'prototype framework' to evaluate the efficacy of the questionnaire used to gather primary data. The participants in the pilot study were 10 executives from ABC organisation. The pilot study was performed with the aim of testing and ensuring that all data collection methods and procedures were reliable in order to maximise the value of the data obtained from the complete sample by making amendments where necessary, based on pilot respondents' feedback.

Most questions were open-ended across all sections. The expected completion time was 15-20 minutes. Table 5-5 outlines the participant feedback form, which the Researcher used to revise and rephrase the questions in the main survey.

Table 5-5 Feedback form from the pilot questioner

Organisation	Private sector/department	No. of executives	Position	Feedback
ABC	Finance	1	Manager	Clarify risk meaning
ABC	Finance	1	Sr. Manager	What does rational mean?
BCF	Audit	1	Manager	Clarify what do you mean by decision making
MNO	HR	1	Sr. Manager	I need more explanation on ERM
XYZ	Finance	1	Manager	Is risk only related to financial issues?

Source: Researcher

After consideration of respondents' feedback regarding the pilot questionnaire, five questions were rephrased for better clarity and understanding, four questions were removed, and three new questions were introduced.

5.10 Data collection methods

The various data collection methods used in this research are outlined in further detail in the following subsections.

5.10.1 Interview

Interviews are one of the most important and fundamental sources of case study research (Yin, 2009). Denzin and Lincoln (2005) illustrated several different types of interviews, each

having its own advantages and disadvantages depending upon the nature of the research, including structured, unstructured, group, postmodern, gender, framing and interpreting interviews. Saunders *et al.* (2015) highlight the most popular types of interview, which *structured interviews*, which ask a determined list of questions, *unstructured (in-depth)* or *open-ended interviews*, where interviewees are responsible for determining the direction of the interview, and *semi-structured* interviews, where a combination of the above two types are used and the Researcher has the freedom to follow up points as necessary within a given structure. As the current research follows the case study structure, the Researcher decided to design interview questions according to one of the three following styles:

- ***Focused interview*** **-** Each person is interviewed for a short period of time (e.g. 45-60 Min). In such cases, the interviews may remain open-ended and assume a conversational manner, but the Researcher is more likely to be following a certain set of questions derived from the case study protocol;
- ***Structured questions*** **-** Along the lines of a third type of formal survey, such interviews could be designed as part of an embedded case study and produce quantitative data as part of the case study evidence. However, interviews are usually associated with the survey method (Collis and Hussey, 2013);
- ***In-depth interview*** **-** The Researcher asks participants about the facts of a matter and their opinions, and they are invited to share their insights into certain incidences. The interviews may take place over an extended period of time, and interviewees can recommend other participants or sources of information;
- ***Semi-structured interview*** **-** The Researcher has a list of themes and questions to be covered, although these may differ from interview to interview. Consequently, researchers may neglect certain questions in a particular interview based on and organisational context that is encountered in relation to the research topic. The Researcher is also free to move with the flow of conversation and ask questions in a different order to the pre-designed interview script (Collis and Hussey, 2013).

As Robson (2002) states, in-depth interviews are useful when a researcher needs to “find out what is happening and to seek new insights”. Since this research is an exploratory study, the semi-structured interview method was deemed the most appropriate approach of all interview types. Moreover, choosing this type of interview encourages interviewee to suggest other interviewees and other sources of data, as noted above (Yin, 2009).

A total of 104 participants of the executives of ABC organisation in Saudi Arabia took part in face-to-face interviews conducted by the Researcher. The procedures undertaken before,

during and after each interview are detailed in Appendix 3. The interview lasted (on average) 60 to 90 minutes for each. Interviews were recorded and subsequently transcribed. Each of the interviews was validity tested after the interview session.

The participants were chosen according to the following criteria

- Had to have at least 3 years' work experience in ABC Company. This was done to ensure that they had been exposed to some of the good and bad phases of the company;
- Were responsible for implementing decisions handed down by senior management;
- Had experience in leading teams and had at least 3 people reporting into them. To that extent they would be the leaders to their direct reportees;
- Were involved in decision making and strategy processes put in place to tide ABC company over the current weak business phase because low oil prices.

5.10.2 Interview design

The following section explains the process of developing interview questions around key psychology leadership research areas developed through the literature review. The key themes studied include the following:

1. The type of ERM being implemented in ABC organisation
2. The type of leaders / managers involved in implementation
3. Psychological factors related to decision-making under the condition of risk:
    - Risk Seeking
    - Risk Averse
    - Protective Zones
    - Psychometric Paradigm
    - Attitude
    - Bias
    - Individual Culture
    - Surrounding Culture
    - Gender
4. All of the theoretical constructs were empirically verified. Here, the aim was to identify the existence of any additional constructs related to the psychology of decision making. Psychological constructs related to creating risk culture
    - Team Player
    - Team Aspiration

- Context Sensitivity
- Charisma
- Group Activity
- Interests of the team
- Sensitivity to Perspective
- Ability to Inspire
- Ability to identify risks / opportunities
- Sense-maker / Sense-giver
- Action Based Sense-making
- Worldview
- Transformative Learning

Again, all of the constructs were empirically verified, with the aim being to identify any additional constructs related to the psychology of developing risk culture

5. Links between the psychology of risk leadership and the benefits of ERM

Kvale's (1996) recommendation to vary the type of questions asked (e.g. direct/indirect questions, follow-up/elaboration, introductions, etc.) was adopted in this research. Direct questions were reserved until the end of the interview in order to avoid influencing participants' direction. The interpretation of questions was considered particularly critical. Therefore, participants were asked to clarify their responses if necessary, in order to minimise the possibility of bias and misinterpretation. Due to the flexible nature of semi-structured interviews, emphasis was placed on how the interviewees understood the research issues and topic. According to Kvale (1996), for an interview protocol to support the research method effectively, several dimensions should be considered. For example, the level of openness throughout the interview can set the stage for an exploratory interaction between the interviewer and the interviewees, preparing them to provide their own insight on the topic. Before an interview, the Researcher strove to gain an appreciation of what questions might be significant in relation to each of the research areas. With that in mind, the Researcher was prepared to modify the order in which the specific questions were asked during the actual interview in order to adjust to the interviewees' knowledge and the flow of the interview.

Based on the suggestions made by Foddy (1993), the Researcher developed the interview questions to focus on the research objectives, with potentially leading questions eliminated as much as possible. Interviewees requested that the interview guidelines, including the structure, programme and topics, be received at least a week in advance to allow plenty of time to familiarise themselves with the research. Interviewees were encouraged to raise any questions with the Researcher prior to the interview. Each interview lasted 30-90 minutes.

5.11 Data analysis

5.11.1 Qualitative analysis: Interview data

The Researcher wanted to gather more detailed views on leadership and ERM management than would have been possible through a purely quantitative approach. Hence an interview was also used to collect the data. The primary data was collected using semi – structured interviews. According to Collis and Hussey (2009), the semi-structured interview is the most commonly used method of data collection in qualitative research. In this research, the Researcher scheduled an interview with the respondents, met up with them individually and administered a schedule of interview questions to them. During the interview the respondents were allowed to clarify any doubts they may have whilst answering. Clarifying the questions enabled the Researcher to ensure that the meanings of the various terms in the interview schedule were understood uniformly by all the respondents. It also enabled the Researcher to ask any more questions or seek some additional information that could give more insights about ERM implementation in their organization. The Researcher made notes as the interview proceeded. In this method, there is sufficient flexibility to allow additional information to be captured and at the same time is structured enough not to waste time.

It is for these reasons that the Researcher chose the semi-structured interview method over the structured interview and the focus group methods of collecting primary data. According to Zikmund (2008), the disadvantage of the structured interview is that the Researcher cannot get additional information on the phenomenon being investigated. In the focus group, there is the challenge of finding people who share the same common interest or something in common and getting them all to come together in a particular location.

According to Hague (1994), an interview schedule needs to be constructed for a semi-structured interview. An interview schedule is a list of questions that have to be asked in the same order and format to each respondent. The list of questions should correspond to the list of topics being examined in the research. Collis and Hussey (2009) points out that

formulation of an interview schedule ensures that the data collection process is focused; the Researcher knows exactly what has to be asked and ensures that only data relevant to the research is collected. Accordingly, in this research, the Researcher constructed an interview schedule which was administered during each interview. The interview schedule consisted of two parts. Demographic data was collected in the first part. The second part of the interview schedule consisted of close ended questions which were derived from the framework developed in Chapter 4.

The Researcher considered Kvale's (1996) four-stage method the most appropriate for this research. This Researcher wanted to identify common themes or patterns emerging from the data and hence this method was chosen. The stages included in this framework are: 1) structuring the transcriptions; 2) deriving common themes and categories; 3) consolidating key themes and categories; and 4) resuming the findings. In practice, these stages are typically interactive, requiring continuous interpretations of the data and the posing of analytical questions (Creswell, 2007). Coding allowed a theoretically meaningful structure to be applied to the data (Lee, 1999). In this research, codes or descriptors are applied to key themes emerging from the data. Lee (1999) discusses three distinct coding strategies: open, axial and selective. The choice of coding strategy determines the data analysis process, and without detrimental effect strategies can be mixed to some extent, provided that the process of collecting data is clear and impartial (Lee, 1999).

The Researcher adopted this approach to allow both pre- and post-interview development of coding categories (Creswell, 2003). The coding structure allowed new categories to be added whilst examining emerging themes, concepts and factors in the course of the research interviews. This meant loosening the strict adherence of one datum to one code (observed in both axial and selective coding) and allowing for a more complete description of data through the use of broader sets of codes (Lee, 1999). In effect, it was then possible to use the data to reflect the emerging issues related to the nature of the research.

In the case of qualitative data, the description supporting any given code can usually be reviewed to help identify patterns or perform comparative analyses. Thus, qualitative coding has singularity rather than single dimensionality, in that all text about a particular issue, idea or experience may be assigned the same code regardless of the way in which hit is expressed (Sivesind, 1999; Wolcott, 1994).

The interview data was thus coded and categorised to simplify its comprehensibility (Rossman and Rallis 1998). Key themes emerging during data analysis were classified as

specific variables and defined consistently across the qualitative and quantitative phases of the study. Based on Tashakkori and Teddlie (1998), the ‘quantising’ approach was used, wherein the Researcher converted the qualitative data collected during the interviews into quantitative codes. All factor codes were developed by the Researcher, with each based on the logical association with its relevance to psychology of executive leadership and are consistently applied in Chapters 6 and 7. Factor codes and descriptors are listed in Appendix 4.

When a qualitative theme code is quantised, its meaning becomes fixed and unidimensional. The most critical issue in the interpretation of quantised data is to understand the meaning behind the coding before the conversion takes place. The way overlapping codes are interpreted will have implications for the generation, processing and interpretation of numeric data from coding of qualitative text (Bazeley, 2004). For the purpose of this research, the Researcher exported dichotomous (0/1) codes into Excel to indicate the presence or absence of a concept, with counts providing the frequency. This technique was applied to both interview and survey data. Since there are no strict rules to define how much of the collected data should be coded to allow valid conclusions to be drawn, the Researcher relied on the quality of the participants and the data they supplied to construct reasoned arguments in support of the research aim. Each statistical technique carries particular assumptions that should be met for appropriate use of that technique. For data derived from qualitative coding, most measures (and those applied in this study) are nominal or ordinal rather than interval: distributions are unknown and normality cannot be assumed.

Due to the nature of qualitative research and the size of the interview sample, basic descriptive reporting was performed in Excel and presented as frequencies. In qualitative research, a common strategy is to count the number of times a code occurs. Such quantised frequencies identify codes that occur repetitively and therefore emerge as key concepts or themes (Onwuegbuzie and Teddlie, 2003). The quantised data can then be statistically compared to the quantitative data collected separately.

Non-quantifiable interview data was presented as direct quotations in order to simulate the ambience of the interview, which is particularly important in the case of telephone interviews (see Chapter 6). Interview responses were used for an analysis of management behaviour as well as any matters related to the psychology of executive leadership in the Saudi Arabian private sector. All interviews were conducted in both English and Arabic, meaning that translations were therefore needed.

***The Interview Schedule* -** According to Hague (1994), an interview schedule needs to be constructed for a semi-structured interview. An interview schedule is a list of questions that have to be asked in the same order and format to each respondent. The list of questions must correspond to the list of topics being examined in the research. Collis and Hussey (2009) points out that formulation of an interview schedule ensures that the data collection process is focused; the Researcher knows exactly what has to be asked and ensures that only data relevant to the research is collected. Accordingly in this research, the Researcher constructed an interview schedule which will be administered during each interview. The interview schedule was developed from the findings of the literature review regarding ERM implementation, decision making, risk building capacity and how these three concepts are all inter-related with each other. Transcripts of each interview were then be prepared by the research for the purposes of analysis.

***Analyzing Primary Data* -** Figure 3 indicates the process that was used to analyze the qualitative primary data collected from the semi-structured interview

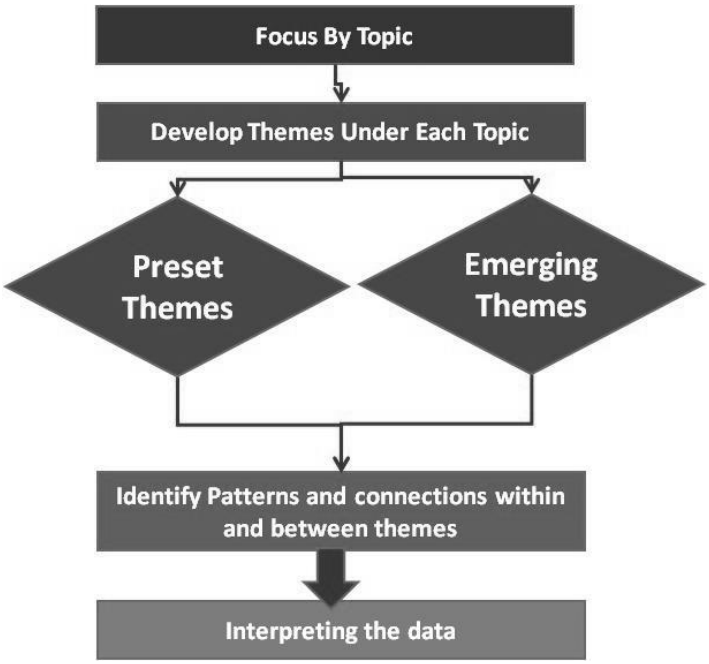

Figure 5-6. Qualitative Data Analysis Process

Source: Researcher

Focus by Topic – The first step in the data analysis process was to examine how each respondent answered question corresponding to each topic. The data from the different transcripts was re-organized such that the responses for each question from each respondent

will be collated one below the other. This was used to identify similarities or differences contained in the data for each topic.

Developing Themes under each Topic - A process of identification of themes was used to analyze the qualitative data collected through the semi-structured interview. The text was analyzed first to identify themes already derived from the secondary data analysis and summarized in the conceptual review. Each of these themes was given an abbreviation to help organize them. The data was then again analyzed to identify any new main themes or new sub-themes relating to employee engagement. Each of these themes was accorded abbreviations for analyzing and categorization into emergent themes. This entire process was iterative and involved multiple readings of the primary data to identify all possible themes from the data.

Identification of Relationships Between Themes – After the main themes and the sub-themes are identified, the Researcher again analyze dthe data to identify patterns or relationships between the themes. The similarities and differences under each theme corresponding to employee engagement were examined. The key ideas expressed by the respondents were compared with the secondary data to identify sources of employee disengagement. Which themes consistently emerged throughout the data was identified to indicate their relative importance.

Interpreting the data – Once the key themes and the relationships between them are identified, the Researcher used a process of narrative analysis to interpret the data. This included supporting key inferences regarding employee engagement levels emerging from the data with quotes given by the respondents. These inferences were then compared and contrasted with secondary data on the employee engagement. The data indicated the reasons for failure of ERM implementations in most frims. What needs to be done to improve decision making capability under condition of risk and uncertainty and how this helps improve ERM implementation as well as the ability to build a culture of risk was examined.

Ethical Considerations - Informed consent was an essential ethical consideration in this research. Therefore, the Researcher asked each interviewee for permission to make an audio recording of the interview. Ensuring that interviewees' answers are captured in their own terms is essential to the detailed analysis required in qualitative research. A copy of the ethical consideration is given in appendix 3. After each interview, the Researcher made further notes, including specific non-tangible observations related to the process (Bryman,

2012). Each of the interviews was then carefully transcribed for analysis based on the aforementioned recordings and notes. The Researcher considered transcription necessary to facilitate the thorough examination of responses and so as to achieve good research quality. Moreover, this helped to decrease the influence of the Researcher values or biases on the data analysis. Therefore, all transcripts were edited thoroughly to ensure the accuracy and validity of the data collected throughout all of the interviews. Each participant was given a copy of their respective transcript to allow for corrections or additions. A sample transcript is included in Appendix 5.

5.11.2 Quantitative analysis: survey data

As noted at the beginning of this chapter, the qualitative interview data were validated through the quantitative survey data. The subsequent analysis of these data is discussed in this section of the thesis. Rice (1995) and Robson (2002) state that Researchers often use the methods they are most familiar with, relying on their own experience and expertise in working with the chosen method. This is because the range of different analytical methods available can cloud the simplicity of quantitative data analysis. Therefore, the Researcher experience and knowledge with Microsoft Excel and its data analysis functionality encouraged the Researcher to select this software over more sophisticated but complex software (Trochim, 2000). The Researcher chooses excel to do the analysis.

The completed surveys were edited to remove any inaccurate or invalid forms, any those were considered unusable, such as where a significant part was incomplete.

5.12 Research quality

In the following section the Researcher discusses the general standards for assessing the quality of the current research in terms of its reliability and validity. Johnson and Onwuegbuzie (2006) highlight that whilst the importance of validity in quantitative research has long been established; theoretical discussion on this aspect of qualitative research has been more contentious. In addition, in mixed methods research, the issue of validity is rather undeveloped, thus such research involves combining the complementary strengths and individual weaknesses of quantitative and qualitative research, and assessing the validity of findings is particularly complex and can yield “the problem of integration” (Johnson and Onwuegbuzie, 2006).

Researchers have indicated that the concepts of reliability and validity have been replaced by the broader one of verification, which ensures that research findings are accurate from the viewpoint of the Researcher and the participants at the same time (Denzin and Lincoln 1994;

Strauss and Corbin 1998). In addition, Seale (1999) and Onwuegbuzie and Johnson (2006) agree that validity and reliability no longer seem adequate to summarise the range of issues raised as a concern for quality, preferring the term ‘legitimation’. The case for data quality is important, and is appropriate for this research study regardless of the specific terminology that different authors have used.

Valuable research is said to possess neutrality, consistency, applicability and truth value as paramount qualities (Guba and Lincoln, 1981). The nature of knowledge within the rationalistic (quantitative) paradigm differs from that of the knowledge in the naturalistic (qualitative) paradigm (Morse *et al.*, 2002). Moreover, the quality of data can be evaluated by means of the criteria of internal validity (accuracy), external validity (generalisability), construct validity (measurability) and reliability (consistency, replicability) (Gill and Johnson, 1991; Yin, 1994). Guba (1981) and Lincoln and Guba (1985) refer to the ‘trustworthiness’ of qualitative research and use terms such as ‘credibility’, ‘transferability’, ‘dependability’ and ‘confirmability’. According to Creswell (1998, 2003), internal validity measures the strength of qualitative research, while reliability and generalisability are more important for quantitative research.

A review of the literature provides significant evidence concerning the assessment of previous research of a similar nature. The issue of achieving internal validity arises only if a researcher is unable to generate a convincing case for the observed behaviours, which historically have not been described in the literature as a problem. In addition, internal validity is associated with qualitative research, whose outcomes cannot generally be extrapolated to a wider population: it addresses the question of whether a framework is consistent with theory. One the other hand, strong literature exists to help document and support the establishment of construct validity; it is best classified as asking whether the sources of data are relevant (Lecompte and Goets, 1982; Morse, 1999).

In contrast, external validity appears more difficult to attain and should therefore be addressed in the primary data collection (i.e. the attributes and behaviours researched should be proven to be valid in subsequent research, considering potential changes of circumstances). The standard of external validity usually relates to quantitative studies, representing the ability to extrapolate the results and relate them to a larger population by identifying the extent to which the results can be generalised.

Finally, reliability is related to consistency and the repeatability of an investigation, indicating that the conclusions drawn from each run of a test will be broadly the same.

5.12.1 Reliability

Reliability refers to the degree to which a research study is considered applicable to the real world environment (Trochim, 2000). It can be described as the extent to which the procedure would generate identical findings regardless of how many times it was tested against random members of a population (Hammersley, 1990). Similarly, Gill and Johnson (1991) define reliability as the Researcher ability to replicate an earlier study, achieving consistent results given unchanged parameters. Creswell (2003) also highlights the need for the Researcher to ensure the accuracy and credibility of his/her findings, whereas Davies (2007) discusses reliability in qualitative research as follows:

> Because qualitative researchers do not normally employ any formal or precise systems of measurement, the concept of reliability is related to the rigour with which the Researcher has approached the tasks of data collection and analysis and the care with which the report describes in detail the methods that have been employed – including, especially, some discussion of how critical decisions were made. Often, the term 'reliability' in this sense is equated with methodological 'accuracy'. (p. 241)

Moreover, Bryman (2008, p. 31) offers an acceptable definition of reliability by noting that the concept is normally used in relation to the question of whether "measures that are devised for concepts in the social sciences are consistent". Bryman (2008) also highlights the importance of three main aspects of reliability, namely: 'sufficient', 'compelling evidence' and the 'rigour of data collection and analysis'. The employment of multiple data collection methods in this research enables sufficient and compelling evidence, and rigour, to be achieved. Reliable research methods involve the ability to record observations consistently. Table 5-6 illustrates a number of verification strategies that can support the reliability of research.

Table 5-6 Reliability strategies

Reliability strategy	Adoption in the research
Methodological coherence	The Researcher confirms the similarity between the research questions and the components of the method (Morse *et al.*, 2002)
Defining consistent sets of questions for research interviews and surveys	The Researcher determines a set of measurable questions linked directly to research objectives
Think theoretically	The Researcher uses new ideas emerging from data and reconfirmed in new data; this gives rise to new ideas that, in turn, should be verified in data already collected
Recording and transcribing research interviews	The interviews in the research are recorded to provide more reliable evidence and avoid any bias that could arise if the Researcher had endeavoured to recall interviews from memory

Source: Adopted from Creswell (2007)

According to Neuman (2003), for qualitative researchers, "reliability means dependability of consistency and that they use a variety of techniques (interviews, participation, documents, etc.) to record their observations consistently". Thus, reliability can be addressed by using standardised methods to write field notes and proper transcripts in the case of interviews. Neuman (2003, 288) also adds that "reliability can be improved by comparing the analysis of the same data by several observers". The number of research participants (i.e. the sample size) may affect the reliability and applicability of the results. The Researcher should observe reliability during the course of the entire study (Bogdan and Biklen, 1998). The reliability of qualitative data cannot be measured numerically; thus, it is best described as trustworthiness (Sandelowski, 1986; Trochim, 2000). Therefore, it is essential to examine the trustworthiness of qualitative research in order to ensure reliability (Seale, 1999). The data collection phase is, likewise, critical: each participant should be selected using the same parameters, and the line of questioning should be consistent. The consistencies of the findings of this research have been supported by the use of mixed methods. Qualitative data obtained from the interviews was transcribed and analysed with a very high degree of accuracy.

It is asserted that reliability and validity can be achieved through two key factors. First, the environment surrounding the research topic, field or area should be explored in depth in order to gain a good feel for it and spend time investigating sources of data and information. Secondly, researchers should maintain persistent observation of developing issues in order to increase alertness to any potential unexpected occurrences (Bassey, 1999).

According to Anderson (2005), during an interview, the conduct of the researcher impacts how the respondents participate in the research. This in turn impacts the kind of responses given and the accuracy of the findings. Therefore, when conducting the interview the researcher made all possible efforts to not only gather facts related to psychology of risk leadership but also made efforts to put the respondents at ease and gained their confidence in order to elicit more candid and detailed responses. The researcher at all times analysed the processes and inferences / assumptions made whilst gathering data and interpreting results. This enabled more objectivity and elimination of possible bias when interpreting the data. While transcribing data from the sheets, the researcher avoided missing out any pieces of data or misinterpreting such data. In this way, the possibility of inaccuracies was avoided as much as possible increasing the reliability of the research.

5.12.2 Validity

Trochim (2000, 12) describes the validity of research as an "approximation of truth of a given proposition or conclusion". Data collection and analysis should focus on reducing potential bias and ensuring high reliability. Creswell (2003) highlights a number of strategies for ensuring validity, which are used by different researchers, and recommends adopting at least two such strategies in any given research, as illustrated in Table 5-7, which shows that the Researcher collaborated with others from the same field of knowledge at the research formulation stage.

Table 5-7 Validation strategies

Validation strategies	Adoption in the present research
Research collaboration	Peer review: the current research was supervised by academic researchers with extensive experience in both the private and public sectors, who reviewed the data and research process (Lincoln & Guba, cited in Creswell & Miller, 2000) External audit: the researcher consulted an auditor external to the study (with no connection to this research), who examined the process (research steps, decisions, activities) and product (narrative accounts, conclusions) of the study to determine its accuracy
The researcher solicits participants' views of the credibility of the findings and interpretations	Done during the pilot study
Rich and thick description	Qualitative data collected in semi-structured interviews supporte by the findings of the quantitative research questionnaire
Randomisation	Participation in the quantitative questionnaire in the organisation was determined randomly to ensure that there was no systematic bias in either sample group
Sample sufficiency	Samples were sized appropriately to achieve statistically significant and reliable results. Moreover, they consisted of participants who were in the best position to represent or have knowledge of the research topic
Sequential data collection and analysis	Collecting and analysing data concurrently created a mutual interaction between data and analysis

Source: Adopted from Creswell (2003)

According to Creswell (2013) Validity also refers to the extent to which the data collected in this research corresponded to the various dimensions of the psychology of risk leadership as indicated in the literature and to the methods used by the research to collect the data. To ensure more validity, the interview schedule was derived from the literature review only and pertained to topics related to risk leadership, decision making and organizational risk. By constantly asking the respondents to feel free to clarify any doubts, the Researcher also helped the respondents avoid any misunderstanding of data when conducting the interview and also ensured that the interview schedule was interpreted and understood uniformly by all of the respondents.

5.12.3 Triangulation

In order to further increase the validity and reliability of this research a process of triangulation was used. According to Alexander (2001), triangulation works by combining views and observations from different scientist, researchers, theories, methods and other scientific materials, rather than going with the observations arising from single-method / observer and theory studies. Bloor and Wood (2001) state that the main purpose of triangulation is to confirm findings through convergence of different viewpoints. The point at which all these different views converge is seen to represent the truth. Denzin and Lincoln (1994) point out that the deficiencies of using one single method in research can be overcome through a combination of methods, thereby leveraging on the strengths of each one. The above views are corroborated by Smith and Kleine (1986) who point out that triangulation refers to those processes by which a finding can be verified by indicating that there is agreement amongst the various independent measures chosen. At least the results of the various measures must not contradict each other. Young (2008) states that social realities are too complicated to be grasped in their entirety with just one way of investigation. They are too complicated to be captured by any one, single method of data collection or method. Therefore, the utility of triangulation that compensates for the weaknesses of other methods. Triangulations provide a holistic overview of different social realities. It is a process of verification that increases the validity of research by including several different viewpoints and techniques. From these views, it may be inferred that triangulation is that process whereby two or more theories are combined, multiple data sources are merged, different investigative methods are combined to understand one single phenomenon. The objective if triangulation is to obtain convergence of viewpoints and arrive at as objective a view of a particular phenomenon as possible.

According to Adams (2012), triangulation is used to validate data by using cross-verification processes using more than two sources. It uses different instruments to test the consistency of findings and mitigates or even eliminates the possible negative impact of any factor that threatens the validity and reliability of the results. Suchi and Krampen (2014) pointed out that processes of triangulation deepen and widen understanding about an issue. It can be used to find out unique findings, yield multiple perspectives about a particular problem, and be used to explain in detail the richness and complexity of human behaviour by examining it from multiple standpoints. For these reasons, the researcher decided to use a process of triangulation in this research to improve its reliability and validity.

The Researcher also used triangulation because of the many benefits associated with the process as indicated by the literature on research methodologies. Milton (2010) points out that triangulation involve the use of additional sources of information that provides better insights into a topic. The short-comings of any one data source get reduced when the data gets reconfirmed by multiple sources. Multiple sources result in better verification and validity of the data as well as providing more comprehensive data. Because the same data is validated by multiple sources, it becomes possible to better draw conclusions and understand outcomes. It also becomes easier to identify inconsistencies in data. Reicher (2005) identified four main reasons for using triangulation methodologies. The various different instruments complement and add value to each other by indicating different aspects of the same issue. They provide an option to refute hypothesis as well as to confirm hypothesis. In addition, they allow one set of options to throw more light on an issue or matter that has been derived from other options.

However, the most important reason for the Researcher to use triangulation was to reduce the impact of bias. Schaufeli (2016) indicated that bias can be a big source of error in research, if the research depends only on one source of data and / or measurement. There are several sources of bias, all of which can be effectively countered by triangulation methods. Measurement bias occurs depending on the methods used to collect data. To avoid bias arising out of pressure imposed by peers on group participants in research, the Researcher used an individual interview method. This was the triangulation method use to avoid measurement bias. Sampling bias occurs when the entire respondent set in a research is not covered. In other words, the respondents sample set chosen is not representative of the phenomenon being studied. In this research, this was avoided by using mixed sampling method using both random and purposive sampling. This is a method of triangulation that

combines the benefits of both options to cover all possible respondents. Procedural bias occurs due to faults in procedure that puts the respondents under pressure to give out a certain type of information. In order to avoid this particular bias, this research used a process of semi-structured interviews so that there was enough flexibility provided to the respondents to get their doubts cleared and answer their questions in a more candid atmosphere.

Other methods of triangulation include data source, methodology and theoretical methods. The Researcher used data source triangulation by using multiple sources of data. The use of multiple sources of data is evidenced in the use of secondary and primary data that has been derived from interviews, journals, books, publications and internet sources. This enabled the Researcher to use data or viewpoints that are corroborated or complemented by many sources and reject those viewpoints that are contradictory to each other. Another triangulation method used by the Researcher was that of 'methodology triangulation'. This meant combining multiple methods including desk and field research to gather information. The secondary data was used to identify the psychological constructs related to decision making and creating a culture of organizational risk amongst leaders entrusted with the task of ERM implementation. These constructs were validated through primary data gathered from risk leaders in an organization. In this way, options from one method of data collection were corroborated by options found in another method of data collection. The primary and secondary data were then combined to provide an explanation of how psychology of decision making and risk management could help in effective ERM implementation amongst risk leaders. This research also used a process of theoretical triangulation. In this method, more than one theory is used to gather, interpret and analyse data and is used for the integration of results. It provides a better understanding of data and information. Accordingly, various psychological theories were considered in order to derive and better understand key constructs involved in risk decision making and building an organizational culture of risk. Through these various processes of triangulation, the validity and credibility of the data used in this dissertation was improved.

According to Shih (1998), there are three possible outcomes arising from a strategy of triangulation. The first of these (which is also the main objective of triangulation) is convergence. When the data from multiple sources indicate a common purpose, what results is convergence. The second outcome is that triangulation processes may reveal inconsistencies in the data from different sources. The third outcome is that the data outcomes may be contradictory. This research used the triangulation strategy to check for all

three outcomes. It was found that the different methods did not reveal anything contradictory or inconsistent. Rather, all of them corroborated the same view point. This was the biggest benefit of using a strategy of triangulation.

5.13 Summary

A detailed explanation of the methodology has been explained in this chapter. The chapter began by considering the ontological, epistemological and theoretical foundations of the interpretivist approach, which forms the basis of this research and the justification for its selection. The qualitative paradigm was found to be applicable because it matched the Researcher ontological and epistemological stances. This chapter also notes that a combined deductive/inductive research approach was taken in this study. A hybrid data technique (mixed-method approach) was also adopted, as it was deemed appropriate to the research context. Since the Researcher collected data at one specific point in time, this study is considered cross-sectional.

Having explored potential methods of data collection and analysis, the Researcher determined that mixed methods were most suitable option for this research. Mixed methods research can be a dynamic and adaptable option to extend the research scope and improve the analytical power of studies. The Researcher aimed to align the qualitative and quantitative datasets whilst preserving the integrity of the numbers and words in each set of data. Consequently, qualitative data were collected via semi-structured interviews and quantitative data by means of a questionnaire. The primary data collection was supported by secondary findings.

The chapter has also explained how the empirical data was analysed to focus and identify patterns and trends related to a social phenomenon that involves the psychology of executive leadership in risk management in the Saudi private sector, with multiple perspectives taken into account. Justification was provided for the decision to gather qualitative and quantitative data through two research phases using a semi-structured interview and questionnaire, respectively.

The next chapter describes the fieldwork, including a comprehensive description of the case study. It presents the findings of the qualitative phase and compares these with reports from the relevant literature.

Chapter 6 – Analysis of the Interviews

6.1 Introduction

This chapter presents the results of the data gathered from the qualitative questionnaire to the respondents of ABC organization. ABC Company manufactures key equipment that is used in the Saudi Oil and Gas sector including wellheads and valves that support the turbines and centrifugal compressors operating in oil wells throughout the country. The company is privately owned by a Saudi national whose vision is to localize production of those components required for the oil and gas sector rather than importing them. The company also provides components required for drilling and production of oil and gas. The company has a workforce of 600, 75% of whom are Saudi locals. The company also aims to start exporting these components to other countries in the Middle East such as Kuwait that are dependent on the oil and gas industry. However, with the decline in oil prices over the last three years, the company has put its export plans on hold. There is little demand for oil exploration and drilling equipment manufactured by ABC while the demand for its maintenance equipment has remained constant and not increased. According to Wegner (2008), the aim of qualitative analysis is to identify prominent or recurring themes and patterns that emerge from a larger mass of data, to link these themes together, and to extract meaning or knowledge from them. The aim of this chapter is to better understand: (i) the nature of risks that justify ERM implementation; (ii) what the respondents feel are the factors that impact their decision making processes; (ii) and what, in their view, makes it possible to create risk culture in the ABC Company. ABC Company manufactures lubricants for drilling operations in the oil and gas industry. The findings on risk leadership initially discussed in Sections 2.3, 2.4 and 2.5 of Chapter 2 are extended through the qualitative analysis of primary data.

6.2 Coding for qualitative analysis

Table 6-1 demonstrates the coding scheme that was followed for the qualitative analysis in which the various themes pertaining to risk leadership have been analysed.

Table 6-1 Codes: Qualitative analysis

No.	Interview Questions	Factor Code
Section 1 : Demographic Profile		
1.1	Age Distribution	DPQL1
1.2	Tenure	DPQL2
1.3	Designation Grade	DPQL3
1.4	Department	DPQL4
Section 2 : Risk Decision Making		

2.1	Nature of Risks	RDMQL1
2.2	Decision Making Process	RDMQL2
2.3	*Positivist Formistics*	RDMQL2.1
2.4	*Contextualist Pragmatists*	RDMQL2.2
2.5	*Contextualist Organists*	RDMQL2.3
2.6	*Contextualist Integrativists*	RDMQL2.4
Section 3 Factors Impacting Decision Making		
3.1	Heuristic Factors	FDMQL1
3.2	Emotion	FDMQL2
3.3	Gender	FDMQL3
3.4	Culture	FDMQL4
3.5	Personality	FDMQL5
Section 4 : Leadership Importance		LIQL1
Section 5 : Risk Culture		
5.1	Responsibility	RCQL1
5.2	Participatory Decision Making	RCQL2
5.3	Trust	RCQL3
5.4	Values	RCQL4
5.5	Employee Satisfaction	RCQL5
5.6	Communication	RCQL6
5.7	Empowerment	RCQL7
5.8	Leadership	RCQL8
5.9	Common Vision	RCQL9
5.1	Work Environment	RCQL10
5.11	Job Satisfaction	RCQL11
5.12	Positive Relationships	RCQL12
5.13	Ethics	RCQL13

The above codes were used to develop themes in the qualitative analysis and to create frequency tables and pie charts supported by quotes from the respondent's answers. As Robson (2002) states, in-depth interviews are useful when a researcher needs to "find out what is happening and to seek new insights". Since this research is an exploratory study, the semi-structured interview method was deemed the most appropriate approach of all interview types as compared to focussed, structured, in-depth interviews. Moreover, choosing this type of interview encourages interviewee to suggest other interviewees and other sources of data, as noted above (Yin, 2009). The Researcher considered Kvale's (1996) four-stage method the most appropriate for this research. This Researcher wanted to identify common themes or

patterns emerging from the data and hence this method was chosen. The stages included in this framework are: 1) structuring the transcriptions; 2) deriving common themes and categories; 3) consolidating key themes and categories; and 4) resuming the findings. In practice, these stages are typically interactive, requiring continuous interpretations of the data and the posing of analytical questions (Creswell, 2007). Coding allowed a theoretically meaningful structure to be applied to the data (Lee, 1999).The codes corresponding to various themes given in Table 6-1 correspond to decision making under condition of risk and developing an organizational culture of risk and the themes were derived from Sections 2.3, 2.4 and 2.5 of Chapter 2 of the literature review.

6.3 Demographic analysis

Figure 6-1 indicates the age frequency distribution of the 42 respondents, corresponding to factor code DPQL1.

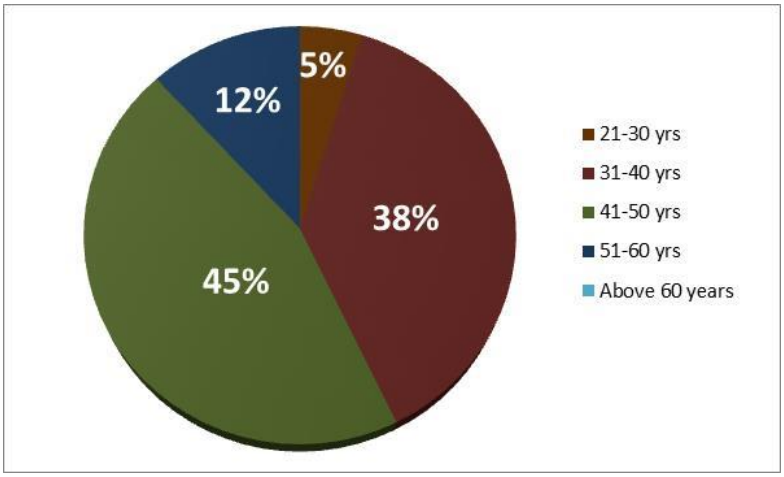

Figure 6-1 Respondents' age distribution

Age indicates the level of maturity of the respondents. This research presumes that the greater the age of the person the more experience and maturity a person has. The in turn would lead to more accurate viewpoints that reflect the situation of leadership and ERM implementation into Saudi Arabian organizations. For this reason, age levels of respondents were examined from figure 6.1 is observed that the majority of respondents (73%) were aged 31-50 years old, whilst 12% were aged 51-60 years and 5% were aged 21-30 years. This indicates that the majority of the respondents are not very young, but more mature individuals. Figure 6-2 indicates the tenure frequency distribution of the respondents at ABC organisation corresponding to factor code DPQL2.

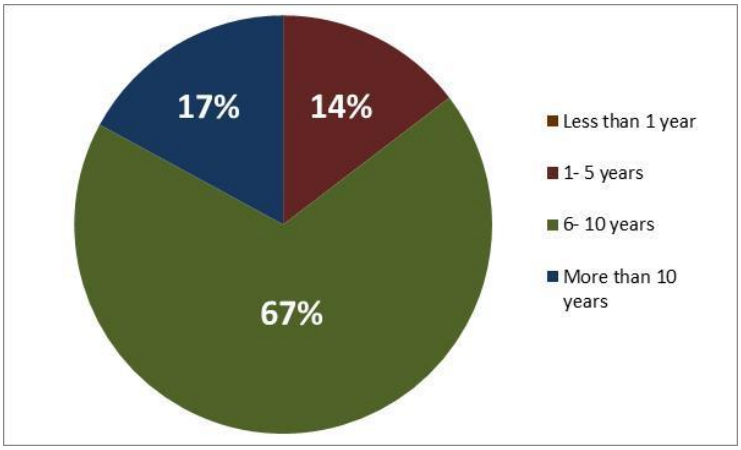

Figure 6-2 Respondent tenure

Figure 6-2, above, demonstrates that the majority (84%) of respondents had a tenure of 6 years at ABC organisation, with the remaining 14% having a tenure of 1-5 years and no participants having tenure of under 12 months. Figure 6-3, below, illustrates the designation/grade frequency distribution levels of the respondents within ABC organisation, corresponding to factor code DPQL3.

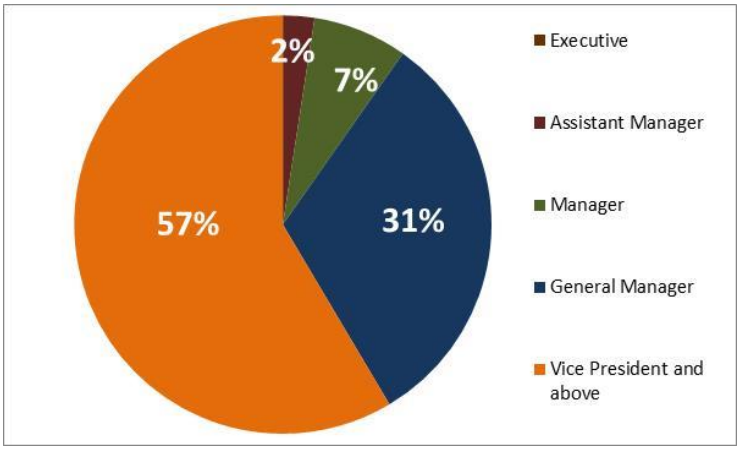

Figure 6-3 Designation / Grade

Designation / grade in the organization are one of the most important characteristics that might affect the person's attitudes and the way of looking and understanding any particular social phenomena. Level of grade of the each respondent in each organization would impact response of an individual and therefore it becomes imperative to know the grade level background of the respondents. As demonstrated in the above chart, the majority (88%) of respondents were at the General Manager grade or above, with 7% at the Manager grade, and no participants at the Executive grade. Figure 6-4, below, indicates the department-wise frequency distribution represented by the respondents, corresponding to factor code DPQL4.

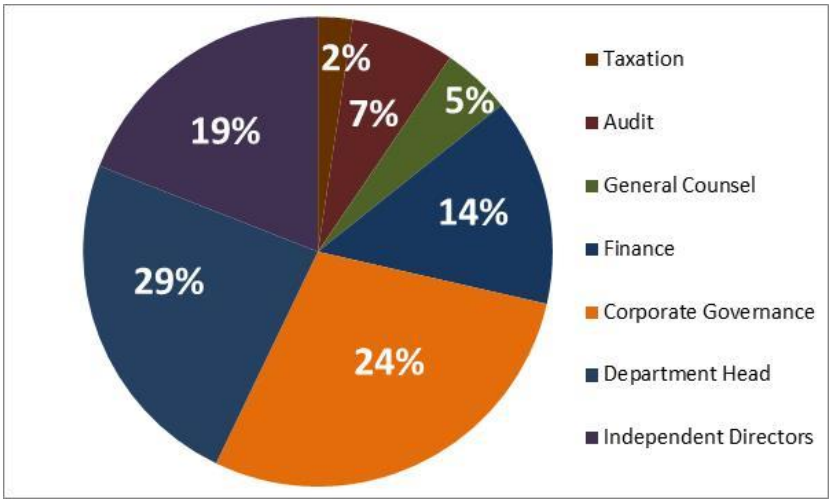

Figure 6-4 Departments

From Figure 6-4, it is observed that the majority of the respondents that form corporate governance are independent directors and department heads. Others worked in the taxation, audit, finance and legal departments of the organisation.

Implications of demographic data – All of the respondents were of a mature age, with lengthy tenures at the organisation. They were all of senior grade/designation and belonged to departments such as corporate governance, finance, taxation and audit, which are conventionally involved in risk management (Spencer and Hyman, 2012). These participants are department heads and independent directors, who are also involved in risk management.

The implication here is that the respondent best represent those individuals in an organisation most concerned with implementing ERM frameworks, making decisions under the condition of risk and uncertainty, and developing a risk based organisational culture. Their views on decision making and developing risk culture will therefore be more pertinent and accurate in showing how risk leadership leads to efficient ERM implementation. Although ABC Company operates in the petroleum sector, the views of the respondents will reflect the current risk management practices, views of risk, and so on, shared by the majority of organisations operating in Saudi Arabia.

6.4 Risk decision making

The naturalistic method of decision making acknowledges that human capability has to be considered in the decision-making process under the condition of risk and uncertainty, and that decision making should be understood in the context of a dynamic work/business environment (Zsambok and Klein, 1997). In this context, Nutt (2009) states that critical decisions are risky due to the ambiguity, conflict and uncertainty that occur in real life

situations. Critical decisions become bad or wrong when ambiguities and uncertainties are not considered, treated superficially or even ignored during decision making. Slovic (2000) suggests that the wrong decisions are made when faulty mental reasoning results in the erroneous consideration of risky situations. Here, the wrong decision is one that does not lead to the desired outcome. The implication is that both the mental processes of leaders and the context in which decision making occurs should be considered during the ERM decision-making process.

Accordingly, this section indicates how respondents make decisions under the condition of risk and uncertainty.

6.4.1 Nature of risks

(Q1). Respondents were asked to outline the risks facing the organisation they worked for. Respondents' comments are summarised in Figure 6-5, which represents the frequency distribution of the nature of risk, corresponding to factor code RDMQL1.

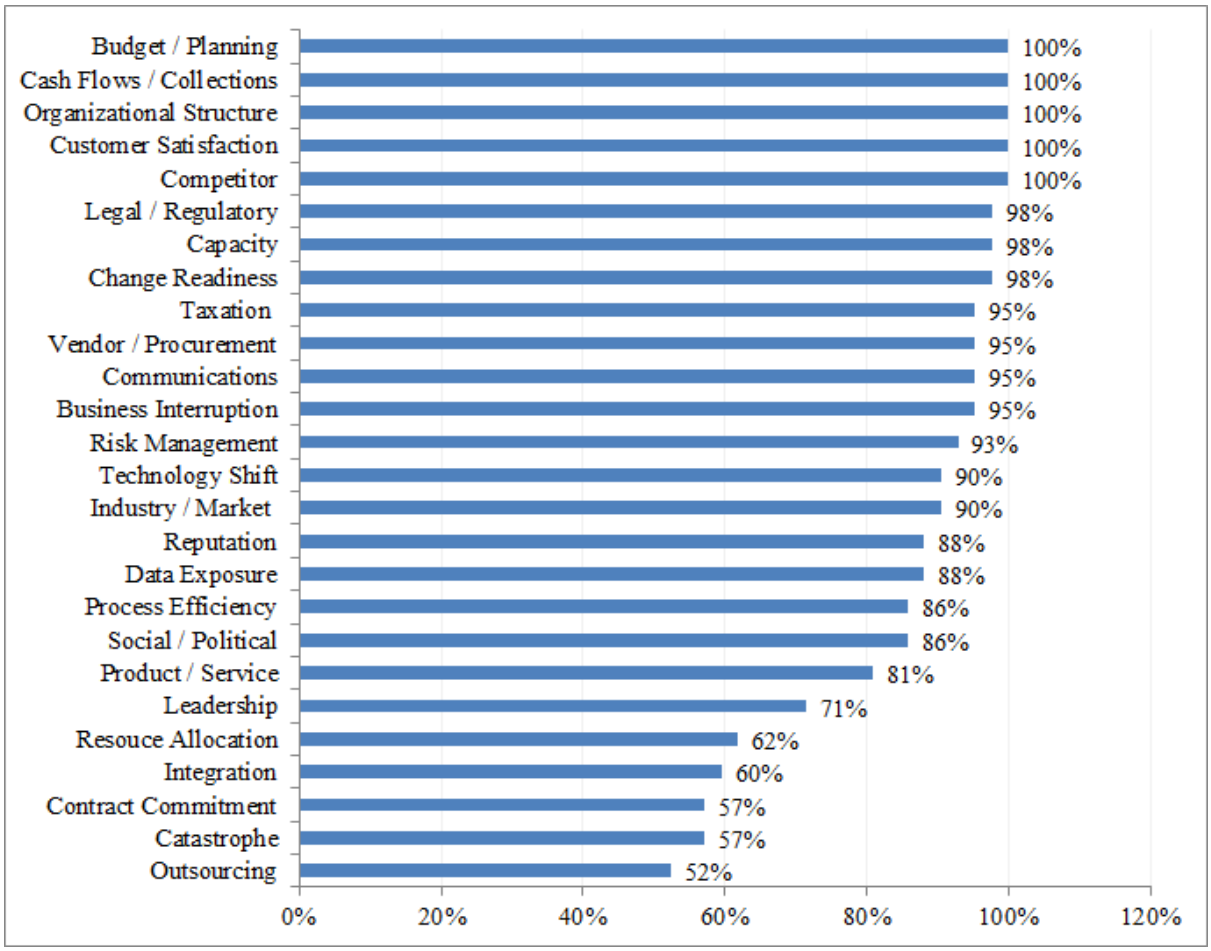

Figure 6-5 Nature of Risks

Figure 6-5 summarizes the various risks ABC organisation and other modern organisations have are faced with. It is evident that an organisation has to deal with more than just financial risks or the risk of natural disasters, which has been the focus of risk management literature thus far. The risks are stated as follows: operations, compliance, strategy, external market, competition, product development, compliance, regulations, employee behaviour, organisational structure, risk diversification and marketing. These risks result in uncertainties that impact all aspects of the business, span the entire organisation, and are diverse in nature. According to most respondents, these risks have to be suitably countered as they "impact the profitability, effectiveness and brand value of the organisation".

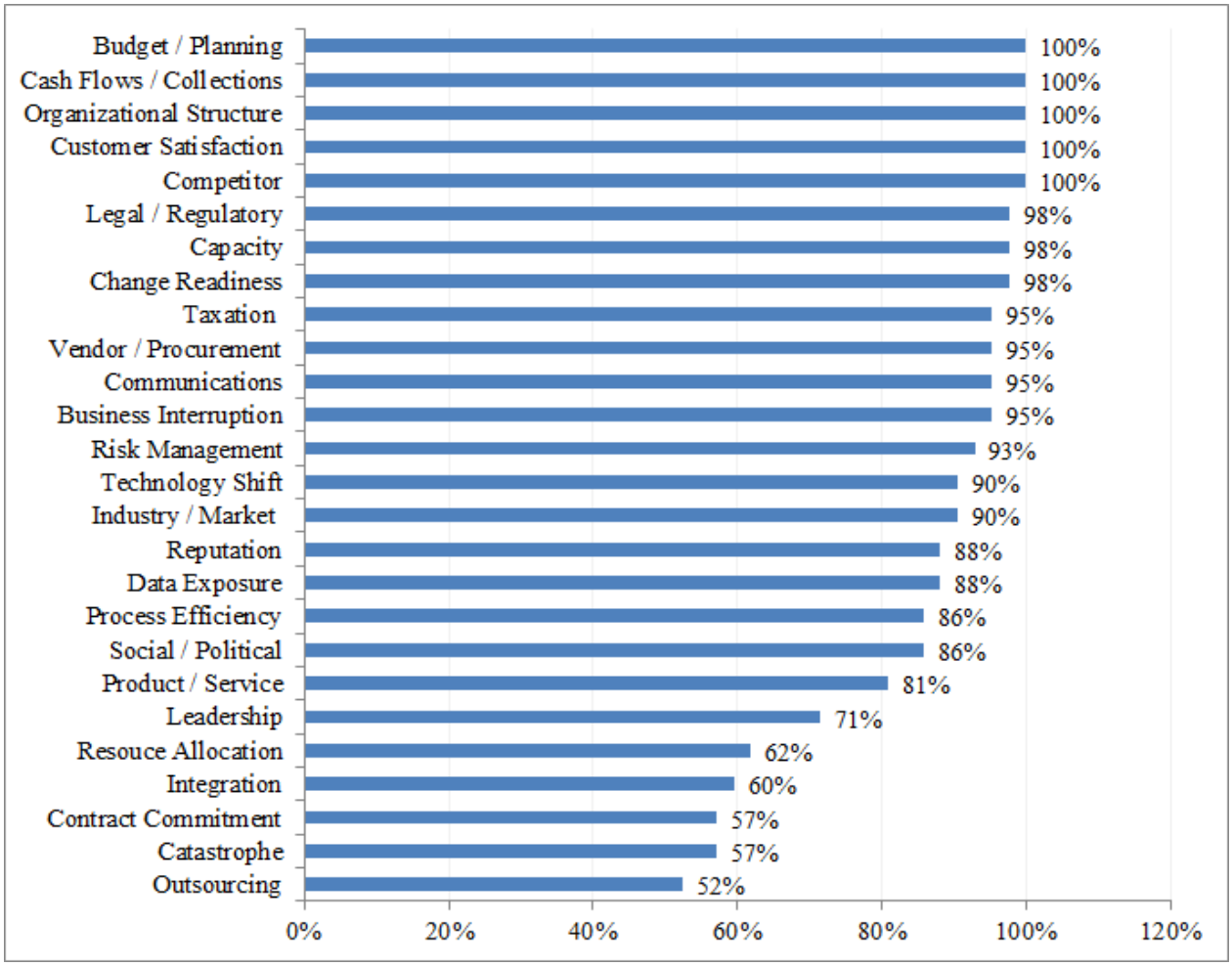

Figure 6-5 Summary of risks

The implication here is that there is a need to take a strategic and holistic approach to dealing with risk, in the form of enterprise risk management this is ERM. Aon Corp (2009) has outlined a set of 10 main risks faced by today's organisations. These include economic recession, changes in regulations/legislation, business interruptions, competition, risk to commodity prices, damage to brand value/reputation/goodwill, lower liquidity, supply chain

failure, liability to third parties, and top talent attrition. COSO (2004) also categorises the risks impacting modern organisations as events that are volatile, complex and heterogeneous, as well as external risks such as sudden changes in consumer requirements or competitor strategies, along with employee behaviour and developments such as new policies, regulations and standards to be complied with. A comparison of these risks with figure 6-5 indicates that Saudi petroleum organisations are similar to the majority of organisations operating in other countries all over the world with regards to the types of risks faced.

6.4.2 Decision-making process

(Q2). Respondents were questioned as to how they made decisions under the condition of risk and uncertainty.

Based on the key themes emerging from the responses, the Researcher classified five dominant modes of risk decision-making, as illustrated in Figure 6-6, corresponding to factor code RDMQL2.

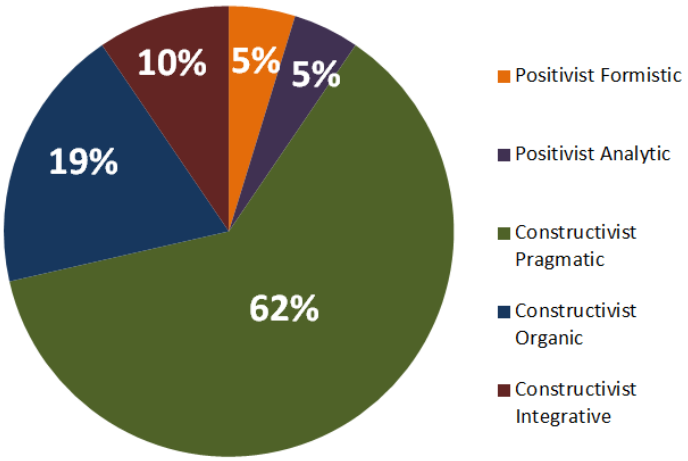

Figure 6-6 Five modes of risk decision- making

The above graph demonstrates that the constructivist pragmatist method is adopted by the majority of respondents (62%). Other more common approaches were the constructivist organic (19%) and constructivist integrative (10%) modes. A smaller number of participants reported the use the positivist formistic approach (5%) to decision making as well as the positivist analytic (5%) mode.

Positivist formistic

The positivist formistic group was classified on the basis of their characterisation of risk as ‘real’, ‘absolute’, ‘tangible’, and ‘measurable using informal processes of past experience and intuition’, all of which were assigned code RDMQL2.1. According to this group, risks are

absolute in that they are real and tangible. However, they are definite concepts against which benefits and returns may be quantified. Because risks are absolute, the decision-making process should be designed to lower the level of absolute risk down to controllable levels. In order to arrive at a decision, experiential learning and intuition are used, with the risk appetite, wants and needs of key stakeholders taken into consideration. Here, the assumption is that risks are known because they have occurred in the past, and the solution is to engage in behaviour that is rational, analytic and compliant. In the case of new, unforeseeable or unknown risks, they would seek as much information as possible, and gather data that are 'accurate, concrete and factual' before coming to a decision. These data are then used to build a 'correct risk profile', which leads to the appropriate treatment measure or decision. Respondents indicated that incorrect, distorted and incomplete data resulted in 'incorrect risk profiles', which would lead to 'erroneous decision making processes'. The learning outcomes (whether favourable or unfavourable) derived from building risk profiles are used for decision making as and when similar occurrences of risk occur.

This group's method of decision making has been termed **positivist–formistic** as risks and decisions are based on forms that are deterministic, absolute and universal. Risks are real, tangible and measurable. Decisions are taken based on stakeholder expectations and compliance. Problem-solving approaches are rational, analytic and driven by factual / accurate data. Decisions will not be made on the basis of data that are not comprehensive, inadequate or uncertain.

In support of these views, positivist respondents stated that the current market situation – characterised by low oil prices, which impacts the Saudi economy and, therefore, also ABC organisation – is similar to the way it was in the period that immediately preceded the 1973 oil crisis. The respondents felt that the solution to the current economic crisis is for Saudi Arabia and other prominent oil-producing nations to decrease production to drive up oil prices.

The positivist analytic group, like the positivist-formistic group, consider all risk to be 'real', 'tangible' and 'absolute'. However, they eschew 'gut intuition' as a decision making method and rely instead on 'due process', 'collecting all the facts' and 'reasonable analysis' to treat risk. The key themes emerging from this group include 'logical / uniform process throughout the organisation', 'a common approach', 'processes of checks and balances', 'audit', 'technical knowledge', and 'knowledge of procedures', to treat risks. Decision making is an intensively data-driven process that uses technical skill and analytic intelligence to arrive at decisions. According to this group, it is important 'to have all the information possible that is

required to make a decision'. Intuition is to be considered only on the basis of 'knowledge acquired across a lifetime of experience' to arrive at risk based decisions. Learning itself is a 'continuous process of 'upgrading and improving past experience'. This group has been termed positivist as its members consider risk to be real, tangible and absolute. The group's analytic label stems from their preference for deterministic, procedure-driven analytic methods, using absolute / clearly defined and understood criteria to arrive at decisions.

Both of the positivistic groups view risk as being quantifiable and identifiable. This method of decision making is rational and driven by data and analytic processes. Intuition and experience are also used as methods of decision making. However, this process is also deterministic as it is based on past historical outcomes that are used to de-risk the decision making process as much as possible, and to make it more streamlined and less time consuming. The positivistic groups do not consider different possibilities, contingencies or exceptions in the decision making process. The means to counter risk are the use of analytic technologies, analytic skills, stereotypes and categories. Here, data analytic systems are emphasised over the human decision maker. It should also be noted that both of the positivistic groups account for only 15% of all respondents.

Contextualist-pragmatists

Contextualist-pragmatists have been identified on the basis of several themes, coded as RDMQL2.2. The first theme is that of 'contingency planning'. That is, the approach to risk on the basis of a proactive 'what-if', 'cause-effect' and 'it depends' contingency planning rather than the reactive 'if then' approach favoured by the positivistic groups. This group ensures that it comprehensively identifies and assesses all possible known and knowable risks. This is achieved through extensive processes of 'scenario planning'. Contingency plans and mitigation strategies are accordingly installed to reduce the downside impact of a situation of risk, should it occur, and to restore control as quickly as possible.

Another recurring theme from the contextualist response is that of 'group based' decision-making systems. They point out that group involvement combined with a risk management framework simplifies and facilitates the understanding of even the most complex situations. They also add that they are 'realistic about the limitations of their skills', especially for complex decisions, hence to need to seek the help of 'others' to understand underlying issues, even if they ultimately make the decision. Their main goal is the 'achievability of outcomes of various decisions'. For this, they would not hesitate to consult or involve others and consider their views, which they consider to 'complement their own expertise'. This process also includes 'leveraging the other resources of the organisation such as legislation, policies,

processes, agreements, corporate governance, legal, finance, sourcing, asset planning, audit, etc.' The reasoning here is that each of these departments are staffed with individuals who know how to deal with specific risks, and that by consulting with these people, a more comprehensive perspective can be obtained about the risk situation and how to deal with it.

The third theme is the recognition of 'subjectivity' in risk decision-making processes. Respondents state that trying to eliminate subjectivity is asking for the impossible, and that the best way to deal with risk is to be 'pragmatic', as this will result in 'outcomes that are achievable'. Consequently, multiple perspectives and interpretations of risk can be achieved by integrating the risk situation with available resources or human consultation. Part of the pragmatic process is root cause analysis, whereby incidents of risk, treatments, and outcomes thereof are analysed to understand why and how the risks could not be predicted and how to suitably deal with them next time around.

The term constructivist has been applied to this group since they consider risk to be constructed through multiple perspective / interpretation processes that are context-dependent, with each context calling for a specific treatment with specific outcomes from each treatment identified. Each of these contexts is independent of the other. This group makes decisions based on the most practical course of action in each context that will help achieve the desired outcomes, hence the term constructivist-pragmatic.

Constructivist - Organicists

The constructivist-organic group has been classified according to the recurring theme of focus on 'performance outcomes' and other themes, classified as RDMQL2.3. Decision-making is not just about process but, rather, it is the performance outcomes that are the key to efficient decision making. Constructivist organists consider underachievement to be the biggest risk. Therefore, all decisions should and should lead to better outcomes and improved performance. A dominant theme within this group is the dialectical mode of thinking, whereby several counter views are examined and a syn dissertation of the various positions achieved. For example, whilst constructivist organists prefers not to over- or under-achieve at greater risk, it advocates adopting a dynamic approach to challenge a situation that is not changing. The members of the constructivist-organic group believe that both risks and decisions are constructed, multi-faceted and organic in that they are dynamic and constantly changing. Therefore, it is necessary to consider all aspects of this dynamic risk environment in order to deal with risk appropriately. Whilst they are democratic in that they seek diverse views in decision making, they are also unilateral in that they exercise their power to make a decision if they believe that this will help to achieve desired outcomes.

Contextualist-Integrativists

The contextualist-integrativists also emphasise improvement in performance. However, they have been classified according to their emphasis on 'strategic outcomes' and on the 'actionable results' of their decision-making processes, under code RDMQL2.4. They also emphasise group-based solutions and analyses in response to situations of risk. However, this group's approach to decision making is to 'ask the right questions'. This process involves asking the team to engage in 'specifying what they want to achieve', 'what their objectives are' and ascertaining the 'requirements and specifications required' to achieve the key objectives. Such questioning, they believe, will lead to the setting of targets, determine risk appetite / risk tolerance, and identify required skill sets, technical requirements, and so on - all of which will lead to an integrated, pragmatic and holistic understanding of risk.

Key differences between positivists and constructivists

An analysis of the responses from positivists and constructivists indicates that it is the latter style of risk decision-making that predominates in ABC Company. In comparison with the reactive and individualistic method of decision making followed by the positivists, the constructivists follow a proactive and collective approach to decision making. A key theme that emerges from all three constructivist views is that of 'diversity'. Resolution of risk is focused on accommodating diverse views to identify what the right course of action is. It is the task of the decision maker to facilitate the discussion in such a way that decisions made represent everyone's interests. The process is designed to allow everybody to talk through issues so as to reveal a common, accommodative theme. Another theme is that of 'experience'. In the case of absolutists, experience refers to intuition or past individual experience. In the case of constructivists, experience refers to outcomes of decisions and the analysis of these outcomes. Collective experience is used to solve risks of a similar nature whenever they occur. Constructivists also emphasise the importance of leveraging collective 'skill sets' to solve risks, and how inadequacies at the individual level can be rectified by pooling skillsets at the group level. Unlike positivists, who focus on process and inputs, constructivists focus on the 'outcomes' of decisions made. This group is achievement-oriented and focused on performance improvement. As opposed to the achievement of the self-defined goals of the positivists, constructivists are more concerned with achieving strategic and organisational goals. Positivists consider risks to be 'absolute' and 'knowable', whereas constructivists consider risks to be 'constructed', 'multi-dimensional' and 'dynamic and constantly changing'. Absolutists are more focussed on developing a risk profile based

on the outcomes of the risk decision-making process, whereas constructivists are more concerned about constantly improving the outcomes of decisions made. Contextualist respondents are more proactive compared to positivists, who are reactive. They adopt a group approach for the achievement of goals as opposed to the self-driven, individualistic decision-making modes of positivists. Contextualists do not make decisions in isolation and will communicate / consult with others and seek their support if this will facilitate the achievement of goals. This also implies that contextualists use contextual knowledge to arrive at decisions, and they make deliberate efforts to obtain such information as and when required.

These findings are in line with the literature on ERM implementation, where it was found that decision making in an ERM context is formal–empiricist in that it is staged, prescriptive and deterministic. Beach and Lipshitz (1993) criticized the formal-empiricist and rationalist frameworks for their failure to take the decision maker's psychological process into account. A quantitative approach to decision making is often the context wherein decision makers will chose the options with the highest utility. This decision is considered to be the most optimal one. This is in accordance with the principles of classical decision theory, which assumes that individuals are always well-informed, possess complete data, and act in a world of absolute certainty, therefore making rational and systematic decisions that secure their self-interest (March and Shapira, 1987). This is the way that the positivists within ABC organisation go about making decisions under the condition of risk. However, this group accounts for only 10% of all respondents, suggesting that the deterministic manner of decision making is not the norm followed by ABC organisation when making risk-based decisions.

The views of classical decision theory have been contested. Hammond *et al.* (2001) point out that decision making in real life is a dynamic process that cannot be accounted for by purely deterministic or rational methods. Moreover, these models do not inform us as to the mental processes that a person undergoes when faced with a risk situation. KPMG (2005) points out that the standards-based approach to ERM implementation has largely been ineffective, which may be attributed to faulty decision making processes. These contesting views are in accordance with the principles of bounded rationality, which states that individuals operate in an atmosphere of bounded or limited rationality and thus have to take into account the limitations of knowledge, issues related to cognition, and emotional factors (Herbert, 1978). It is apparent that constructivists follow a process of decision making that recognises the limitations of the individual and instead seeks the views, opinions, skills and knowledge of significant parties before arriving at a decision.

6.4.3 Factors impacting decision making

(Q3). Respondents were questioned as to what factors impacted their decision making processes under the condition of risk and uncertainty

According to the respondents, the factors that impact their decision making processes are those that they use to simplify and understand a situation of risk. No risk-based decisions are inherently simple. It is only when risks are interpreted as being known, routine and familiar that they are considered to be so. Respondents indicated they responded to such risks on the basis of past knowledge, experience, past trends and acquired competencies. Several methods were indicated for the treatment of problems that are more complex. These included attempts to categorise the risk, use of predefined processes, selection criteria, deliberate analysis, seeking further information, consultation with others, and the use of computational / analytic software. In all cases of risk, however, the underlying theme was to 'reduce complexity as much as possible' in order to better 'know and understand' the risk and then frame decisions.

6.4.3.1 Heuristic factors

The various factors illustrated in Figure 6-7, below, refer to those that respondents have either explicitly or implicitly indicated as being used to simplify and understand unfamiliar situations of risk, and are classified under code FDMQL1. These risk situations are characterised as being *latent* (unknown but knowable) and novel or *emerging* (completely unknown, unfamiliar and unpredictable).

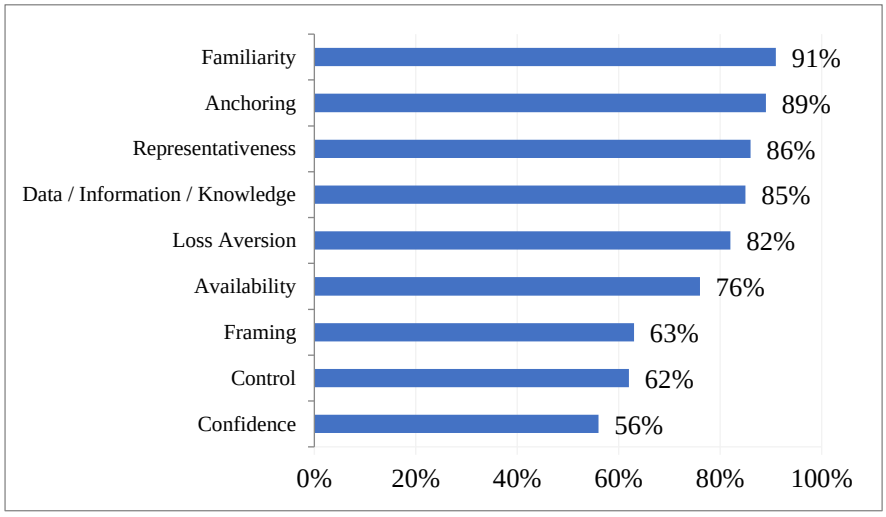

Figure 6-7 Factors impacting decision making

Based on the above chart, it is observed that 'availability' is the main factor considered to aid participants when making decisions under the condition of risk, cited by 76% of respondents. According to this factor, decisions are based on information or knowledge that is easily

‘available’. Themes such as ‘in recent memory’, ‘clearly remember’, ‘well-publicised’, ‘recent’, ‘readily available data’, ‘caused feeling’ were all categorised under the availability factor. According to this factor, the respondents use information, memories and experiences that are recent and readily available to make a decision. Confidence is the next most common factor, reported by 56% of respondents. The confidence factor has emerged from themes such as ‘belief in oneself’, ‘very experienced’, ‘full conviction’, ‘multi-skilled’ and ‘brave under the condition of risk’ reported by the respondents. Respondents reported confidence in making a decision as being especially important in situations where similar or fairly similar risks had occurred in the past. This they also termed ‘intuition’ based on learning from past experiences.

Loss aversion was noted as a major factor in decision making by 82% of respondents. This category consists of themes such as ‘more concerned with losses than gains’, ‘avoid loss’, ‘more pained by loss than being pleased with an equivalent amount of gain’. The implication here is that respondents will choose an option with the possibility of moderate gains and low loss rather than an option that offers them higher gains with a greater risk of loss. Another key factor illustrated in Figure 6-7 is that of ‘representation’. This refers to respondents’ tendency to form opinions and make decisions based on ‘resemblance of the risk event to other similar events’ that the respondents are ‘familiar with’. This is particularly so in the case of emerging risks that are unknown and unpredictable. The way to deal with such risk situations is to ‘apply generalizations based on like events’ when making decisions. To do this, all that is required are ‘similar attributes’ that lead to a representation of an event that helps in simplifying the decision-making process.

Framing was another key factor in decision making, as highlighted by 63% of respondents. Framing refers to the environmental context, situation or format in which the risk decision has to be made, and how choices are made on the basis of how ‘psychological soothing’ or ‘pleasing’ they are. For example, one of the respondents indicated that they chose to manufacture a lubricant for oil drilling purposes because their market research indicated a ‘great chance’ for success with this product, even though the Saudi market is overcrowded with several drilling lubricant brands. The respondent also rejected a proposal to manufacture another lubricant, which could ‘fail miserably’. Another decision-making factor, as stated by 89% of respondents, is anchoring. The most frequent responses falling under this category include ‘selection of an initial reference point on which to base decisions’, ‘past events or trends’, ‘first impressions’, ‘statistical numbers’ and ‘rough estimations’ that are all used as

anchor points on which to base decision making. As an example, several respondents indicated that they estimate manufacturing volumes for a current year based on the actual manufacturing output of the last three years. Another factor is that of 'familiarity', under which the most common themes include 'more tolerance and appetite for known risks' and 'more fear of unfamiliar risks'. The preference is to make decisions regarding risks that are more familiar to the respondents whilst avoiding decisions about risks that are unfamiliar. In this context, respondents stated that they have strategies to counter price fluctuations in oil, but no strategy to counter the projected threat of a decline in demand for oil or petroleum due to increasing reliance on non-fossil fuel sources. The factor of 'control' was cited by 62% of the respondents. This factor contained themes such as 'ability to foresee', 'have the skills and diligence to make decisions', 'can influence and control events', 'have expertise, skills and ability to prepare for risk'. Here the respondents all demonstrated the belief that risk is something under their control and that they can prepare for risks as and when they emerge. Thus, when it came to risk, the respondents demonstrated no attitude of helplessness. The factor of knowledge also impacted decision making, as indicated by 85% of the respondents. An inverse relationship between the level of knowledge and willingness to prepare for a situation of risk is evident. Here, respondents are less willing to prepare for risks, and are more fearful of risks, about which they have little knowledge. For example, the respondents indicated vague awareness of the lessening demand for fossil fuels and predicted that this would negatively impact the economy of Saudi Arabia in the future, but they were not sure how to adequately address this particular risk.

Analysis of Heuristic Factors

The factors indicated above may be regarded as aids that help respondents to reduce the complexity of the risk decision making process. This is in accordance with Slovic and Tversky (1982), who point out that individuals who have to make complex decisions use several simple and general rules (called heuristics) to reduce the difficulty of the decision making tasks. This is especially true for situations of uncertainty that call for risk taking behaviour. Myers (1989) points out that heuristics are strategies that include pieces of knowledge, past rules, learnings, experiences and hypotheses, or rules of thumb that are used in decision making situations. Ricciardi and Simon (2001) explain that heuristics are cognitive tools that significantly reduce the time taken to make decisions, especially when decisions have to be taken quickly. However, the desired outcomes will not necessarily always be achieved through the use of heuristics in decision making, as they can lead to

incorrect decisions that bring detrimental outcomes (Ricciardi and Simon, 2001). Plous (1993) points out that heuristics can lead to overestimation or underestimation of the severity of the risk. From these points, it may be inferred again that decision making under the condition of risk and uncertainty does not follow the classical theories of rational decision making. Indeed, the evidence indicates an overwhelming dependence on heuristic factors that lead to biased judgements. The inference here is that reliance on heuristics is undesirable, as they can result in erroneous decisions being made.

6.4.3.2 Emotion

Kahnemann (2003) points out that in order to make sense out of perceived situations that may be ambiguous, decision making is influenced by the unconscious mind, which in turn is influenced by emotions. Figure 6-8 indicates the various emotions indicated by the respondents. All of the themes under emotion have been coded FDMQL2. The reason for considering emotion an influential factor in decision-making is the recurring theme from the respondents, stating that they 'make decisions based on how they feel'. This means that the emotions triggered by risk situations or events are then used as a basis for decision-making. Based on responses obtained, the Researcher was able to classify the reported emotions as 'achievement', 'approach', and resignation 'and 'antagonistic'. Figure 6-8 illustrates the percentage of respondents who fall under each category:

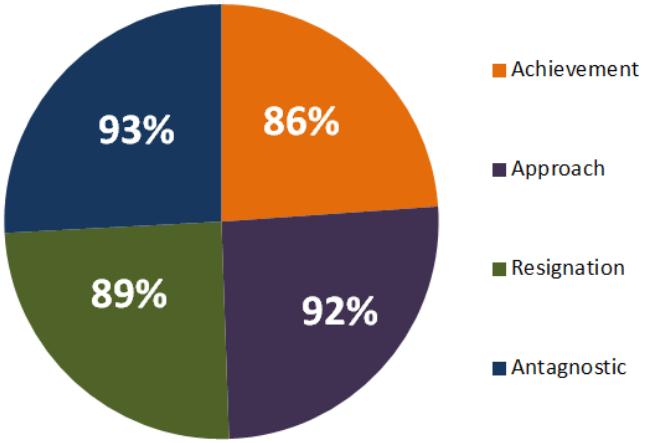

Figure 6-8 Emotion categories

Respondents stated that whenever a decision made in light of a situation of risk led to desired outcomes, this elicited feelings of pride, exuberance, satisfaction, joy, accomplishment and elation. These emotions have accordingly been classified as 'achievement'. When a similar situation of risk occurs, the same decisions are repeated as respondents *feel* that their chances of success outcome will be higher. Based on their earlier experience, respondents reported

feeling a sense of confidence, positivity and of being in control with regards to tackling familiar risk situations. Respondents noted these feelings when called upon to develop a lubricant product for a new platform drilling operation for a new oil well in northeast Saudi Arabia. It was found that the terrain was fairly similar to that of an earlier project, hence they were successfully able to develop a drilling lubricant for the new project.

Where respondents are not so familiar with the risks or when the risk-based situation involves some amount of uncertainty, the decision making process induces emotions such as *relief, hope, desire to explore, surprise and interest*. Here, a lack of control is noted by respondents. In less familiar risk situations, respondents noted that they experienced feelings of *interest* and the *desire to explore.* These emotions trigger engagement, curiosity, stimulation and alertness, mobilising the respondents to engage with the situation and make a decision. *Hope* refers to the feeling that the decisions taken under uncertain conditions will result in the desired outcomes. *Relief* and *surprise* refer to the feelings that occur when the desired outcomes arise.

Shame, guilt, helplessness, sadness, rejection and apprehension are the main emotions reported by respondents in response to unfamiliar events, situations where they feel a loss of control, or situations they feel they have no control over. These emotions are classified as '*resignation*'. These are negative emotions stemming primarily from the fact that the respondents feel that they do not know how to deal with the risk. This was specifically said with regard to the downside in the Saudi economy, which is also negatively impacting ABC organisation. Respondents feel that such risk can only be countered at the macro (global) level. Respondents do not feel in control of these events and their consequences, and thus they prefer to avoid making any decisions or they would rather just maintain the status quo.

Interestingly, feelings of *worry, fear, disgust, anger and contempt* are found to arise amongst respondents when unfamiliar risks appear but the respondents *do* feel some degree of control over the situation. These emotions are the outcome of the initial hostility to the situation being confronted and hence termed '*antagonistic'*. Respondents indicated that their method of treating this particular risk was to become ag*gressive, attack, mobilise resources, fight* or *retaliate;* all of which indicate a decision-making situation designed to bring the situation under control.

Analysis of Emotion – The above responses are in line with the findings of Finucane *et al.* (2003), who point out that emotions are conscious / unconscious states of feeling that occur in

response to specific stimuli and have either a positive or a negative quality. The stimulus, to the respondents, is the situation of risk. '*Achievement'* and '*approach'* are feelings associated with positive qualities whilst '*resignation'* and '*antagonistic'* are feelings associated with negative qualities. In general, it is observed that positive feelings result in a greater willingness amongst respondents to engage with the risk. Negative feelings, on the other hand, result in risk averse behaviour. These findings are in accordance with Shefrin's (2005) views that in situations of risk and uncertainty, individuals make judgements on what feels right to them. In this situation, it is not only data or knowledge that is used to make decisions but also emotions and gut feelings. This again contravenes cognitive decision-making theory, which perceives decision making to be a purely mental, rational activity. Loewenstein *et al.* (2001) points out that making decisions based on emotions can lead to sub–optimal outcomes. It appears possible for erroneous decisions to be made, based on the finding that ABC organisation's decision-makers make decisions that are influenced by emotions.

6.4.3.3. Gender

According to Charness and Gneezy (2011) there is strong evidence that suggest men and women make decisions differently under condition of risk and uncertainty. It was found that men are more willing to take financial risks, while women are more financially risk averse than men. Harris and Jenkins (2016) stated that in the real world, in general, men take more risks than do women. This is because men more optimistically judge probability of good outcomes of decisions taken during risk, while women are more likely to perceive negative outcomes of such decisions. Booth and Nolen (2015) acknowledged that there are differences in the ways males and females approach problems and proposed that gender differences in reactions to risk are more the outcome of social learning where girls are conditioned to be more risk averse than boys. It may be implied therefore that ways of thinking related to "Gender" is another psychological factor related to decision making under condition of risk and uncertainty.

All of the themes under gender have been coded FDMQL3. Of the 42 respondents, only 3 were women. This reflects the situation in Saudi Arabia today, where women are not encouraged to pursue careers outside the home. Nevertheless, the Researcher believes gender to be another important factor in the risk-based decision making process, even if this perception is strictly restricted to women in Saudi Arabia and highly subjective. When faced with the condition of risk and uncertainty, female participants were found to be far more likely than male participants to refrain from making decisions, as well as to avoid risky

situations altogether. The implication here is that under the condition of risk, women would prefer to maintain the status quo or not make any decision at all. The more the uncertainty, constraints of time or money, the greater the potential for a negative outcome, the higher the task factor or emotional strain or the higher the social pressure surrounding a particular situation of risk, the less likely it was that the women were prepared to engaged with it.

All three women stated that they would never engage with a situation that threatened potential financial loss. This implies that women are more financially risk averse than men. The feeling of *less control* they experienced in response to a particular situation or its outcomes, the less likely they were to make decisions on the risk. Female respondents were found to favour lower risk, lower profit risk situations over higher risk, higher profit situations. In particular, it was found that the manner in which the risk situation was presented also impacted decision making behaviour amongst males and females in different ways. The female respondents indicated that they were less likely to engage in situations with greater *uncertainty* or *unfavourable outcomes.* Women are more influenced by uncertainties, ambiguities and the dynamics involved in risk based decision making. They amount of time and money involved in making a decision is important to them as are any other constraints such as work and/or social pressures. The female respondents are they are more concerned with possible negative outcomes of decisions taken. The female respondents place greater importance to emotions than men do, in the decision making process. However, women place equal importance on the data-based analytic processes required to make decision and to define the goals of the decision making process. This is in accordance with the findings of Booth and Nolen (2015) who pointed out that women can be as motivated as men in taking risks where the outcomes are predicted to be favourable.

It was observed that with regards to the processes of decision making, female respondents are as likely as men to rely on data/information, to process information, to use prior knowledge, experience and past decisions, to engage in the categorisation of data / situations (particularly if they are very diverse), to examine various logical options, make predictions, evaluate consequences, engage in situation specific problem solving and monitoring of decisions. All the female respondents indicated that they '*knew about data warehousing and used computer systems to help in the making of decision making processes'*. Thus, it can be inferred that men and women share equal intellectual capacities and cognitive reasoning processes. The differences in decision-making processes would be more attributable to behavioural styles or to the different social roles men and women play in Saudi society. However, since there is

such a considerable difference in attitude to risk and decision making behaviour, the Researcher believes that gender plays a decisive role in the ERM context in Saudi Arabian organisations. A female leader would be considerably more risk averse than a male leader in this environment.

6.4.3.4. Culture

All of the themes under culture have been coded FDMQL4. The Researcher also ascertained the impact of culture on decision making under the condition of risk. It was found that all respondents preferred an '*ordered structure'* in their organisations, and placed priority on '*good interpersonal relationships'* and '*known / anticipated'* events. They '*look up to authority',* especially when such authority is exercised by people they '*esteem highly'*. They prefer '*hierarchical organisational structures'* rather than '*flat, matrix structures'* whilst at the same time, they value '*democracy'* and the freedom to '*air their views',* or at least are '*made to feel that their opinions matter'*. None of them are individualistic, and they prefer *conformity of views rather than opposing* views. The delineation of gender rules in Saudi society is also highlighted by respondents. Men are encouraged to be b*read winners and have careers*, whilst women are taught to be *modest*, *homely* and more concerned with *family life*. All of this indicates that the respondents come from a culture that has low tolerance for uncertainty and ambiguity, high tolerance for hierarchy, values the community over the individual, and is more masculine than feminine in its worldviews. According to Mihet (2012), all of these characteristics point to a low risk taking or even a risk averse culture. This view is corroborated by the findings from the respondents, who all state their preference for a more guarded approach to risky situations.

6.4.3.5. Personality

All of the themes under emotion have been coded FDMQL5. The Researcher used the Five Factor Model (FFM) of McCrae and John (1992) to categorise the respondents into personality types. This is because this model summarises the majority of personality types amongst all human beings (Becker, 2005). According to FFM, all human beings exhibit one of five dominant personality types: openness, extraversion, neuroticism, agreeableness and conscientiousness. Traits were identified and respondents categorised across the five aforementioned personality types through the Researcher application and knowledge of FFM. Respondents who fell under the openness category were found to be willing to try new activities, intellectually curious, were in touch with their inner feelings, had a preference for variety and were highly imaginative. Respondents who fell under the extraversion category

were sociable, gregarious, sought stimulation and excitement, were warm and assertive and took action proactively. Those under the neuroticism category were invariably apprehensive, fearful, worrying, impulsive, self-conscious, more likely to be short tempered, hostile, depressed, impulsive and vulnerable. Those who demonstrated the traits of being straightforward, compliant, cooperative and trusting were those respondents who came under the agreeableness category. The conscientiousness respondents were dutiful, achievement oriented, self-disciplined, deliberate, punctual and reliable. The distribution of the five personality types in ABC organisation is illustrated in Figure 6-9:

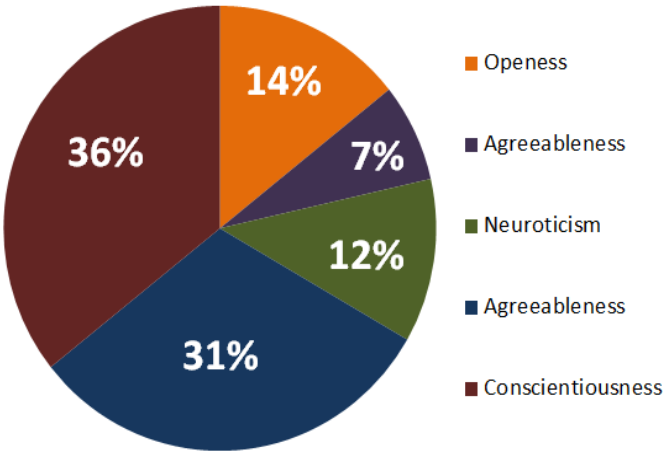

Figure 6-9 Personality types at ABC organisation

Respondents who fell under the openness category exhibited more willingness to '*participate in risk taking activities*' due to the preference for novelty and for undertaking new activities. Because of the sensitivity to their emotions, they sought the '*thrill'* of devising strategies to counter risk. Similarly the extraverted respondents were motivated to undertake risky decision making activities irrespective of the possible outcomes due to the excitement of '*sensation seeking'*. Strong risk aversion and anxiety over possible *negative outcomes* was shown by the neurotic group. The agreeable participants were more concerned about protection against the worry that comes from *possible negative outcomes of risk based decisions* and were also very risk averse. Conscientiousness respondents were highly organised, and exhibited the *tendency to plan* and think *carefully* about the situation of risk. They were not as highly concerned about the outcomes as on the *process* by which risk should be approached. They can be considered to be moderately risk averse.

The implication from the respondents' views is that leaders with open and extraverted personality types would be more likely to take on the responsibility of risk-based decision making. On the other hand, neurotic, agreeable and conscientious types would either

completely avoid risky situations or opt not to make a decision that could lead to a negative outcome. From Figure 6-9, it is observed that the majority of respondents fell under the risk averse category.

6.5. Leadership

Q4. The respondents were queried as to their views on leadership style in ABC organisation and whether this style hindered the implementation of ERM in the organisation. The importance of leadership theme is termed LIQL1.

Importance of leadership

The reasons behind the importance of leadership in ERM implementation are summarised in Figure 6-10:

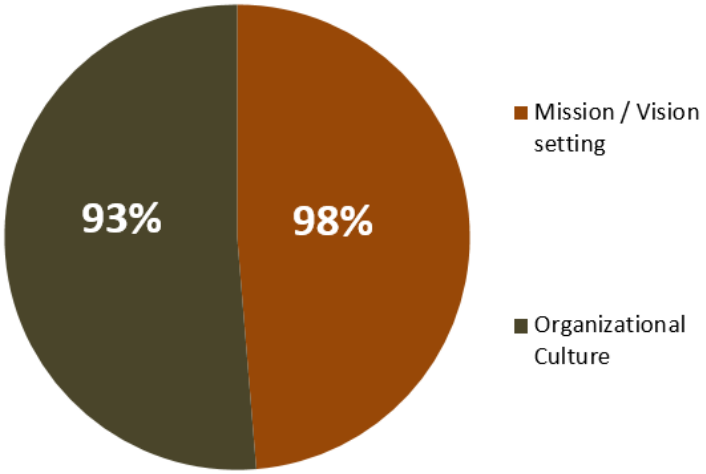

Figure 6-10 Importance of leadership

It is observed from Figure 6-10, that respondents feel that leadership is important for the implementation of ERM as it incorporates the *concept of risk into the vision / mission* of ABC organisation as well as into the *organisational culture*. These findings are in accordance with the views of Grunig *et al.* (1992), who point out that leaders, more than anybody else, shape organisational environment and culture. The decisions they make influence the productivity and success of the organisation. The role of the board of directors in owning responsibility for ERM implementation is well noted in the literature, and supported by these views. Respondents point out that for the effective implementation of ERM, leadership should create a culture that encourages *participation, dynamic change and innovation*. A key point to be noted here is the view that leaders should always *inspire* and *never dictate*. This is in line with the views of Nichol (2000), who points out that effective leadership in an atmosphere of risk establishes clear channels of communication, ensures productivity, quality control,

efficiency of employees, punctuality, boosts employee morale, focuses on social responsibility and on a work environment that is collaborative. Holtzhausen (2002) points out that when leaders are able to build strong terms, establish systems and processes that lead to enhanced productivity, focus on team building and employee empowerment, they establish a culture that motivates employees to make the organisation successful. The implication is that ERM implementation will not be successful if leaders merely dictate to their subordinates what needs to be done. Rather, it is the articulation of 'risk' into the mission / vision of the organisation, and the creation of a suitable organisational climate that will lead to the successful implementation of ERM.

Moreover, the employees' ability to deal with risk are influenced and impacted by employees' perceptions of leadership. Respondents in the audit department indicated that their *superiors are passive, reluctant to train or influence their team, and do not give support on change management*. This kind of leadership has been termed by the Researcher as 'laissez-faire' due to the casual approach adopted by the leaders. Respondents in the operations section reported that their *superiors were mainly concerned with how efficiently they performed their jobs. They did not feel cared for, nor motivated.* This kind of leadership may be termed 'transactional', as the focus is on efficiency of performance only. The other respondents reported *their superiors as being extremely charismatic people whom they looked up* to. This kind of leadership is termed as 'transformational' by the Researcher. A summary of the three proposed types of leadership is presented in Figure 6-11, below:

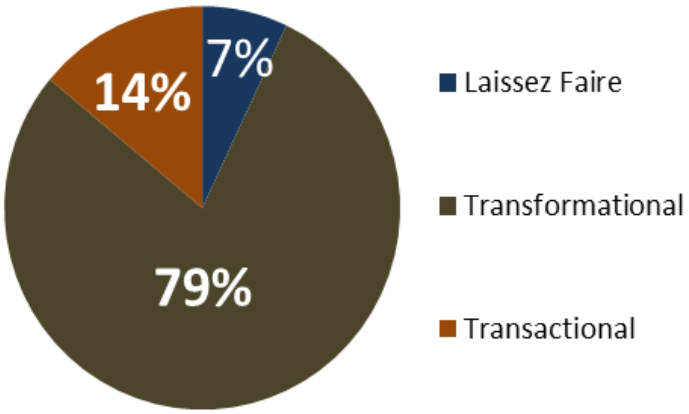

Figure 6-11 Leadership styles

From Figure 6-11 it is observed that the transformational style of leadership that predominates in ABC organisation. Transformational leaders *challenge* their team to *achieve specific goals*, according to the respondents with this type of leader. They make them feel *invested with the mission of the organisation, establish rapport and share decision making*

responsibilities with them. Because of this, they felt *more engaged with the organisation and to its goals and objectives*. The implication here is that these respondents would also be interested in de-risking the organisation from all possible threats as much as possible. These findings are in accordance with the study of Purvanova *et al.* (2006), who found that employees who worked under transformational leaders considered their jobs to be more *challenging, personally meaningful* and *significant*. This was largely because their jobs were *linked* to the *purpose, vision / mission* of the organisation. From the point of view of risk management, these employees were more liable to work to *promote the overall good of the organisation, promote the organisation,* and *help maintain a positive work environment* within the organisation.

It may be inferred from these views that leadership is important because it facilities effective implementation of ERM. If the Organisation is to prepare effectively for risk, they should devise leadership strategies that are transformational, inspiring and developmental.

6.6 Risk culture

(Q5). The respondents were asked for their views on how organisational culture of risk may be created and sustained.

Responsibility for creating organisational risk culture

The responses indicate what the respondents perceive organisational culture to be and who is responsible for creating an organisational risk culture. These themes have been developed under the factor code RCQL1. According to one respondent, *"risk culture is creating a certain perception of risk that is more objective than subjective*". The respondent clarified by stating that "*different people will have different attitudes to risk and establishing a risk culture will create a more uniform, organisational attitude to risk*". This is to avoid the same situation of risk from being perceived differently by different people. Thus, the development of an organisational culture of risk requires the creation of the appropriate risk perception. Another respondent distinguished between *risk appetite* and *risk tolerance* by stating that the former indicates *the maximum risk* that may be accepted by an organisation, whilst the latter refers to *the minimum risk* acceptable by an organisation. Here again, it is the *organisational culture* that determines these upper and lower limits of risk acceptance. Risk culture, stated one respondent, is all *about taking risk*, how *risk averse people are in the organisation or how brave* they are. It refers to the *decisions that they are willing* to make. Risk culture is about developing *more appetite and tolerance of risk*. Another respondent quoted that risk

culture is *all about how employees are made aware about risk.* The primary agents of risk culture creation according to the respondents are illustrated in Figure 6-12, below:

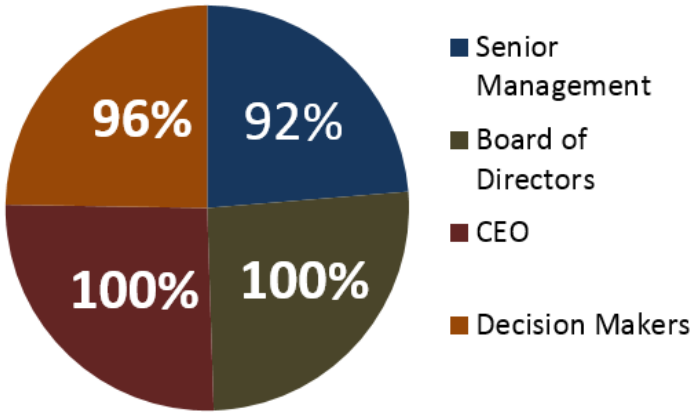

Figure 6-12 Agents of organisational risk culture

Senior managers are perceived as being the most risk aware and therefore responsible for creating risk culture, as illustrated above. Other respondents are more specific and identify *CEOs* and the *board of directors* as the primary agents of risk culture. One respondent pointed out that the CEO is also *the chief risk manager / owner of the organisation*. Another respondent felt that whoever is called upon to *make decisions at times of risk* are also agents of risk culture creation. At ABC Company, the task of decision making is mainly the responsibility of the senior managers, the CEO, risk / audit committee and the board of directors. The development of risk management culture within teams and the role as a *champion or agent of change* was highlighted by one respondent as being the primary role that risk management should play. This is done by *developing a pattern of thinking across the organisation about risk in such a way that everybody thinks about risk in the same way*. One respondent pointed out that it is not the task of risk or audit committees to manage risk. This is an opinion contrary to the normal understanding of the role played by risk and audit committees in organisations. According to this respondent, the role of the risk committee is *to encourage risk ownership* across the organisation, where they take on the task of *facilitators, trainers, suppliers of systems and support that drive risk decision making.* This view is extended by that of another respondent, who pointed out that risk culture is about having *the right information, the right resources and the right processes to make decisions at all levels* across the organisation.

These views are in accordance with those of Kaval and Voyten (2006), who point out that the way employees perceive the organisation, influences their morale, loyalty, productivity,

satisfaction levels and commitment to achieve organisational goals. Essentially, therefore, organisational effectiveness is influenced by employees' perception of the organisation. Mathisen and Einarsen (2004) indicate that the leaders of an organisation should evaluate the most efficient way to ensure that its employees perceive the organisation in a positive manner. By extending these views to ERM, it may be inferred that organisational culture impacts the manner in which risk is perceived by the employees and that the leaders of the organisation play an important role in determining organisational culture. Figure 6-13 indicates what the respondents indicate as the main factors that determine organisational culture and how leaders can leverage the different attributes of the organisation's internal stakeholders to accept and implement decisions related to risk.

Communication – Weick and Sutcliffe (2001) point out that decision making under the condition of risk is a process of negotiation that involves intra/interpersonal interactions, dialogue, communication and feedback. This 'group' approach to sensemaking is corroborated by Nutt (2003), who points out that sensemaking and consequent decision making processes have to be facilitated through participative and discursive communications. Fard and Rostamy (2009) also add that risk managers utilise data gathered through face-to-face interaction in order to avoid confusion. Discussion about, and the participative interpretation of, this data leads to the identification of critical cues, and the process of participative meaning-making is important in addressing the complexities of risk. These views are consistent with the new psychology of leadership's emphasis on group participation. This means that deriving meaning out of risky situations cannot and should not take place at only the individual level but also in communication with 'others' in the organisation. Figure 6-13 demonstrates that leaders' communication is cited as one of the ways to improve organisational risk appetite / risk tolerance by 97% of respondents. The various communication-related themes are classified under factor code RCQL6. Respondents 3 and 25 stated the importance of symmetrical, frequent, open, transparent communication that is perceived to be truthful. These respondents also pointed out that open communication creates the perception of a decentralised work environment that encouraged their participation in the decision-making process. This is in line with the views

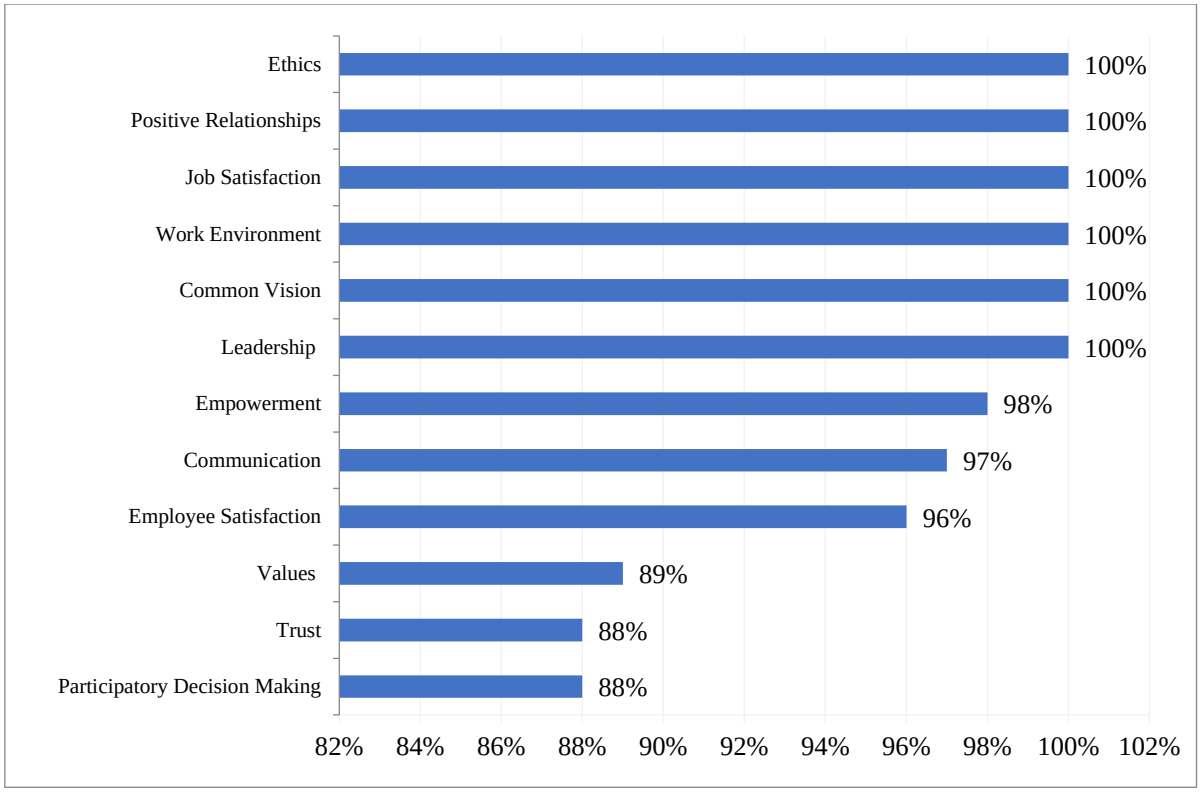

Figure 6-13 Factors impacting organisational risk culture

Of Holtzhausen (2002), who states that a democratic style of leadership leads to a democratic workplace and this, in turn, facilitates effective communication. A democratic workplace is decentralised, which facilitates symmetrical communication and employee participation in decision-making processes. Respondents stated that communication resulted in higher organisational trust, facilitated face-to-face communication, reduction in employees' fear of communicating with managers and smooth information flow. Positive employee-manager relationships were highlighted by respondents as being the result of open communication systems. It is on account of these reasons that they have positive relationships with their subordinates, who are motivated to listen to them and follow their instructions.

Shared / Common Vision – The various vision-related themes are classified under factor code RCQL9. From Figure 6-13, it is observed that all respondents shared or felt they had a stake in the vision / mission of the organisation, which was to provide '*state of the art technological solutions for the petroleum industry in Saudi Arabia always*' . This is the organizational vision of ABC Company. The respondents pointed out that they / their managers had put in place effective communication processes that lead to the development and implementation of a shared vision. Furthermore, they noted that it was this organisation-wide shared vision, which is effectively communicated across the business, is the reason they

are able to manage the current turbulence in the Saudi economy. These views match those of Farmer *et al.* (1998) who indicated that leaders who created decentralised organisational structures and used open two-way communication processes to disseminate the organisation vision to their subordinates would be more effective in achieving a shared vision in the organisation. Respondents indicated that they / their subordinates shared with the vision of the organisation as they frequently received information from their managers regarding the vision, its current status, challenges, and so on, through memos, emails, the intranet, newsletters and even in meetings. Respondents indicated that if their subordinates chose to, they could communicate directly with the board and with the CEO of the organisation without their managers acting as intermediaries. The commitment of the ABC organisation in communicating a shared vision was made out when some respondents indicated that the board hired the services of a PR organisation to specially craft messages on shared visions and organisation / industry events and so on that would then be disseminated from the organisation email. The implication here is that the concept of risk enunciated in the vision of the organisation in the words 'at all times'.

Positive Work Environment – The various positive work environments related themes are classified under factor code RCQL10. From Figure 6-13 it is observed that all respondents stress the need for a positive work environment in developing an organisational culture. They pointed out ABC organisation permitted ambitious goal setting, participation, certain amount of freedom and autonomy in implementing the goals and in decision making, encouraged innovative ideation and idea creation and a robust feedback, concern for excellence, rewards and recognition system. It is because of these mechanisms that the respondents perceive their environment as being good and positive and this in turn motivates them to work towards goal achievement, greater self-efficacy and better job performance. They pointed out the importance of open communication, shared vision, challenging task assignments, supportive management and fair reward and recognition practices in creating this perception. These views are in accordance with those of Potosky and Ramakrishna (2002) who suggest that in the current business environment, which is characterised by risk in technological advancements, economic, political and social changes and increased competition, organisations should improve and promote creativity and innovation across every level of the organisation. Mathisen and Einarsen (2004) indicated the importance of supportive management and appropriate compensation mechanisms that would result in high quality performance, enhanced productivity, more innovation, job satisfaction, organisational wellbeing and profit - all of which has been highlighted by the respondents. In the specific

case of ABC organisation, the implication is that their perception of a good and positive work environment has made them more willing to commit to organisational goals and wellbeing even under the condition of risk.

Participatory Decision Making – The various participatory decision making related themes are classified under factor code RCQL2. From Figure 6-13 it is observed that 88% of the respondents highlight the importance of decision making processes that are participatory rather that dictated or authoritarian. They said that they conducted regular assessments, through which they would assess organisational strengths and weaknesses and then customise organisational goals, communications and strategies to their subordinates. This is in line with the views of Hatch (1997), who points out that organisations are better able to make rational decisions when they include and collaborate with their employees in the decision making process, rather than just making independent decisions and then expecting their employees to obey. Respondents indicated that they felt that as leaders, they are responsible for creating a decision making process that is perceived to be participatory, and this is important as it facilitates the goal implementation and effectiveness of employees. They explained this by stating that it is leaders who determine the organisational levels at which decisions are made, the level of power and participation to be allocated to their employees in the decision making process, and the best and most effective decision making approach. Respondents had experienced situations in which they had to make quick decisions under time pressure or without access to all the information they needed, in order to avoid negative impacts on the organisation. They reported that they gathered data from multiple levels of their organisation in the time permitted to them, keeping in mind that their sources of information may not necessarily be trustworthy or accurate and that wrong decisions would have negative consequences on the organisation. They stated that the most important part of the entire decision making process was their willingness to take responsibility for the outcomes of decisions. When the outcomes were different to what was estimated, they did not blame their subordinates as they realise that this would result in erosion of both trust and respect.

Respondents indicated that managerial decisions can make or break organisational strategy as the process by which resources are allocated by them has more impact on strategy impact than any plans devised at the board level. They indicated a specific instance in a shift towards participatory decision-making process after they found that some managers lower down the hierarchy were implementing strategies without being granted official approval from them. Thus, at a time when they were beginning to roll out various initiatives, they found that some managers were independently making decisions that either undercut or enhanced these

initiatives. Consequently, they decided to involve employees more highly in decision making, feedback, information sharing and discussions about organisational directions and goals. This allows for correct and effective decisions to be made when the risk appears due to the role of participation in the decision making process.

It is asserted in the literature that since leaders are able to evaluate both the culture and structure of the organisation, they are able to exert enormous impact in the realm of participatory decision making systems and incentives (Kaval and Voyten, 2006). This is very much in line with the above comments from respondents. Managers who are involved in the decision making process should take into account how decisions impact subordinates, empower subordinates to implement decisions, use effective process of communication to keep their staff informed at all times, determine obstacles that pre-empt effective decision making processes, and encourage a pro-active atmosphere to facilitate appropriate decision making processes rather than last-minute or hurried decision making.

Job Satisfaction – The various job satisfactions related themes are classified under factor code RCQL11. From Figure 6-13, it is indicated that high levels of job satisfaction are extremely important in developing organisational risk culture. This is because employees who are satisfied are also more productive, efficient and work together to achieve organisational goals. Employees' positive perspectives of communication processes, the implementation of participative decision making processes, the presence of systems and processes that enabled employees to share feedback regularly, and being given greater ownership in decision making all represent some of the various reasons that the respondents in this study attributed to the creation of high levels of job satisfaction amongst employees.

Because of this, respondents feel that they achieve a higher quality of accurate information with which to make decisions, allowing the organisation to better adapt to changes in the internal and external business environment and to appropriately adapt to frequent changes in the market.

These views are in accordance with those of Holtzhausen (2002) who points out that employee involvement with organisational goals does not occur until they perceive that their involvement is valued. Therefore, employees' perception of the organisation is important, as a positive perception results in higher levels of motivation, productivity, transparent communication, information flow and job satisfaction. It is evident based on the respondents' answers that commitment to the achievement of organisational goals stems from the job satisfaction enjoyed by employees as a result of ABC organisation's flat organisational structure, transformative leadership style, and participatory decision making processes.

Positive Relationships – The various positive relationships related themes are classified under factor code RCQL12. From Figure 6-13, it is observed that respondents feel that they are responsible for creating a work environment characterised by positive interpersonal relationships. Greater organisational success and effectiveness along with higher goal satisfaction and execution is seen to stem from positive interpersonal relationships in the workplace. They cite following a programme of 'relationship management' with their employees, whereby they build and sustain positive public relationships. This has been achieved through effective communication, focused on the needs and requirements of their employees as well as on the economic and social goals of their organisation. They believe that fostering positive relationship results in a continuous exchange of wants, need and requirements, shaping the perceptions and behaviour of their employees and nurturing relationships that promote interpersonal understanding and benefit.

Huang (2001) points out that positive work environments lead to reduced conflict and secure employee cooperation. In order to create a positive work environment, it is important to have symmetrical communication and facilitate good interpersonal relationships. This in turn ensures that employees do not turn their backs on the organisation when conflicts / situations of risks occur.

Empowerment – The various empowerments related themes are classified under factor code RCQL7. A feeling of empowerment that encourages employees to meet risk-based and other organisational goals is reported by respondents as a positive outcome of strong interpersonal relationships within the organisation. This is in line with the findings of King and Ernhard (1997), who point out that an attractive organisational culture facilitates the perception of employee empowerment, which in turn enhances both productivity and loyalty. Respondents indicated that the challenge is always to create an affective or emotional bond between the employees and ABC organisation, its vision and goals. This was achieved by first developing employee loyalty and achieving congruence of values. Affective commitment was then demonstrated towards the organisation by its employees. It was found that those employees who feel a personal bond with the organisation are willing to go beyond the expectations of the organisation and work for the good of the organisation.

This is in line with the findings of Purvanova *et al.* (2006), who discovered that transformational leaders create engaged and loyal employees who go beyond their call of duty to secure the good of their organisations. Transformational leaders are perceived to be more inspirational and providing support to employees to achieve even higher goals. Employees in turn find their work to be more challenging, exciting and important. Due to

this, employees are willing to go the extra mile to help others, work towards promoting the organisation and create a positive work environment. Brody (2002) points out that employee satisfaction resulted in commitment to vision / mission and the long term success of the organisation. Here, again, two-way communication becomes a tool whereby positive relationships can be established so as to empower employees towards success. Respondents indicated that they are constantly challenged to exceed employee expectations by ABC organisation, as this translates to employee satisfaction, good interpersonal relationships and, consequently, a greater commitment to the mission of the organisation.

Employee Satisfaction – The various employee satisfactions related themes are classified under factor code RCQL5. Employee satisfaction is highlighted as another way to improve risk appetite within organisations. This was achieved at ABC through contribution to employees' personal growth, the facilitation of collaborative culture throughout the organisation, effective communication between managers and employees, and an inspirational and exciting manner of leadership. Employee satisfaction has also been found to be positively related to overall morale within the organisation (Johnsurd and Rosser, 1999). Good morale is established through processes of communication, as well as rewards and recognition. Ensuring employee satisfaction leads to the inspiration to perform well and a greater commitment and stake in the success of the organisation. It may be inferred that the corollary to this is also true. That is, if the organisation does not create positive employee relationships, this will result in dissatisfied employees who will prevent the organisation from achieving its vision and performing its mission.

In this context, Pincus *et al.* (1990) point out that the communication processes of an organisation are positively and significantly related to employee satisfaction with their jobs. More specifically, the ability of employees to communicate directly with their immediate reporting managers and their willingness and ability to participate in decision-making processes positively impacted their job satisfaction levels. Higher employee satisfaction levels are particularly related to employees' ability to freely communicate with top management without fear. This again points to the importance of participatory decision-making. These findings are consistent with those of Mathisen and Einarsen (2004), who found that employee satisfaction, is the outcome of a work environment where there is trust, confidence, support for ideation, transparent relationships, supportive of challenges, higher motivation, greater commitment to organisational goals, information seeking and exchange of ideas and opinions. Maitland (2004) also found that employee satisfaction increase organisational revenues. The implication here is that employee satisfaction builds

organisational resilience to risk and leaders have to work towards enhancing employee satisfaction levels.

Trust – This is another key factor in creating an organisational culture of risk tolerance, and the respondents believe that it is the primary task of leaders to build trust in the organisation. The various trust related themes are classified under factor code RCQL3. Organisational performance and the erosion of managerial credibility is noted by respondents to be two of the outcomes of a lack of trust within an organisation. They believe that their less hierarchically structured and more flat organisation facilitates a perception of employee empowerment and teamwork that leads to greater trust. Trust helps build relationships and it communicates organisational recognition of the integrity and expertise of the employee. Trust was built through forums that helped in the sharing of workplace experiences and through demonstration of knowledge and competency. High levels of trust were found to be useful in conflict resolution. More positive outcomes can be achieved when trust is strong because people who trust will be more likely to want to cooperate with others. The benefit of trust is that it creates a perception of high power and equality.

In this context, Joni (2004) points out that relationship of high trust lead to less avoidance and less domination in risk-based negotiations, especially in equal power distribution systems. Harshman (1999) points out that leaders are the most influential actors in the workplace due to their high power; hence they are uniquely situated to create situations of trust, prevent conflict and strengthen morale. Harshman (1999) also points out that building trust requires constant reassessment of relationships with employees, since trust changes with time. Gomez and Rosen (2001) indicate that feelings of trust also led to a sense of empowerment. The implication here is that leaders are primarily responsible for building trust, which in turn leads to higher resilience of the form to risk.

Values – The various communications related themes are classified under factor code RCQL4. All the respondents indicated organisational values as being important to create an organisational culture with high-risk tolerance / appetite. This is because it is the values of the organisation that impact performance of the organisation. All the respondents find that because their organisational values resonate with employee values, they have been able to secure employee satisfaction and their commitment to the organisation and its performance. This point is akin to the assertion that organisational performance, employee satisfaction and commitment are all significantly and positively impacted by the alignment between the values of the organisation and the personal values of the employees (Fitzgerald and Desjardin, 2004). Organisations that are able to together implement and communicate

common values will be better able to get employees involved in decision making process that are participatory and committed to achieving organisational goals. Respondent indicated that in order to create a culture that promotes common values, they have integrated these values at all levels and processes of the organisation. These include hiring processes, performance management processes, rewards, recognitions and promotion processes. By creating a culture that is driven by organisational values, positive interactions between employees and their managers are thereby facilitated. In this connection, Prilleltensky (2000) stated that leaders should bring about a balance between organisational values and interests and the values and interests of employees. Organisations are better equipped to create value-based systems and processes whilst also facilitating a positive employee-organisation relationship when they are able to strike a good balance between the values of the organisation and the personal values of those within it.

Ethics – The various ethics related themes are classified under factor code RCQL13. From Figure 6-13 it is observed that respondents consider ethical practice to be very important in developing the risk culture of the organisation. Contrary to normal practice, development of an ethical culture is not regarded as a luxury or something that is outside business practice in ABC organisation. Respondents indicated that there is a genuine commitment to developing proper ethical practices within ABC as they have believe that this is one of the ways to de-risk the organisation from such risks as fraudulent practices, threat to the reputation of the organisation, malpractices, government legislation, technological collapses, court penalties and even negative commercial outcomes. By implementing an internal infrastructure that secures strict compliance with ethical norms and values, they were able to build a truly ethical organisation.

6.7. Conclusion

The qualitative analysis summarises the views of the respondents on risk leadership and is supported by quotations from the literature that extend these views. The demographic analysis indicated the suitability of the respondents for this particular research, as all of them are well-experienced leaders with many years of experience at senior levels at ABC organisation. The section on risk decision-making indicated the multifarious nature of risks that a modern organisation operating in the oil and gas sector in Saudi Arabia has to face and the consequent need for enterprise risk management. Based on the responses, four dominant psychological decision making styles were discerned. Additionally, it was determined that ABC organisation primarily embodies the contextualist style of decision making, and that

positivist, deterministic types of decision makers were in the minority. In the section on factors that influence decision-making, the broad finding was that, contrary to the classical rational theories of decision making, risk based decision making is impacted by heuristics, emotion, gender, culture and personality of the respondents. This means that decision-making under the condition of risk and uncertainty is a more subjective process. The section on leadership summarised why the respondents believe leaders to be important to develop risk culture and that it is the transformational style of leadership that leads to effective risk decision making and risk based organisational culture. The section on risk culture determined that leaders have the power to psychologically influence the development of a risk based organisational culture based on the establishment of participatory decision making, trust, values, employee satisfaction, open and transparent communication styles, empowerment of employees, sharing a common vision, developing a positive work environment, creating job satisfaction, positive relationships with employees, and creating an ethical culture. These findings from the qualitative analysis will be combined with those from the quantitative analysis in Chapter 7 and summarised in the analysis and discussion in Chapter 8.

Chapter 7 – Quantitative Analysis

7.1. Introduction

This chapter indicates the results of the research survey conducted by the Researcher on 100 industry professionals from different organizations all operating in the oil and gas sector of Saudi Arabia. The primary data collection instrument was a questionnaire divided into five sections, as follows: (Demographics), Familiarity with ERM, Decision Making, Leadership, Organisational Culture and Status of ERM Implementation. The questionnaire consisted of questions that could be answered using a yes / no format or through a four-point Likert scale of importance from “Strongly Agree”, “Agree”, “Disagree” to “Strongly Disagree”. The overall objective was to understand how psychology of decision making and organisational culture impacted the implementation of ERM through the use of a statistical tool. The survey was designed with the goal of providing a macro perspective on the style and success of current ERM implementation in Saudi Arabia. Rice (1995) and Robson (2002) state that researchers often use the methods they are most familiar with, relying on their own experience and expertise in working with the chosen method. This is because the range of different analytical methods available can cloud the simplicity of quantitative data analysis. Therefore, the Researcher experience and knowledge with Microsoft Excel and its data analysis functionality encouraged the Researcher to select this software over more sophisticated but complex software (Trochim, 2000). The various codes assigned to the different themes considered in the section are illustrated in Table 7-0.

Table 7-0 Themes used in Quantitative Analysis

Section / Question No.	Interview Questions	Factor Code
Section 1 : Demographic Profile		
1	Age Distribution	DPQN1
2	Tenure	DPQN2
3	Grade	DPQN3
5	Function	DPQN4
6	Industry Sector	DPQN5
7	Number of Employees	DPQN6
Section 2 : ERM		
1	No of Years involved in risk	ERM1
2	Familiarity with ERM	ERM2
3	Nature of ERM implemented	ERM3
4	Stage of involvement	ERM4

4	Nature of Risks	ERM5
Section 3 : Decision Making		
1	Perception of Risk	DM1
2	Decision Making Style	DM2
3	Risk Control Strategy 1	DM3
4	Risk Attitude	DM4
Section 4 : Leadership		
1	Factors impacting Risk	LRD1
2	Behaviour with Employees	LRD2
3	Leadership Style	LRD3
4	Employee Behaviour	LRD4
Section 5 : Organisational Culture		
1	Decision Making Style	OC1
2	Stakeholders	OC2
3	Risk Philosophy	OC3
4	Risk Management Culture	OC4
5	Risk Assessment Culture	OC5
6	Risk Control Activities	OC6
7	Communication Process	OC7
Section 6 : Success of ERM Implementation		
1	Stage of Capability	SERM1
2	Benefits	SERM2
3	Success / Failure	SERM3

As is observed from Table 7-0, a total of 29 variables have been considered in the quantitative analysis.

7.2. Demographic analysis

According to Creswell (2003) the purpose of a demographic analysis is to indicate the suitability of the respondents to be part of the research. Figure 7-1 indicates the age distribution of the respondents:

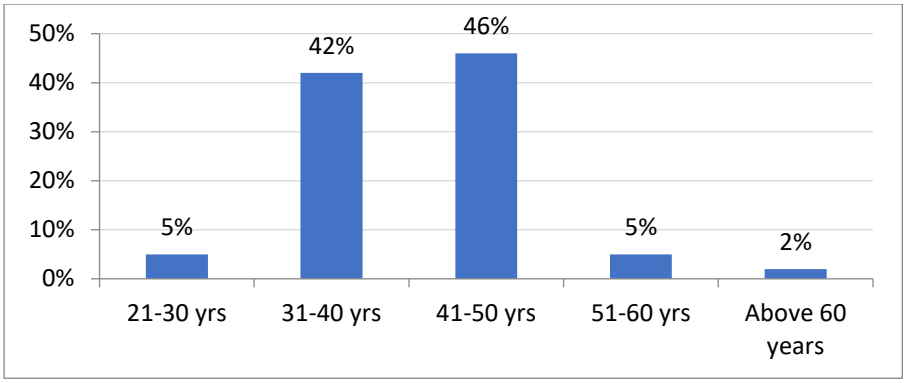

Figure 7-1 Age Distribution – DPQN1

From Figure 7-1, it is observed that 88% of the respondents fall into the age range of 31 – 50 years. Only 5% of the respondents are below 30 years of age. This therefore represents a set of respondents who are more mature than very young. Figure 7-2 indicates the tenure of the respondents:

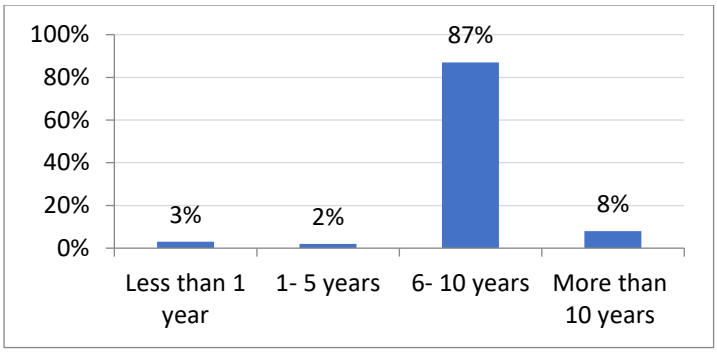

Figure 7-2 Tenure – DPQN2

Figure 7-2 shows that 87% of respondents had tenure of up to 10 years in their organisation, with 8% having tenure longer than 10 years. This reflects a long history and familiarity with organisational systems and processes. Figure 7-3 indicates the grade levels of the respondents:

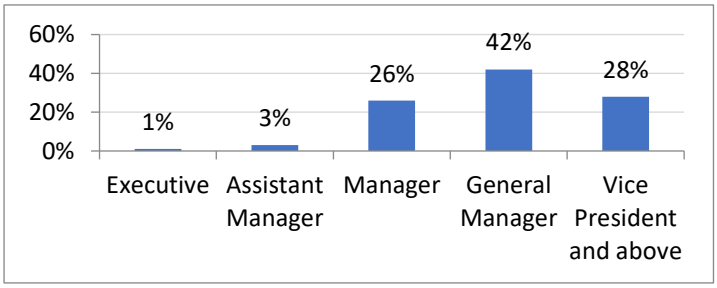

Figure 7-3 Grade Level – DPQN3

From Figure 7-3, it is observed that 26% of respondents are of managerial cadre. The majority of respondents are general manager / vice president cadre. This indicates

respondents occupying senior positions in their respective organisations. Figure 7-4 indicates the different departments that the respondents work within:

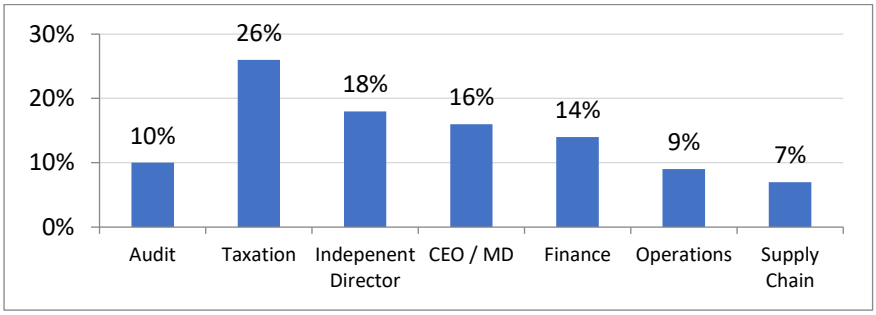

Figure 7-4 Function – DPQN4

It is observed from Figure 7-4 that the respondents in departments that are concerned with risk management. These include audit, taxation, and board of directors, CEO / MD office and finance. Figure 7-5 indicates the various industry sectors the respondents work within:

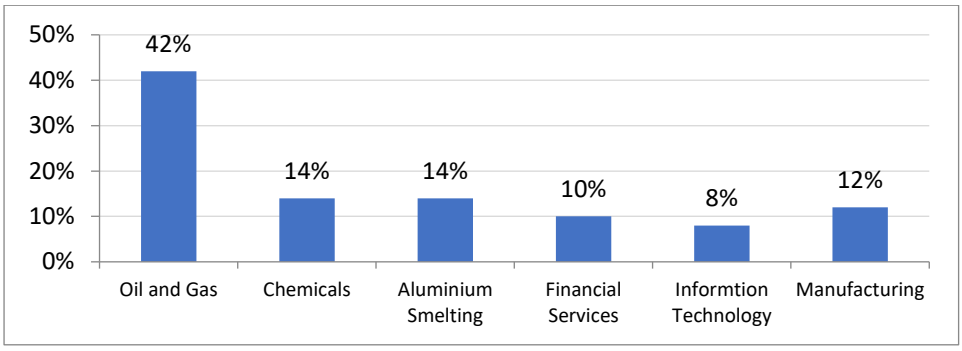

Figure 7-5 Industry Sectors

From Figure 7-5, it is observed that 42% of respondents work within the oil and gas sector. However, other sectors such as chemicals, aluminium smelting, financial services, information technology and manufacturing are also represented. Figure 7-6 indicates the size of the various organisations indicated in terms of number of employees:

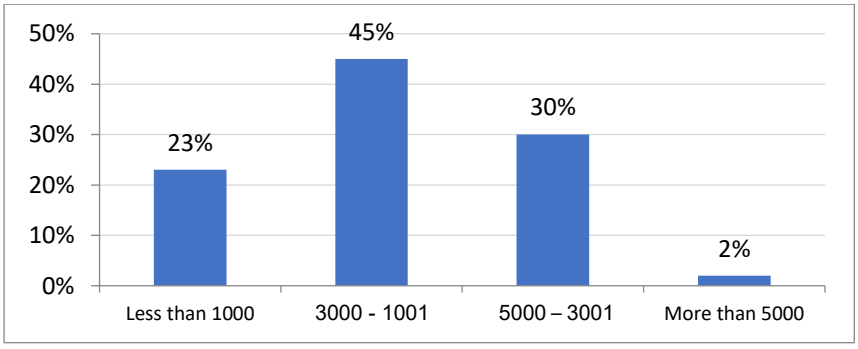

Figure 7-6 Number of Employees – DPQN6

The majority of respondents are from organisations with up to 3,000 employees, whilst 30% are from organisations where there are up to 5,000 employees. Thus, the sample represents employees of large organisations.

Inferences of the Demographic Data – From the demographic data, it is evident that the respondents are all mature individuals, well experienced in their respective domains, and of long tenure in their organisations. They work in domains that are concerned with risk and risk management, in large sized organisations, and in sectors that characterise the Saudi economy. The implication of this demographic data is that the views of these respondents are highly relevant to this research and to that extent, the findings of this research may be considered to be representative of risk management practices being implemented in Saudi Arabia today.

7.3. Familiarity with ERM

Respondents were asked to report their length of experience or involvement in ERM. Figure 7-7 indicates their responses:

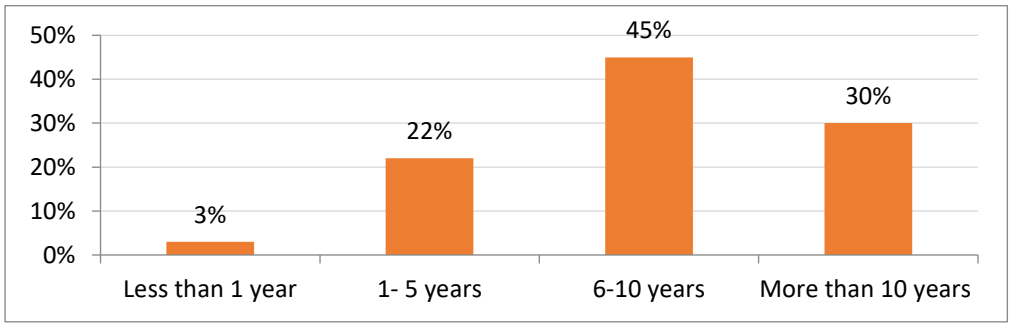

Figure 7-7 Number of Years - ERM Experience- ERM1

It is observed from Figure 7-7 that 45% of the respondents have 6 to 10 years' experience in managing risk, with 30% having more than 10 years of experience in risk management. This indicates a significant level of experience amongst participants in the area of risk management. Respondents were asked as to how well-experienced they considered themselves to be in the area of risk management. Figure 7-8 indicates their responses:

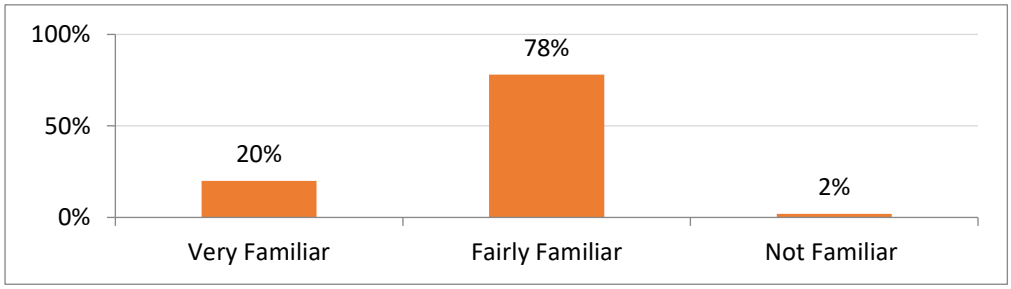

Figure 7-8 Familiarity with ERM – ERM2

From Figure 7-8, it is observed that 20% of the respondents regard themselves as being very familiar with risk management, with 78% responding that they are fairly familiar with risk

management. Figure 7-9 indicates the kind of ERM standards that have been implemented in their respective organisations.

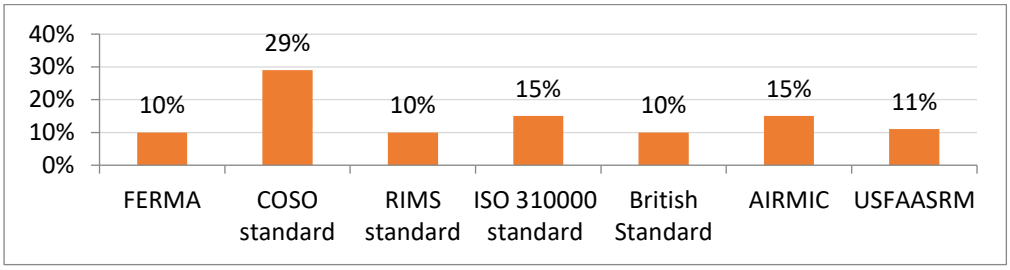

Figure 7-9 ERM Standards Implemented – ERM3

It is observed that the COSO standard is the most commonly implemented ERM standard. Other standards, corresponding to those used worldwide, have also been implemented. Figure 7-10 indicates which stage of the ERM implementation the respondents were involved in.

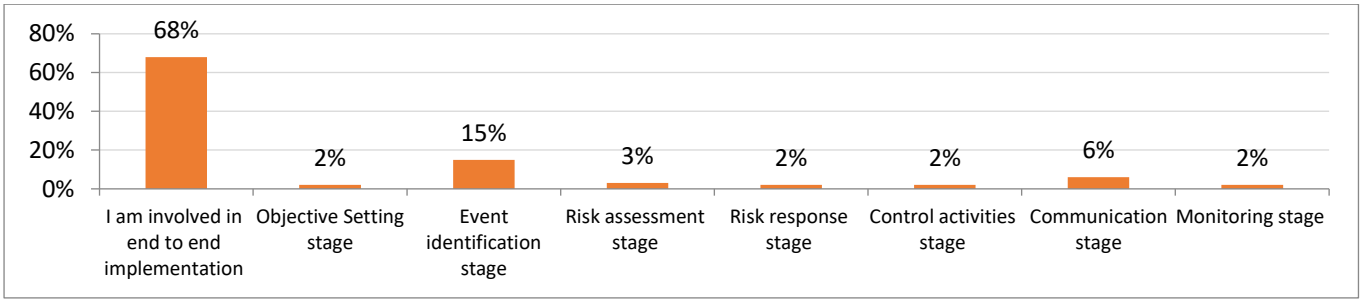

Figure 7-10 ERM Implementation Stage of Involvement – ERM4

From Figure 7-10, it is evident that the majority of respondents are involved in the end-to-end implementation of ERM, with 15% involved in risk identification and the rest involved in one stage or another of ERM implementation. Figure 7-11 indicates the kind of risks that have prompted the implementation of ERM standards of amongst the private sector organisations operating in Saudi Arabia.

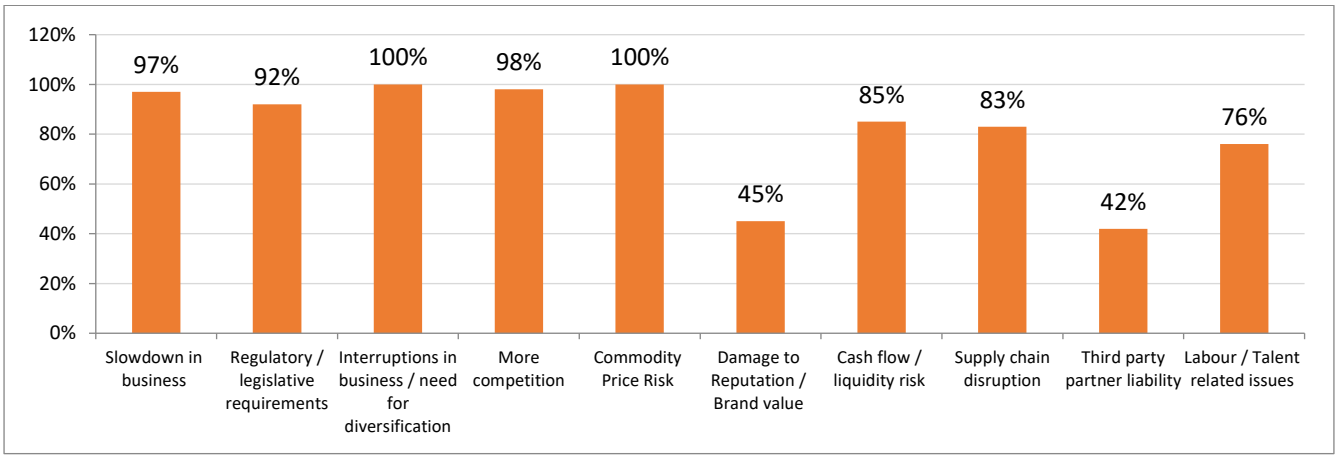

Figure 7-11 Risks leading to ERM Implementation- ERM5

From Figure 7-11, it is observed that all of the risks identified from the literature as impacting modern organisations have been considered by the respondents. These include business slowdown, regulatory risks, urgent need for diversification, competition, and brand equity of the organisation as well as labour-related issues.

Inferences – The respondents are fairly familiar with ERM and its implementation. Enterprise risk management, or ERM, represents the management of risks pertaining to various aspects of an organisation. According to CAS (2003), by integrating hazard, financial, operational, compliance and strategic risks, ERM prepares organisations for all possible functional and process risks that it could possibly face at any level. According to Jablonowski (2009), ERM recognises the interdependencies amongst risks confronting all organisations today. Monahan (2008) also points out that whilst traditional risk management is concerned only with safeguarding the assets and profitability of the organisation through pre-empting risk and mitigating the impact of risk through swift recovery, ERM considerably extends the scope of risk management. This is achieved by addressing all internal and external risks, creating awareness throughout the organisation, protecting and enhancing shareholder value, and by seizing potentially profitable opportunities.

The respondents' answers indicate that various standards of ERM have been implemented in their organisations. Their views on risk impacting their organisations indicates that organisations in Saudi Arabia are no longer subject only to financial risks or risks due to natural hazards, but are in fact exposed to as wide a variety of risks as other organisations around the world. Most of the respondents are involved in the end-to-end implementation of ERM. The implication here is that their views will throw light on how effective ERM implementation is in Saudi Arabia, the kind of leadership style that is prevalent in Saudi Arabian organisations and the links between these styles of leadership and ERM implementation.

7.4. Decision making under the condition of risk and uncertainty

In this section respondents' chosen decision making style is discussed. Their views provide a macro view of decision making styles amongst leaders in Saudi Arabia under the condition of risk and uncertainty. Critical decision making is an activity exclusively undertaken at the senior management level. Bass (2008) points out that the role of leaders is to evaluate and select the best options from a host of available options, choosing those that improve the efficiency of processes and operations. Northouse (2012) indicates that leaders need to ensure that the organisations they head are competitively positioned, vertically integrated,

operationally efficient, and that they incorporate technology into their processes, capabilities and facilities. Hitt *et al.* (2012) state that senior managers make decisions relating to a range of business areas, including the supply chain, strategy formulation, product diversification, marketing, expansion, change management, data management, quality control, regulatory mechanisms and investments. These decisions are critical, as the success or failure of the organisation depends on them. Despite the fact that decision making is known to be risky, Goldstein and Hogarth (1997) point out that most people are not aware of how they make decisions and why they prefer some options over others. Consequently, insofar as decision making is mental activity, the psychology of decision making is still not well understood. Respondents were asked to list how risky they considered a given risk situation. Table 7-1 summarises their responses.

Table 7-1 Risk Perception of Respondents

DM1	Very Risky	Risky	Little Risk	No Risk	Weighted Average	Interpretation
	4	3	2	1		
The more data available to you that pertains to the decision to be made	0	0	2	98	1	No Risk
Ability to quantitatively analyse outcomes of decisions	0	0	6	94	1	No Risk
The more control you have in a particular situation of risk	0	0	1	99	1	No Risk
The more familiarity / skill you have to deal with a particular situation	0	0	0	100	1	No Risk
The more need to consult with fellow colleagues about a particular decision	25	28	24	23	3	Risky
You have more time to consider a decision	0	0	26	74	1	No Risk
Lower number of production innovations in your particular business segment	0	0	3	97	1	No Risk
More willingness you feel to share responsibility for decision making in a situation of risk	26	32	21	21	3	Risky
The more you consider the decision as a personal commitment	0	0	11	89	1	No Risk
The higher the profitability in the outcome of a particular decision	43	35	12	10	3	Risky

The faster the ability of the competition to respond to any decision taken by you	94	6	0	0	4	Very Risky
The larger the variety of possible outcomes - both positive or negative - that might result from your decision	82	6	10	2	4	Very Risky
The higher the chance that your decisions may lead to loss in future	100	0	0	0	4	Very Risky
The greater the possibility of losses inherent in making a particular decision	100	0	0	0	4	Very Risky

From Table 7-1, it can be observed that some decision making situations were perceived to be far riskier than others. In general, the more information, time, resources and control the respondents had when making a decision, the less risky the decision was considered to be. This is indicated in the weighted average scores of 1 and 1. When decision making was considered to be a personal commitment, it was perceived to be less risky. Whenever decision making involved consulting with others, or the possibility of loss, or even the possibility of higher than average profits, or the greater the variability in outcomes, the riskier the decision was considered to be, as indicated by the weighted average scores of 3 and 4. In particular, the factors that considered increasing the risk include: (i) variety of outcomes resulting from a particular decision; (ii) the swiftness with which competitors would respond to a decision made; (iii) potential for loss; (iv) large profit potential.

The inference that may be made from these findings is that risk, as perceived by the respondents, is in accordance with the conventional notion of risk, which specifies standard deviation of outcomes. In general, the overall attitude to risk is one of fear, anxiety and avoidance. This is in accordance with the findings of Apter (1992) who pointed out that all humans approach risk in two different ways, based on two fundamentally differing perspectives of risk or danger. The first approach is a thrill-seeking perspective, where individuals perceive the excitement inherent in all risk. The other approach is that of anxiety, and occurs amongst those who seek predictability in all things. From table 7-1 it is evident that decision making is only perceived as non-risky when data and resources are fully available. The style of decision making demonstrated is highly individualistic with reluctance on the part of the respondents to share decision making processes with subordinates. Risk is not perceived in terms of gains or opportunities, but always in terms of threat or loss.

The respondents were then queried as to their risk appetite. Table 7-2 summarises their responses.

Table 7-2 Risk Appetite of Respondents

DM2	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
You believe that high risks are necessary for higher profits	2	4	45	49	2	Disagree
You believe that high risks are necessary to reach personal achievements	0	1	37	62	1	Strongly Disagree
You will take high risks if there is a possibility for higher profitability	8	11	36	45	2	Disagree
You do not waste time making risk based decisions. You make these decisions quickly	0	1	46	53	1	Disagree
Taking a risk gives you a feeling of excitement	0	0	54	46	2	Disagree
You like dangerous activities	0	0	48	52	1	Disagree
You enjoy taking risks	0	0	32	68	1	Strongly Disagree
You like engaging in activities where the outcomes are driven by chance	2	5	44	49	2	Disagree
In business, risk taking is justified even if the situation cannot be brought under control	0	8	33	59	1	Disagree
You believe that a key leadership skill is the ability to take risks	15	19	25	41	2	Disagree
You would take risks for the achievement of even small goals	0	0	15	85	1	Strongly Disagree
Gambling is an exciting activity for you	0	0	36	64	1	Strongly Disagree

From Table 7-2, it can be observed from the weighted mean values of less than 2 that the respondents disagree / strongly disagree with all of the options. The options pertain to choices that a person with a high risk appetite will make. This includes taking risks for the sake of profits, for the thrill of risk and for the achievement of even small goals. The belief that both profit and personal achievements can only be gained by taking risks is more likely to be held by those with a high risk appetite. The disagreement expressed by respondents to all of the options indicates low tolerance for risk, or a low risk appetite. This also indicates a general

aversion to risk taking amongst the respondents, which also means that there may be several opportunities lost for want of a higher risk appetite amongst respondents. According to Klein (2016) risk refers to threat of damage or loss or any negative consequences arising due to external or internal vulnerabilities of the organization and which can be avoided and to the loss of opportunities arising due to avoidance seeking behaviour of conservative management. It is evident that the concept that risk also contains opportunities is not being considered by the respondents.

The respondents were asked as to what strategies they would adopt to control risk in a particular situation. Table 7-3 summarises their responses.

Table 7-3 Strategies to Control Risk

DM3	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
Gather more data	91	9	0	0	4	Strongly Agree
Consult with subordinates	21	20	27	32	2	Disagree
Consult with domain experts	88	12	0	0	4	Strongly Agree
Consult with peers / superiors	76	12	10	2	4	Strongly Agree
Take into account the differences between this decision and preceding ones	96	4	0	0	4	Strongly Agree
Take into account the similarities between this decision preceding ones	97	3	0	0	4	Strongly Agree
Reduce time taken for decision making by splitting each decision into smaller ones	90	10	0	0	4	Strongly Agree
Use technical and statistical software and tools for the quantification of risks	100	0	0	0	4	Strongly Agree
Ask for guidance from an internal team	18	22	26	34	2	Disagree
Consider a decision based on previous decisions	96	4	0	0	4	Strongly Agree
Postpone the decision if possible	64	32	2	2	4	Strongly Agree
Do nothing if risk is not urgent or tangible	76	18	4	2	4	Strongly Agree

From Table 7-3, it is observed that respondents' preferred strategies for countering risk include gathering more data, consulting with superiors and experts, using previous decisions to make current decisions, and splitting a decision into smaller parts to ease the decision making process. Other viable strategies include postponement of the decision, or even doing nothing if the risk was not considered to be immediate or urgent. This reflects the risk avoidance behaviour discussed in section 2.3.1 of the literature review. Eduljee (2000) points out that the states of boredom or relaxation represent the 'protective' frame whilst the excitement or anxiety states of mind fall under the 'risky' frame. There is a boundary between the two frames called the 'dangerous edge'. At this edge, the person encounters the emotion of 'risk-seeking' or 'avoidance' and it is these emotions the nature of determine decision making. The respondents do not consider asking subordinates for their opinions or setting up an internal team comprising members from all levels of the organisation to be viable strategy for countering risk. Thus, it can be said that risk aversion drives decision making amongst Saudi organisations. It is a data / technology / software driven activity and it is heavily influenced by heuristics of past choice, also. It is more of an individualistic activity rather than a collective effort. Respondents were then asked to assess how a decision situation impacted their attitude toward risk. Table 7-4 illustrates their views.

Table 7-4 Impact of a Decision Situation on Risk Attitude

DM4	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
Decision making involves consideration of profit and loss	100	0	0	0	4	Strongly Agree
Decision making involves consideration of opportunities and threats	98	2	0	0	4	Strongly Agree
Decision making in the current phase is based on recovering past losses	64	36	0	0	4	Strongly Agree
Decision making in the current phase is based on ignoring past losses and focus on target achievement	0	2	56	42	2	Disagree
In case of loss, you would mostly regret the unusual decisions you took	56	42	2	0	4	Strongly Agree
In case of loss, you would mostly regret the routine decisions you took	42	58	0	0	3	Agree
From several decision options, you would select the one with the lowest risk and least profitable	88	12	0	0	4	Strongly Agree

From several decision options, you would select the one with the highest risk and most profitable	0	1	23	77	1	Strongly Disagree
From several decision options, you would select the one with moderate risk and moderate profitability	21	25	22	32	2	Disagree

The options discussed in Table 7-4 indicate whether risk has a strategic dimension, if it is linked to previous decisions /outcomes, and whether the availability of decision alternatives impacts the choice of decisions. As is observed in Table 7-4, the manner in which the situation of risk presents itself impacts the decision making style. The respondents indicate that they consider the framing effects of profits, losses, opportunities and threats inherent in every situation of risk. This means that both the financial and the strategic dimensions of risk have been considered in decisions made. Past events heavily influence decision making. These responses indicate that the respondents are influenced by psychometric paradigms and bias discussed in Sections 2.2.2 of the literature review. Paradigms are popular viewpoints based on previous experience. Psychometric paradigms reflect the phenomenon wherein managers use the past experience to arrive at decisions, especially during times of uncertainty. According to Breakwell (2007), past experience is relevant to decision making as it influences the individual's attitude towards risk. This is evident by 64 of the 100 respondents indicating strong agreement that their current decision making processes are heavily influenced by recovering past losses. They find it difficult to ignore past losses, which is a tangible occurrence that has actually taken place in the past, unlike preparing for future target achievements.

This influence of past occurrence is again evident in the respondent's statement that they would somewhat regret routine decisions that led to losses but would strongly regret new / unusual decisions that led to losses. Respondents' rejection of decisions that posed high risks and high profits and preference for low risk, a low profit option demonstrates their risk aversion further. These responses also indicate availability bias discussed in section 2.2.3 of the literature review occurs from the decision maker's familiarity with an event occurring, or the popularity of the event's nature (Kahneman and Tversky, 2009). Also known as the bias of salience, availability bias occurs due to the greater impact of first-hand witnesses of an event on the decision maker, making the event easily retrievable. Peters (2003) termed this bias the retrievability of events or the heuristic of familiarity, where it is assumed that information that is readily available and also statistically valid. Dickinson (2005) indicates

that this type of bias results in an inability to predict events, as well as inaccurate calculations, planning based on biased data, and overconfidence in decision making.

Inferences – There are several inferences that may be made as to how respondents make decisions under the condition of risk and uncertainty. It is evident that the respondents consider risk to be a multi–dimensional concept that cannot be reduced to an easily quantifiable entity. In order to make decisions in this situation, various features are used. There is an overwhelming dependence on information and on technical / statistics based systems during the decision making process. It can be inferred, here, that perception of risk increases as the availability or information on a specific situation decreases. There is less reliance on a subordinate group-based decision making processes amongst the respondents, meaning that they prefer to interact with their peers or superiors only when arriving at decisions. People lower down the organisational hierarchy are rarely consulted with for arriving at decision. A major finding is that loss aversion has resulted in risk aversion and both drive the decision-making processes of the respondents. It is apparent that they reject probabilities and do not focus on the compatibility between expected values and different decision outcomes. Rather, it is the potential size of loss that is considered. The broad conclusion that may be arrived at here is that leaders of private organisations in Saudi Arabia are extremely cautious and prefer to focus on the downside of a decision. Decision making strategies are characterised by loss avoidance rather than the potential for greater profit. Perception of risk increases as a result of numerous factors, according to the data. These include the possible range of outcomes that might result from a decision, possibility of loss, and the quantity of loss associated with a particular decision. The various responses also indicate the operation of various heuristic biases in the decision making process when respondents have to choose between different risky alternatives. These include how the risk situation is framed, past experience, and availability of data. The respondents are hesitant to make decisions in relation to low-probability outcomes and prefer to engage in decision making when outcomes are supported with high probability.

7.5 Leadership style

ERM is an activity driven by leaders of business entities. COSO (2004) defines ERM as a process implemented by the organisation’s board of directors, across the enterprise, for the purpose of identifying uncertainties that might impact the business and to prepare accordingly so that the organisation can achieve its business objectives. According to Yilmaz (2008), ERM is essentially a top-down activity, initiated and supervised by top management and

implemented by lower echelons of management. Dafikpaku (2011) points out that whilst everyone within an organisation is accountable for the efficient running of ERM programmes, the chief executive officer together with the board of directors assume ultimate responsibility for all risks that the business is exposed to and the outcomes of the ERM programmes implemented. According to HBR (2013), the organisation's board of directors – comprised of directors from other organisations, academics and professionals, together with the CEO, chief financial officers, chief risk officer and chief compliance officers – is collectively responsible for the success of ERM implementation. This includes the proactive identification of current and emergent risks, implementing risk mitigation activity, ensuring that all decisions taken are within the risk appetite of the organisation, including risk management responsibilities within strategic operations, creating a risk awareness culture throughout the organisation and linking risk information to strategic decision making. The implication is that leadership style impacts how effectively ERM gets implemented. This section discusses the leadership style represented by the respondents. Respondents were queried as to what factors would result in enhanced risk appetite, in their opinion. Table 7-5 summarises the views of the respondents.

Table 7-5 Leadership Style

LRD1	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
Decision maker is extroverted and self-confident	32	38	12	18	3	Agree
Organisational culture emphasises the need to take risks	30	42	6	22	3	Agree
The organisation generously rewards risk takers	27	48	12	13	3	Agree
Risk takers are rewarded with equity options and bonus payments	45	32	13	10	3	Agree
Decision makers are independently wealthy	59	41	0	0	4	Strongly Agree
The economic climate in which the organisation is functioning is positive	36	35	15	14	3	Agree
The organisation functions in such a way that its chances of profits are very high	45	51	2	2	3	Agree
Previous decisions in similar circumstances have been successful	76	34	0	0	4	Strongly Agree

The organisation is a follower rather than a leader	56	40	2	2	4	Strongly Agree
Decisions are made by individuals and not collectively	36	34	12	18	3	Agree
The organisation undertakes regular evaluation and monitoring of performance	38	39	15	8	3	Agree

From Table 7-5, it is observed that respondents indicated a combination of personal and organisational characteristics that determine the risk-taking appetite of the organisation. An extroverted decision maker with a high degree of self-belief, decision makers who are independently wealthy, and individualistic decision makers are all believed to create a higher risk appetite within an organisation. Leaders who are able to develop an organisational culture of risk and link risk taking with generous reward structures in the form of equity options and bonus payments facilitate greater risk taking. However, respondents' opinion that organisations should be followers rather than leaders again demonstrates their cautious approach to risk-based decision making. The implication here is that Saudi Arabian organisations should learn from the mistakes of others rather than run the risk of making them themselves. In addition, respondents recommend constant monitoring and evaluation of performance, risk taking when only when the organisation is enjoying favourable circumstances, when there is a strong chance of earning greater profits, and when previous decisions of a similar nature have been successful. All of this indicates that whilst respondents recognise the qualities and the circumstances that merit high risk taking, they prefer to adopt a more cautious approach to risk taking.

Respondents were asked to indicate the characteristics of leadership behaviour with their employees and their responses are summarised in Table 7-6.

Table 7-6 Characteristics of Leader – Employee Relations

LRD2	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
Leaders help their subordinates to achieve their development goals and objectives	35	49	10	6	3	Agree
Decisions about development result in effective strategies for implementation	42	48	2	8	3	Agree
Leaders use two-way communication processes with their subordinates	12	25	8	45	2	Disagree

Leaders build strong relationships with employees that facilitate goal achievement	38	48	6	8	3	Agree
Leaders help staff to create the right image for the organisation	39	58	2	1	3	Agree

From Table 7-6, it is observed that respondents agree that that they should help their subordinates achieve their personal development goals and with the importance of strong interpersonal relationships that helps to create the right image of the organisation. However, they do not believe this necessarily has to be achieved through two-way communication processes. This indicates that there are limits to what the respondents will do to establish a truly flat organisational structure. The preference here is for a hierarchal structure with more formal processes of communication and reporting. The respondents were then queried as to what they believe to be the leadership style adopted in their organisations. Their views are illustrated in Table 7-7.

Table 7-7 Leadership Style in Organisations

LRD3	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
Leaders have an emotional bond with the organisation, their subordinates and organisation vision / mission	26	28	24	22	3	Agree
Leaders believe in delegating control to their subordinates	2	5	28	65	1	Strongly Disagree
Leaders believe in sharing decision making powers with their subordinates	1	8	16	75	1	Strongly Disagree
Leaders should reward and incentivise their subordinates	42	49	3	6	3	Agree
Leaders should establish good rapport with subordinates	38	29	18	15	3	Agree
Leaders encourage participative management	5	6	28	61	2	Disagree
All leaders in the organisation share same goals	40	46	6	8	3	Agree
The goals of the leaders match those of their subordinates	17	5	45	33	2	Disagree

From Table 7-7, it is observed that respondents agree that leaders should be emotionally involved with the organisation, employees and mission and that all leaders should share similar goals. They agree that staff should be suitably rewarded; that good rapport should be established with the staff and that leaders in the organisation should share similar goals. On the subjects of sharing decision-making power and the delegation of decision-making authority, however, they disagree. They do not agree with a participative style of management or that the goals of leaders and those of their subordinates should necessarily coincide. All of this indicates a preference for a style of leadership that is authoritarian.

The respondents were asked about employee relationships in their organizations. This is because it is employees who are responsible for implementing decisions made by senior management. Table 7-8 indicates their views.

Table 7-8 Employee Relationships

LRD4	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
Employees listen to each other and have good interpersonal relationships	25	27	23	25	3	Agree
Employees state that organisational decisions are legitimate	26	26	22	24	3	Agree
Employees believe that they are treated fairly and in a just manner	22	15	29	34	2	Disagree
Employees keep promises they make with respect to target achievements	20	17	28	35	2	Disagree
Employees take responsibility for decisions and the outcomes of those decisions	10	2	29	59	2	Disagree
Employees express a long term commitment to the organisation	2	6	38	54	2	Disagree
You believe that your subordinates wish to establish a long term relationship / bond with you	22	18	28	32	2	Disagree
You have a reciprocal relationship with your employees	12	16	28	44	2	Disagree
Employees are satisfied with their jobs, roles in the organisation	12	18	29	41	2	Disagree

From Table 7-8, it is evident that the respondents disagree that their subordinates report satisfaction with the organisation, their jobs and their roles. Respondents do not express a long term commitment to the organisation, nor do they seek a long-term, reciprocal relationship with their bosses. Whilst they have good interpersonal relationships amongst themselves, they do not believe that they are treated justly and fairly. Employees' demonstrated commitment to meeting targets is noted as an issue, which highlights the impact that the aforementioned attitudes have on performance.

Inferences– Mihet (2014) studied risk taking behaviour amongst 500 organizations from across the world and found that risk-taking is high for those organizations which have low aversion to uncertainties, low tolerance for hierarchy and are highly individualistic. Those organizations operating in a cultural environment which is highly averse to risk and highly tolerant to hierarchy are less likely to take risks. From the respondents answers it may be inferred that private Saudi organisations are found to be largely hierarchical and authoritarian in their approach to leadership style. Whilst employees are taken care of in terms of rewards, incentives, training and development, it is evident that leaders do not wish to share decision making powers with them, nor do they delegate critical decision making authority to them. Respondents indicated that there is no participatory effort in decision making when such participation means involving subordinates. The respondent's answers also indicated employee dissatisfaction with the way decisions are taken. This may be linked to the authoritarian style of leadership being followed in the Saudi organizations considered in this research. Freidrich *et al.* (2009) state that leadership shapes belief, desire and priorities, and that it is more about influencing others rather than just ensuring compliance. The implication here is that leadership is about more than just individual qualities and personality traits, because these factors do not necessarily secure the voluntary compliance of others, nor do they necessarily motivate or create passion amongst team members. Hillman and Dalziel (2003) point out that the individualistic frameworks of leadership hint at an imposition of will and/or incentivisation to secure compliance. However, since these means cannot influence others through the heart and mind, these means are now considered indicators of leadership failure even if they achieve compliance. How this leadership style impacts organisational culture and implementation of ERM therefore needs to be examined. This will be done in the following sections.

7.6. Organisational Culture

This section examines the organisational culture of private sector organisations in Saudi Arabia with regards to risk tolerance and appetite from respondents' perspectives. Respondents were queried as to how decisions were made at the executive level. Figure 7-12 illustrates their responses.

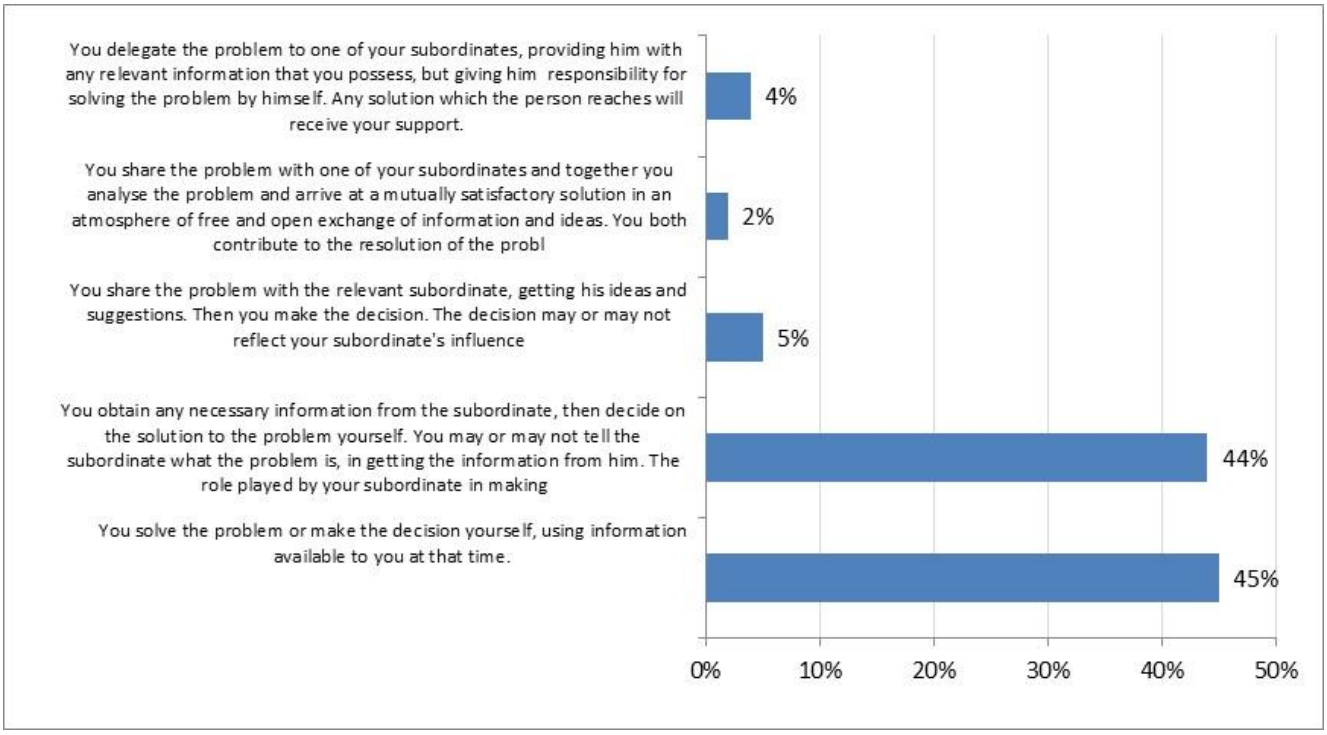

Figure 7-12 Decision Making Style – OC1

From Figure 7-12, it is observed that when making decisions, 89 % of the respondents solve problems themselves using data available to them at that point in time. This data can also be in the form decisions that they have made in the past in a similar situation. Some of the respondents obtain information from subordinates for the purposes of decision making, but the final task of decision making is carried out at the individual level. This style of decision making is preferred by 89% of the respondents, and only 11% of the respondents indicated engagement in a more participatory form of decision making where subordinates actually participate in the decision making process. This only further corroborates what has been already stated before. Again, an authoritarian and individualistic decision making style is evident in the Saudi Arabian private sector. The respondents were asked which stakeholders views they considered during the decision making process. Their views are summarised in Table 7-9.

Table 7-9 Stakeholders in the Decision Making Process

OC2	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
Customers	54	44	1	1	4	Strongly Agree
Competitors	46	51	2	1	3	Agree
Institutional and other large shareholders	98	2	0	0	4	Strongly Agree
Government / Government Agencies / Regulators	100	0	0	0	4	Strongly Agree
Employees	18	17	27	38	2	Disagree
Banks / Financial / Lending institutions	100	0	0	0	4	Strongly Agree
Media	91	9	0	0	4	Strongly Agree
Vendor Partner / Suppliers	88	12	0	0	4	Strongly Agree
Non – Governmental Organisations / NGOs	0	0	45	55	1	Disagree
Small Shareholders	17	15	28	40	2	Disagree

From Table 7-9, it is apparent that the respondents actively liaise with stakeholders from the external market in the process of gathering information for the purposes of decision making. These include customers, competitors, government agencies, media agencies, vendors / partners and large shareholders. However, they do not consult with their employees or with smaller shareholders. Whilst this points to participatory decision making, the participants are external to the organisation, not internal. Thus, it appears that internal stakeholders have a very limited role in risk management and are given less importance compared to external stakeholders.

Respondents were queried as to the risk philosophy of their organisations, and Table 7-10 summarises their views.

Table 7-10 Risk Philosophy of the Organisation

OC3	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
The concept of risk is part of the mission statement or sub statements	18	17	27	38	2	Disagree
Each business unit formulates a position towards risk	44	22	12	22	3	Agree
Risks are reflected in key performance indicators	10	8	32	50	2	Disagree
Projects are analysed according to their embedded risks	16	27	29	28	2	Disagree
Strategic planning and risk management are aligned	15	12	11	62	2	Disagree

It is observed from Table 7-10 that the mission / vision statements of the organisations do not convey the concept of risk. Each business unit within the organisations treats risk as independent from other units. Projects are not approached from the perspective of risk, nor are risk considered a strategic planning activity. Respondents were queried as to the risk management culture of their organisation. Their views are indicated in Table 7-11.

Table 7-11 Risk Management Culture of the Organisation

OC4	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
Regular meetings for brainstorming and identifying risks are held	16	27	29	28	2	Disagree
The organisation is aware of strength, weaknesses, opportunities and threats (SWOT-Analysis)	10	48	20	22	2	Agree
Everyone that makes decisions about risks are fully involved	28	27	20	25	3	Agree
There is an accessible risk register	16	27	29	28	2	Disagree
Experts/heads of different departments are consulted before arriving at decisions	18	16	30	36	2	Disagree
Independent experts participate in decision making processes involved in risk management	47	30	11	12	3	Agree
An “outside view” is adopted to identify risks	51	39	8	2	3	Agree

From Table 7-11, it is observed that whilst the organisation is aware of SWOT analysis and that independent views (outsider views) are taken into account to aid in the process of risk management, they disagree that there is a coherent process to managing risk. The respondents stated that they do not hold regular risk event identification brainstorming sessions, keep an accessible risk register, or consult other departments to manage and counter risk in a collective and comprehensive manner.

Respondents were asked about the risk assessment culture of their organisation, and their views are summarised in Table 7-12.

Table 7-12 Risk Management Culture of the Organisation

OC5	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
Risks are ranked generally and categorised according to their time horizon	10	13	46	31	2	Disagree
A quantitative method for risk measurement is applied	92	7	1	0	4	Strongly Agree
Results are compared to historical data or past projects	100	0	0	0	4	Strongly Agree
All available data is considered in the calculation	100	0	0	0	4	Strongly Agree
Independent experts examine the risk assessment	25	23	15	37	2	Disagree
Risk benchmarking is undertaken	9	14	35	44	2	Disagree
Techniques of reflective judgment are applied in qualitative assessments	2	8	44	46	2	Disagree

As they have previously, respondents strongly agree that they follow quantitative methods to assess risk, as well as performing a comparison with historical data and using data-based decision making methods. However, the participants do not use more sophisticated techniques such as qualitative risk assessment methods, risk benchmarking, independent assessment or the categorisation of risks. This means that even the data / technology / statistics based assessments are built upon on basic rudimentary methods. Respondents were asked to report the risk control mechanisms used within their organisations, and their views are summarised in Table 7-13.

Table 7-13 Risk Control Mechanisms of the Organisation

OC6	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
Risk responses are aligned with the organisation's risk appetite	25	26	32	17	3	Agree
Responses to non-cash-flow risk have been designed	12	8	49	31	2	Disagree
Policies and guidelines are updated on a regular basis	6	18	52	24	2	Disagree
Behavioural implications have been regarded in developing the activities	2	0	30	68	1	Strongly Disagree
Non-rules-based mitigation techniques are considered for strategic and external risks	0	5	32	63	1	Strongly Disagree
Trainings and workshops for employees and managers are part of the control system	23	18	6	53	2	Disagree

From Table 7-13, it is observed that whatever the response to risk, it is extremely measured and undertaken in accordance with what the respondents perceive to be the risk appetite of their organisation. They do, however, disagree that more state-of-the-art risk control mechanisms have been implemented in their organisations. This includes consideration of non–cash based risks, the updating of risk based policies and guidelines, employee behaviour, non–quantitative based risk mitigation strategies, and conducting training and educational programmes for employees on risk management. The risk communication strategies of the respondents were then examined, and their views are summarised in Table 7-14.

Table 7-14 Risk Communication Strategies

OC7	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
Essential information is communicated transparently and vertically	35	38	20	7	3	Agree
A specific technique is employed for communicating confidential information (E.g. whistle-blowing mechanism)	0	6	52	42	2	Disagree
Employees are informed regularly through e-mails, newsletters, etc.	1	8	62	29	2	Disagree
Active participation of employees is possible in decision making processes	0	6	35	59	1	Strongly Disagree
Options that deviate from the general consensus are welcomed and so is critical thinking	0	8	49	43	2	Disagree
Management and the board enable an open discussion across the organisational levels	5	6	59	30	2	Disagree

Respondents believe that their organisations encourage open and transparent communications across all levels. However, their responses to the other options do not support this belief. They state that there is no technique whereby employees can indicate anything confidential to their superiors. It is noted that there is a significant level of restrictedness felt in both the frequency of communication and the means used to communicate with employees. Additionally, subordinates cannot participate in senior level decision making processes. Standard decisions, based on past decisions, alone are considered, with senior management and the board of directors not permitting open discussions across all organisational levels. The implication here is that communication is one sided, top–down and unilateral.

Inferences – The inference that may be made is that the organisational culture is not supportive of risk or of the effective implementation of ERM standards. In section 2.4.4 of the literature review it was identified that the board of directors have the responsibility to not just understand the psychological factors that impact their decision making capability, but to also influence others through the creation of a risk-aware and risk-supporting organisational culture. However, according to Hillson (2012), it is this one factor that is often missing in organisations, and the organisation's inability to treat risk properly may be attributed to the

lack of a risk supportive culture. Hillson (2012) points out that there is currently too much emphasis placed on how to manage risk and not enough on risk leadership. That is to say, there is a focus on the tools and techniques of risk management – such as the standards-based approach to ERM implementation – but not enough on risk leadership implemented at a strategic level. Creating a risk-based organisational culture that would support the effective implementation of ERM includes the ability to sense and communicate risk, a flat organisational structure, open and transparent communication, and a participatory style of decision making (Goden, 2015), Cohrs *et al.,* (2013), Bhatnagar (2012). All of this would facilitate the psychological perception of a risk-based culture within the organisation. The overall conclusion can be made that effective ERM implementation and risk are not supported within the organisational culture of private organisations in Saudi Arabia.

7.7. ERM implementation status

This section examines whether the respondents believe the implementation of standards-based ERM processes and systems in their organisations have been achieved or not. This corresponds to examining whether the benefits of ERM discussed in section 1.2 have been achieved or not. The advantages of ERM have been enumerated as including greater transparency, corporate governance, security, cost savings, technological leverage, business continuity, preparedness for disaster, and regulatory compliance, as well as greater accuracy of financial disclosures, stricter norms for financial reporting and control, greater focus from organisational ratings, and the facilitation of the globalisation of the organisation's activities (SOA, 2008). The inference may be made that ERM is not a peripheral activity, but forms a core part of business strategy – one that helps to achieve business success. Gatto (2015) points out that ERM converts uncertainties not only into risks that have to be mitigated, but also into opportunities that might be exploited. ERM is therefore of vital strategic importance to the organisation in cases where the decisions made can either erode or enhance shareholder value. In this regard participants were first asked to classify the maturity level of the ERM implementation in their respective organisations. Their views are summarised in Figure 7-13.

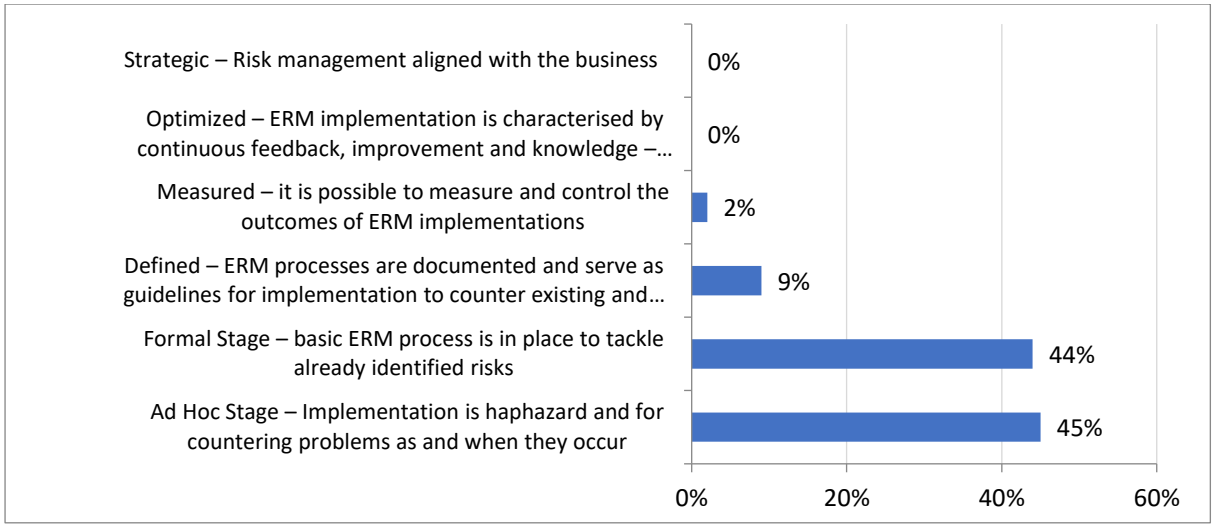

Figure 7-13 Maturity Level – ERM Implementation: SERM1

From Figure 7-13, it is observed that 45% of the respondents state the implementation of ERM in their organisations to be haphazard and geared towards the resolution of problems as and when they occur rather than as a pre-emptive mechanism. This corresponds to the ad-hoc stage or level 1 of the capability maturity model, which is an indicator that ERM implementation has not been effectively implemented. An additional 44% of respondents indicated that basic ERM processes are in place, but even here the approach is reactive in that ERM systems are put in place to tackle known risks or risks that are already identified. The implication is that the ERM systems being implemented are not pro-active, nor can they suitably counter emergent or unknown / unfamiliar risks. Only 9% of the respondents indicate documentation that implies a standardised approach to ERM implementation and just 2% indicated quantitative analysis and measurement of ERM processes in their organisations. None of the respondents indicated that the ERM system implementation in their organisations corresponds to level 5 and above of the capability maturity model corresponding to the strategic / optimised stage of achievement, where all of the benefits of ERM will accrue. Thus, the Saudi private sector can be seen to still be in the nascent stage of ERM adoption and implementation.

Respondents were queried as to the benefits that have accrued post-implementation of ERM in their organisations. Table 7-15 summarises their responses.

Table 7-15 Benefits of ERM Implementation

SERM2	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
Risk strategy and organisational strategy have been aligned	0	0	45	55	1	Strongly Disagree
Risk response decision making capability has been enhanced	0	0	18	82	1	Strongly Disagree
Operational surprises and losses have been reduced	0	1	56	43	2	Disagree
Enhanced cross-enterprise risk identification and management capability	0	0	32	68	1	Strongly Disagree
Enhanced capability to provide integrated response to multiple risk	0	0	0	100	1	Strongly Disagree
Better able to identify and seize opportunities	0	1	2	97	1	Strongly Disagree
Improved deployment of men, money and materials	0	0	5	95	1	Strongly Disagree

From Table 7-15, it is evident that none of the benefits of ERM have accrued to the majority of the organisations represented in this study. From the literature review, these benefits have been identified as alignment between organisational strategy and risk strategy, enhanced decision making capability, reduction in surprise on account of sudden risk, better ability to identify and manage cross-enterprise risk, better capability to develop effective response to different risks, the ability to identify and exploit opportunities, and to improve the deployment of resources within the organisation. Thus, private Saudi organisations are thought to be particularly vulnerable to risk as a result of the lack of accruement of these types of benefits.

The respondents were asked to rate whether the implementation of ERM in their organisations may be considered a success or a failure. Figure 7-14 indicates their responses.

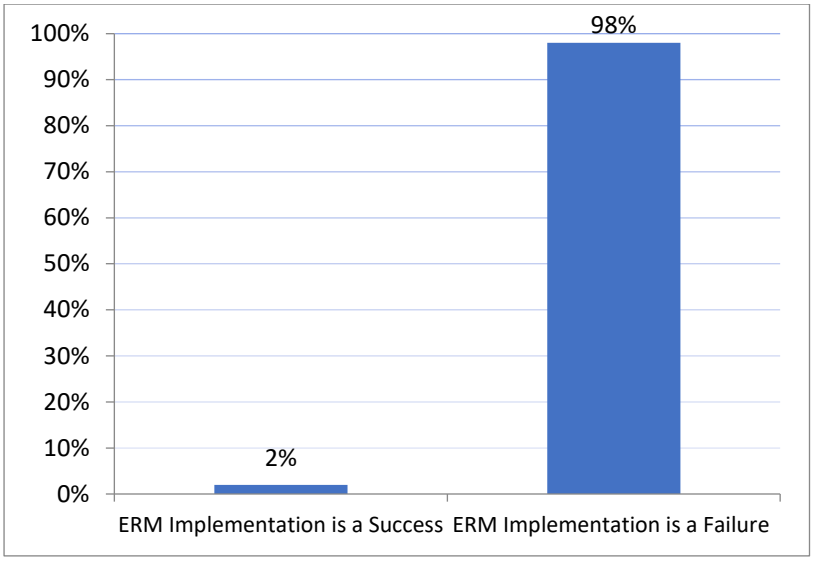

Figure 7-14 ERM Implementation – Success/Failure: SERM3

From Figure 7-14, it is observed that 98% of the respondents consider ERM implementation to be a failure. Only 2% consider their ERM implementation to be a success. The implication here is that the respondents do not understand the reasons for the failure of implementation of a standards-based ERM system. Thus, it is hoped that the findings presented in this dissertation, along with the recommendations that will be made in this regard, will be particularly beneficial.

7.8. Correlational analysis

Correlational analysis was performed using the CORREL function in Excel. The constant variable was SERM2, which corresponds to the benefits that occur due to ERM implementation. It may be noted that the respondents have disagreed that any of the benefits of ERM implementation have accrued to their organisations. Accordingly, the variable SERM2 carries a negative connotation in that it has 'not been achieved'. The SERM2 variable has been compared in Microsoft Excel to the variables DM1, DM2, DM3, LRD2, LRD4, OC3 and OC6, which correspond to decision making style, leadership style and organisational culture, respectively. The various options considered in each of these variables are summarised in Appendix 3. The correlation was performed on the basis of the value of the correlation coefficient, as calculated using CORREL. A stronger positive correlation between two variables is denoted by correlation coefficient values close to +1. Conversely, negative correlations are indicated by values closer to -1. If the value of correlation coefficient is '0', the variables are not correlated at all (Creswell, 2003).

SERM2 was correlated with those options in DM1 that indicate a more positivist, determinist perception of risk. These options are listed in Appendix 3 and indicate dependence of risk

perception on the data available for decision making, ability to quantitatively analyse outcomes of decisions, the control the respondents have in a situation of risk, the familiarity or skill that respondents have to deal with that particular situation of risk, the impact of having more time to make a decision, the number of product innovations in a particular business segment, and the consideration of the decision as a personal commitment (Harzer and Ruch, (2013), Snyder (2014) and Froman (2014). It was noted that the responses to all of these options indicated that the respondents were extremely risk averse. The CORREL coefficient for these options of the variable DM1 run with SERM2 was 0.833. This indicates a strong, positive correlation between the variable of 'positivist' and 'non achievement' of the benefits of a standards-based ERM implementation. This implies that the more risk averse or more 'safe' the respondents wanted to be, the less likely that they would experience successful ERM implementation.

SERM2 was correlated with those options in DM1 that indicated a more contextualist style of risk perception. These options are listed in Appendix 3 and indicate dependence of risk perception on the requirement to consult with fellow colleagues, willingness to share responsibility for decision making in a situation of risk, higher profitability in the outcome of a particular decision, the agility of competition to respond to a particular decision, a larger variety or range in possible outcomes, and a greater possibility that decisions can lead to a situation of loss in future Adams (2012), Goepel *et al.,* (2014) and Nathan (2004). From the responses obtained, it was observed that the respondents felt that the situations represented by the aforementioned options increased the perception of risk associated with a decision. The CORREL coefficient for these options of the variable DM1 run with SERM2 was -0.391. This indicates that the 'contextualist' and 'non achievement' of the benefits of standards-based ERM implementation variables are negatively correlated. This implies that the more decision making is conducted in a contextualised style, the less negativity will be associated with the outcomes of ERM implementation, thus leading to successful ERM implementation over time.

SERM2 was correlated with the variable DM2, which is an indicator of the risk appetite of the respondents. The various options listed under this variable include the belief that high risks are necessary for achievements, enjoyment / excitement associated with risk, preference for taking up those activities where outcomes are driven by chance, the preference to take risks for the achievement of even small goals, and the taking of risks even if a situation is not under one's control Lineley *et al.,* (2013), Rietzschel (2014) and Sirgy *et al.,* (2016). It was

found that the respondents ‘strongly disagreed’ that their risk appetite conformed to these options. The CORREL coefficient of DM2 with SERM2 was 0.855, which indicates a strong, positive correlation with low risk appetite and the failed implementation of ERM. This again corroborates the findings that a low risk appetite at the personal level of the decision maker lowers the chances of successful ERM implementation.

SERM2 was then correlated with the variable DM3, which indicates the contextualist style of decision making. The various options listed under this variable include consultation with colleagues, setting up an internal advisory team, the decision to proceed with the current phase being based on the act of ignoring past losses incurred during a previous phase and focussing on the current target, and making those decisions where the outcomes promise higher profits, albeit at higher risks Adams (2012), Avey *et al.,* (2011), Godin (2015) and Snyder (2014). The contextualist style of decision making was disagreed with by the respondents. The CORREL coefficient of DM3 with SERM2 was 0.731, which indicates a strong, positive correlation between a non-contextualist style of decision making and the failed implementation of ERM. This corroborates the findings that an individualistic, deterministic style of decision making lowers the likelihood of successful ERM implementation.

SERM2 was correlated with the variable LRD2, which indicates the leadership style demonstrated or preferred by the respondents. The various options listed under this variable include a preference for a two-way communication style to facilitate mutual understanding with subordinates, the willingness to delegate control to subordinates and share decision making power with them, participate styles of management and compatibility of the goals of the leader with the goals of his / her followers Maitlis and Lawrence (2007), Kern *et al.,* (2014), Goepel *et al.,* (2014) and Klein (2007). It was found that respondents disagreed with this style of leadership. Hierarchical, authoritarian leadership is preferred by Saudi respondents. The CORREL coefficient of DM3 with SERM2 was 0.344, which indicates a fairly positive correlation between an authoritarian style of leadership and failed ERM implementation. This means that the greater the tendency of leaders to assume an authoritarian attitude towards their subordinates, the lower the likelihood of creating an organisational culture that supports risk and effective ERM implementation.

SERM2 was correlated with the variable LRD4, which indicates the perception of leadership that has been created by respondents amongst their subordinates. The various options listed under this variable indicate the belief that the employees are treated fairly and justly, employees take responsibility for the outcomes of their decisions, employees display

commitment to the organisation, there is a desire amongst subordinates to maintain a relationship with their leaders, there are long lasting bonds between leaders and their subordinates, a reciprocal relationship exists between the two, and there are high levels of employee happiness Lineley *et al.* (2013), Rietzschel (2014) and Sirgy *et al.,* (2016). It was found that the respondents disagreed that these options corresponded to their relationships with their subordinates. This indicates that the leadership style demonstrated by respondents creates employee dissatisfaction. The CORREL coefficient of DM3 with SERM2 was 0.839, which indicates a high positive correlation between employees' dissatisfaction with leadership and the failed implementation of ERM. This means that the greater the level of employee dissatisfaction, the lesser the possibility to achieve successful and effective ERM implementation.

SERM2 was correlated with the variable OC3, which indicates the organisational culture in the organisations headed by the respondents. The various options listed under this variable examined whether the concept of risk was embedded in the mission / vision of the organisations, whether risk was reflected in key performance indicators, whether projects got analysed according to their embedded risks, whether there was alignment between strategic planning and risk management, whether decision making was participative, and whether quantitative techniques of risk evaluation were considered in risk decision making scenarios Maitlis and Lawrence (2007), Kern *et al.,* (2014), Goepel *et al.,* (2014) and Klein (2007). It was found that the respondents disagreed with these options. This indicates an organisational culture where there is no emphasis on risk either in the vision / mission of the organisation or at the strategic / operational levels. The CORREL coefficient of DM3 with SERM2 was 0.722, which indicates a fairly high positive correlation between a lack of emphasis on risk in an organisation and failed implementation of ERM. This means that the less importance accorded to risk within organisational culture, the lesser the possibility of successful and effective ERM implementation.

SERM2 was then correlated with the variable OC6, which further examines the organisational culture in the organisations headed by the respondents. The various options listed under this variable examined whether non-cash flow risks have been considered, whether employee behaviour has been considered in risk management processes, whether mitigation techniques also include qualitative elements, whether regular trainings and workshops are conducted as part of the overall control system, whether there is a method whereby respondents can convey confidential information, whether decision making is

participative, and whether management and the board facilitate open and transparent channels of communication across all organisational levels. It was found that the respondents disagreed with all of these options, indicating an organisational culture where advanced risk management techniques are not incorporated Harzer and Ruch, (2013), Snyder (2014) and Froman (2014). The correlation coefficient for OC6 with SERM2 is 0.643, which indicates a fairly high positive correlation between an organisational culture where there is little to no emphasis on risk management and the failed implementation of ERM. Thus, it becomes less likely that ERM implementation will be successful the less risk is accorded importance within the organisational culture.

Detailed Correlation Analysis – A detailed correlation analysis was conducted by comparing the Pearson's coefficients of the dependent variables as indicated in table 6.3.

Table 6.3. Correlation Matrix

	DM1	DM2	DM3	LRD4	OC3	OC6
DM1	0	0.87655	0.78569	0.65879	0.85475	0.75854
DM2	0.87655	0	0.98745	0.84578	0.75488	0.68745
DM3	0.78569	0.98745	0	0.97851	0.85740	0.88858
LRD4	0.65879	0.84578	0.58743	0	0.68746	0.87453
OC3	0.85475	0.75488	0.98744	0.78564	0	0.78742
OC6	0.75854	0.68745	0.88858	0.87453	0.78742	0

A comparison of the variable DM1 which measures attitude of respondents towards risk and DM2 which is level of risk appetite indicates a Pearson's coefficient of 0.87655. This indicates a highly positive correlation between the two variables. From the analysis in the previous correlation it was found that the respondents in general have a negative perception towards risk. The more the information, time, and resources that respondents have under condition of risk and uncertainty, the less risky the situation is considered to be. Risk is perceived to be a measure of how much expected outcomes deviate from the estimates. Thus the attitude towards risk is one of fear and anxiety and hence the requirement for more data and time / resources to possibly de-risk the situation. Moreover it was also found that the decision making style amongst respondents is very individualistic. There is no willingness to

share the decision making process with others with risk considered wholly in terms of threat / loss and not as an opportunity to be leveraged. This attitude towards risk leads to a low appetite risk as the correlation matrix in table 6.3 indicates. The attitude that risk is something negative and a threat makes the respondents averse to risk and consequently to have a very low risk taking appetitive. A combination of a negative attitude to risk and a low risk appetite which are significantly and positively correlated with each other implies that potentially valuable opportunities are not being leveraged adequately.

An analysis of the Pearson's coefficient of DM1 with the variable DM3 which measures risk control strategies adopted by the organization indicates a value of 0.78569. This indicates a high, positive correlation between negative attitude to risk and the risk control strategy preferred by the respondents. From the previous section it was found that the respondents prefer to counter risk by detailed data analysis, consultations with experts, using past experience and simplifying the decision making process by splitting the entire process into several easily manageable parts. Some of the other risk control strategies indicated by the primary data indicate postponement of decision or not doing anything at all. This is particularly true if the risk is not perceived to be urgent. This corroborates the earlier finding that in Saudi Arabian organizations, there is a high level of risk avoidance behaviour. Decision making is a highly data driven and individualistic process. The negative attitude to risk (DM1) is responsible for adoption of such risk control strategies.

The Pearson's coefficient for the variable DM1 with the employee behaviour / relations variable LRD4 is 0.658789. This is a moderately high and positive correlation between the two variables. From the previous section it was identified that respondents have a very low level of job satisfaction with their organizations, their jobs and their roles. The employees are not committed to their organizations nor do they have strong relationships with the managers. The employee report feelings of being treated unfairly. This indicates that a negative attitude to risk is positively correlated with poor employee relations. The Pearson's coefficient between DM1 and the risk philosophy variable LRD4 at 0.85475 indicates a highly positive correlation. An analysis of the risk philosophy of the organization indicated that risk is not given much importance. The concept of risk is not incorporated into vision / mission statements of the organization. Risk is not considered to be of strategic business importance or incorporated as part of strategic planning activity. The analysis also indicated that the organization does not have a risk management culture in place. It is evident that a negative perception towards risk has also resulted in a low culture of risk being instituted in the

organization. The Pearson's coefficient between DM1 and the risk control mechanism variable OC6 is moderately positive at 0.75854. This indicates that a negative attitude towards risk has led to appropriate risk control mechanisms not being instituted in the organization. This is in accordance with the previous findings whereby respondents pointed out that modern risk control mechanisms have not been incorporated into the functioning of their organizations.

An analysis of the Pearson's coefficients of the risk appetite variable DM2 with DM3, LRD4, OC3 and OC6 are respectively 0.98745, 0.84578, 0.75488, 0.68745 which indicates a high to moderately positive correlation. This indicates that a low risk appetite manifests itself in different ways. It leads to an extremely structured and cautious method of taking decisions under condition of risk and uncertainty. It indicates that poor employee relations with each other and with management has led to an inability to create an appropriate risk culture and with risk not being considered to be an important part of business strategy. The Pearson's coefficient for the variable DM3 compared with that of LRD4, OC3 and OC6 are highly positive at 0.97851, 0.85740 and 0.88858. This indicates that a poor risk control strategy mechanisms is related to poor employee relations, to a company culture that does not consider risk to be of strategic business importance and to a lack of appropriate risk control mechanisms / strategies. Similarly, the Pearson's coefficient for the variables LRD4, OC3 and OC6 in comparison with the other variables as indicated in table 6.3, are all highly positive.

Several inferences may be made from these findings. All the variables considered are positively correlated to each other. Therefore a lack of ability/importance/performance in any one variable is positively and directly correlated to a lack of ability / importance/performance in other variables. For example, a negative perception of risk is directly and positively correlated to low risk appetite, poor relationships amongst employees, lack of leadership ability, to the non – consideration of risk in the overall management philosophy of the organization and the inadequate provisions made for risk management in the company. It also implies that the hierarchical, authoritarian leadership styles followed in private Saudi organizations are responsible for the poor quality of ERM implementations. The styles of leadership which do not share decision making authority with others lower down the organizational hierarchy / subordinates leads to an ineffective ERM implementation. The styles of leadership which merely seeks compliance with decisions that are handed down do not create a sense of ownership or stimulate employees to implement risk management

practices efficiently. It is evident that the leadership style being followed in Saudi organizations is such that there is no voluntary compliance, little motivation or passion. The individualistic style of management may seek compliance but it is something imposed and this manifests itself in employee dissatisfaction levels which are very high. This also indicates the failure of the traditional leadership styles based on dominance, individualism on the part of the leaders and subservience on the part of the subordinates. From the correlation it is also evident that Saudi organizations do not have a supportive culture of risk that is so necessary for the proper implementation of ERM standards. Whilst they have good interpersonal relationships amongst themselves, they do not believe that they are treated justly and fairly. Employees' demonstrated commitment to meeting targets is noted as an issue, which highlights the impact that the aforementioned attitudes have on performance. It is also apparent that the focus of the organizations is more about what tools to implement for ERM implementation rather than developing leadership that can appropriately lead ERM implementation.

It may also be implied that the converse is also true. That where organizations are not risk averse, that have flat rather than hierarchical structures and where power differences between the leaders and lead are not high, ERM programs will get implemented properly such that the objectives of the ERM implementation are achieved. There will be more risk taking appetite for such organizations and better employee relations as well. Creating a risk-based organisational culture that would support the effective implementation of ERM includes the ability to sense and communicate risk, a flat organisational structure, open and transparent communication, and a participatory style of decision making. Risk will be given due strategic business importance and incorporated into the risk philosophy of the organization. This implication matches with the finding from the literature where it was identified that leaders of organizations have the responsibility to not just understand the psychological factors that impact their decision making capability, but to also influence others through the creation of a risk-aware and risk-supporting organisational culture. This would facilitate the psychological perception of a risk-based culture within the organisation. The overall conclusion can be made that effective ERM implementation and risk are not supported within the organisational culture of private organisations in Saudi Arabia

7.9. Conclusion

The quantitative analysis summarises the responses of a close-ended questionnaire administered to 100 professionals from private sector organisations in Saudi Arabia. From the demographic analysis, it was observed that the respondents are well-qualified, well-experienced professionals, working in different sectors in Saudi Arabia, fairly well experienced in risk management and whose organisations had implemented various ERM standards. In the section of decision making under the condition of risk and uncertainty, it was observed that the respondents are extremely risk averse and prefer a style of decision making that is positivist and deterministic. There is an overwhelming dependence on data, analytic software and methods and on the heuristics of experience, availability and familiarity. The participants prefer making decisions by themselves or in consultation with their peers, superiors or with experts from outside their organisations. Preference for hierarchical, authoritarian structure was demonstrated in the section on leadership. In such an organisational structure, there is little if any effort to establish a connection with employees. Decisions are made at the higher levels and are then expected to be obeyed and implemented by subordinates. The organisational culture also does not support risk or create an atmosphere wherein employees work alongside senior management in managing risk. The section on the performance status of ERM also indicated that none of the benefits of ERM have accrued to the majority of the organisations represented in this research. From the correlational analysis, the ways in which decision making styles, attitude towards risk, leadership style and organisational culture were statistically proven to have contributed to the poor implementation of ERM across the various organisations. These findings will be combined with the results of qualitative analysis and explained in connection with the literature review and theoretical framework in Chapter 8.

Chapter 8 – Discussion

8.1 Introduction

This chapter begins with a summary of the findings from the literature review along with the qualitative and quantitative reviews. The key findings will be identified and explained in greater detail through the use of supporting research. The purpose of this chapter is to examine the perception of threat as evidenced by the respondents, the decision-making processes of leaders under the condition of risk and uncertainty, the bias that impacts decision making, leadership style, the impact of leadership style on organisational culture, and the impact of leadership on ERM implementation. The overall goal of this analysis will be to provide recommendations on how leaders should make decisions and develop an organisational culture that features a strong risk appetite / risk tolerance, which will lead to the effective implementation of ERM.

8.2 The psychology of the perception of risk

In Section 7.2 of Chapter 7, it was ascertained that organisations in Saudi Arabia have to contend with a variety of risks that go beyond financial risks or risks from natural hazards alone. These risks include slowdowns in the Saudi economy as a result of the drop in oil prices as well as oil and gas price fluctuations, the need for regulatory compliance on environmental / pollution issues, interruption in business, increased competition, labour problems, and cash flow / liquidity problems. In this scenario, it is necessary to understand how respondents psychologically perceive risk, as risk perception is the precursor to decision-making behaviour. According to Byrne (2005), risk perception is a subjective process through which individuals asses the uncertainty associated with a particular situation.

Olsen (2004) points out that risk perception refers to the way in which individuals make use of sensory data to arrive at judgements, and this is impacted by the expertise levels and previous experiences of the individual. This is in accordance with the findings of both the qualitative and quantitative studies, wherein ERM implementation has been found to be motivated by the perception of risk posed by uncertainties in the Saudi business environment. The respondents were evaluated from the perspective of how their perceptions or feelings towards risk, with the questionnaire examining these viewpoints based on evaluation of a risky event, knowledge, and information acquired from the environment. The broad conclusion that may be reached based on the responses is that the respondents perceived risk to be a ‘threat’, with ERM framework standards being employed to counter said threat. It is this simplistic perception of risk as a threat that defines all subsequent leadership behaviour

for the majority of the respondents in the quantitative survey. This may be explained in terms of risks being conventionally viewed as a hazard. It is apparent that the value systems that guide individuals, groups and institutions in Saudi Arabia interpret risk purely in terms of hazard / danger / damage / catastrophe / harm / injury, and so on, which is why the respondents considered risk entirely under the perspective of a threat with outcomes of such occurrences known always to be unpleasant. Even the literature on risk invariably focuses on the concept of the losses inherent in risk, measured in terms of the quantity of loss, loss potential and loss exposure. It is evident that these factors have resulted in risk being viewed as something negative and something that should be avoided.

However, the literature also indicates risk perception to be a far more complex phenomenon. According to Bauer (1960), perceived risk refers to the risk the individual believes exists with respect to a particular situation, whether the risk actually exists or not. Risk involves uncertain consequences that arise from actions undertaken by the individual that cannot be anticipated in advance. Gronhaug (1993) points out that individual often focus only on the potentially negative consequences of risk. That is, the outcomes of actions taken are invariably considered to be unpleasant. MacGregor *et al.* (2000) corroborate this view by stating that risk is often associated with downsides, lower than target returns and / or the chances of big losses. According to Tarpey and Peter (1975), this negative perception of risk extends to the financial, product characteristics, societal, physiological, physiological, time, and cost and convenience aspects of the particular situation. Nevertheless, risk cannot be minimised in terms of considering it only as a threat. Risk is, in fact, also comprehended in terms of opportunity, possible gains and higher returns, as evidenced in the qualitative analysis. It is this perspective of risk that should be also considered in order to gain a well-rounded understanding of a risky situation so as to prepare adequately for it.

It was noted that the perception of risk as nothing more than a threat has become the risk perception trend amongst the majority of private Saudi organisations, particularly given the complexity involved in the risk phenomenon. According to MacGregor *et al.* (1999), the risk surrounding a specific activity is misperceived due to a lack of information or due to misinformation. Without accurate data, in the case of misinformation, this incorrect perception of risk leads to faulty judgement and the wrong decision-making processes. Olsen and Cox (2001) further point out that a person may possess multiple views of risk depending on a host of factors. Risk perception is essentially a subjective activity, causal and directed in that the subsequent behaviour of the individual is depended on it. Adams and Finn (2006)

point out that risk perception is also relative and never absolute, thus, nor can judgements and decisions that are made based on risk. That is, there is no judgement that may be taken that absolutely negates risk and results in a 'zero risk' or 'zero uncertainty' situation. The subjectivity and relativity associated with risk accounts for why the same situation may be perceived as a major situation of risk by some individuals and a minor one by others.

The data gathered from the respondents indicate various factors that impact risk perception. These include heuristics / biases such as availability, overconfidence, past experience, perception of higher losses, situational characteristics of the risk situation, fear of negative outcomes, association of the outcome with the source of the risk, social amplification of the risk, reference groups, feelings, values, attitudes, culture factors, group behaviour and personal experience or familiarity. This means that because different individuals have different experiences with risk, perception will inevitably depend on past experience, situations and activities associated with that risk. It was also found that the respondents' perceived risk based only on a few salient components of the risky situation. For example, the slump in demand for drilling lubricants was related only to decrease in demand and not to the larger risk posed by alternate fuel sources. This corroborates the finding of Bazerman (2005) that individuals can only process a small number of factors or pieces of information at any point in time, and that they arrive at judgements and decisions pertaining to the whole event or situation based on this limited perception. Dreman (2004) attributes this to the natural tendency of all humans to process new situations by matching them to data that are already known or situations that have occurred earlier.

However, the danger of using past experience alone to judge risk is that the individual will only perceive the familiar aspects or stimuli of a particular situation of risk, whilst ignoring other stimuli that may have more bearing on the riskiness of that particular situation. Erroneous perceptions of risk situations can occur if stimuli that is not real, accurate or authentic is recorded as being familiar. What the individual perceives as a threat may not really be a situation that negatively impacts the organization. Given that perception results in an individual making sense of reality and arriving at a particular understanding, or opinion, this method of perceiving risk can result in erroneous interpretations about the reality of a risky situation.

According to Eaton (2000), perception leading to interpretation is the precursor to decision making. Because the perception of an event is subjective, different persons can arrive at

different decisions or have differing views / opinions / interpretations. This in effect means that an individual perception of risk may not necessarily be the correct one. This has implications for this research given that most of the respondents indicated a preference for an individualistic style of decision making. Here, a direct line of truth may be assumed by each individual, who will have only one point of view based on his or her perspective of the event. Rundmo (2002) points out that result in judgements or interpretations that cannot be verified and are, in fact heavily, value laden. The inference here is that not only is there a strong likelihood of a highly individualistic style of risk perception being wrong, the decisions based on such perceptions may also be erroneous.

It may be concluded that risk perception is of considerably greater significance in decision-making processes than the actual risk itself. Because risk is a subjective and complex phenomenon, it cannot be reduced to a statistical probability, an objective number, or viewed from a purely behavioural perspective. Rather, every risky situation or event should be viewed from an interdisciplinary, multidimensional perspective. Moreover, because risk is perceived differently, taking a singular, individualistic view of risk is undesirable. Rather, many perspectives should be taken into consideration and verified so that a consistent set of facts may be created from the multiple views that can then form the basis of a more objective decision-making process. The way in which risk perception is translated into decision-making and risk behaviour is illustrated in Figure 8-1, below.

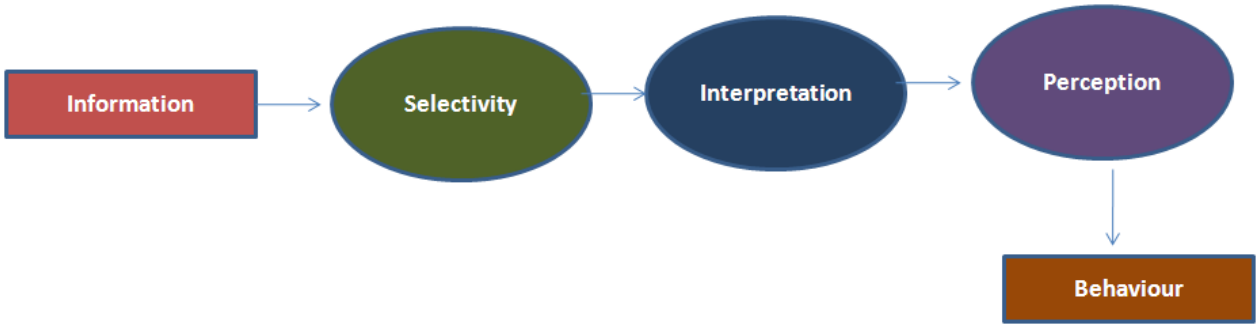

Figure 8-1 Translating Risk Perception into Decision making

Source: Researcher

As illustrated in the above chart, the first stage in the process of risk perception is external information inputs, of which there are two: data and past experience. Not all of these inputs are initially perceived by the individual. The principle of selectivity ensures that only specific data inputs are perceived by the individual. This is one of the ways in which the individual sifts through large amounts of information to focus on what interests them. This is also based

on the limits of human cognition, which can only detect a small number of stimuli at any single point in time. Other stimuli are only dimly perceived, or the individual may be completely oblivious to them. The risk associated with this process is that the individual may unconsciously perceive the situation of risk to contain positive outcomes, which it may not necessarily contain. Similarly, even if it may not be the case, risk situations are perceived only in terms of threat, as in the case of the respondents interviewed as part of the quantitative survey. The individual may ascribe a higher likelihood of a positive outcome happening if that outcome is what he / she particularly desires or wants. According to Litterer (1965), the danger of forming decisions based on initial perception is that selectivity occurs unconsciously and involuntarily. In this scenario, the individual may not be making an optimal or desirable choice / option, or may only decide upon a course of action because it is the only feasible one at that point in time, or that is occurring in those circumstances given the constraints of lack in data, time or resources.

It is because of the above point that the most important stage of risk perception is interpretation. Kast and Rosenzweig (1970) point out that during the interpretation stage; the risk situation gets perceived and interpreted differently by different persons. Each person brings to the interpretation his or her own past experiences, data and values. This highlights the importance of a group-based interpretation of risk perception rather than an individualistic perception. The process of interpretation allows for the decoding of several stimuli, as each person will perceive different stimuli from the same situation. This results in a more holistic or complete perception of the complete situation of risk. Ultimately, the decision maker is provided with more information than is visible to him or her alone from the situation of risk and there are greater chances of a more optimal decision (behaviour) from being made. Section 2.2.1 of the literature review discussed the mental protective frames that are adopted by individuals under the condition of risk. There are three possible mental frames that every individual may adopt when there is a perception of threat. At one extreme is the heightened perception of risk and trauma, associated with feelings of fear, anxiety and worry and leads the person to adopt a mental protective frame of risk avoidance. At the other extreme is the frame of confidence, where a situation of risk creates feelings of excitement that causes the person to engage in even greater risk. The detachment zone, which allows the individual to perceive the risky situation objectively and without the influence of emotion, represents the midway point between the above two frames of mind. An individual operating in this frame does not feel threatened, nor is he or she unduly excited. It is this frame that Barnabei (2008)

associates with being optimal for evaluating risk since it eliminates the subjectivity associated with the other two frames. The implication for this research is that leaders should learn to operate in the detachment zone if they are to achieve an accurate perception of the reality of the risk associated with a particular risky situation or event.

8.3 Psychology of decision making under the condition of risk and uncertainty

The qualitative analysis of ABC organisation indicated two broad styles of decision making. The positivist style is deterministic, and may be identified by the key themes of data that is 'accurate, concrete and factual', to have 'all the information possible that is required to make a decision', to have 'technical knowledge' of data and information processing systems, and to use knowledge acquired across a lifetime of experience in order to build a 'correct risk profile'. Even when decision making is to be done, it is with respect to risks that are 'knowable'.

Risks that are unknown are ignored, or decision making is deferred. The quantitative analysis highlights a similar trend amongst participants, with most making decisions based on positivist principles. The 100 respondents from different organisations in Saudi Arabia prefer to make decisions when they have 'more data available pertaining to the decision to be made', they are better able to 'quantitatively analyse outcomes of decisions', and the more 'control they have in a particular situation of risk', and the 'more time and computational resources' they have to make a decision. The positivist style of decision making is highly individualistic, the perception that risk is essentially a threat and characterised by risk averse decision-making styles.

An analysis of the above themes in section 6.4.2 indicates that the positivist style of decision making matches fairly closely with classical theories of decision making. The preferred option for decision making is to gather as much data as possible, split decisions into smaller alternatives, compare these alternatives, consult with domain experts and use technical and statistical software and tools for the quantification of risks in order to arrive at a decision (Godin, 2015). This decision making process, which the majority of the respondents demonstrated, is in line with the six steps recommended by Robbins (2005) and correspond to the rational decision making model. These include: (i) the identification and definition of the problem, with inconsistencies noted between the current and desired situations; (ii) the identification of decision criteria that will solve the problem and not henceforth consider any criteria not identified at this stage; (iii) weighing the identified criteria and according them priority or precedence in order to solve the problem; (iv) identification alternative solutions to

the problem, with options listed rather than critically appraised; (v) critical analysis of each of the alternatives against pre-identified criteria, which is weighed against the strengths and weaknesses and various features of each alternative, whilst weighted in points (ii) and (iii); (vi) evaluating alternatives against weighted criterion and using a high total score system to select the most appropriate one. The ultimate goal of this process is to make optimal, effective and good decisions. According to Mills *et al.,* (2013) only rational decisions are optimal ones. Rational decisions are those which help an organisation to achieve its goals. The corollary to this is that decisions that do not achieve organisational objectives are considered irrational and inappropriate decisions.

It would appear that the rational decision-making model is the one recommended for leaders to assume in risky situations and for the effective implementation of ERM. Certainly, the majority of respondents indicate a preference for rational decision making models and processes, as this mitigates the loss or threat inherent in decision making outcomes. There is nothing inherently wrong in depending on data, information and technical analysis to arrive at decisions. However, the literature on rational decision-making models indicates several flawed assumptions, and it is to these flawed assumptions that maybe attributed to the failure of standards-based ERM processes in Saudi Arabia.

Glaser and Stone (2008) point out that the rational model of decision making assumes that managers make optimal decisions since they always behave in the best interests of the organisation. The decision maker is assumed to be rational at all times and consistently makes value–maximising decisions. Macintyre (2001) states that according to classical models of decision making, individuals operate within a set of circumstances that are clearly known: all possible choices and their consequences are perfectly known and this helps in choosing the optimal solution. Furthermore, the theory of rational decision making assume that managers act in such a way that they maximise their own interests, they are unbiased when making decisions, they are motivated to maximise wealthy, and they always make rational decisions (Milton, 2014).

According to Luthans and Youssef (2013) because individuals act to maximise their own self-interest, there can be no wrong decisions made. Moreover, rational decision making models recommend use of well-defined judgment making processes, and an in-depth search and analysis of information and alternatives. The assumption is that the individual possesses the skills and competencies to make predictions, consider all possible issues when making judgements, and possesses unlimited computational prowess. Bias is not present at the point of decision making. Under this model, the individual will not choose alternatives that are not

presented, nor take into account unknown information. Mahsud *et al.,* (2012) identify the key behavioural characteristics of a rationalist decision maker, which are: (i) self-interested behaviour; (ii) the mental ability to make rational choices at all times; and (iii) an individualistic style of decision making. According to Linley *et al.,* (2013), rationalists are cautious individuals who apply systematic, logical thought processes alongside conventional / historical models in order to evaluate a situation and make decisions.

The implication of the rational decision models is that risks are always clear, transparent and unambiguous and the decision maker has all the information required about the risk to make a decision. All relevant criteria can be identified along with different alternatives, with decision makers being fully aware of the consequences of each decision. Robbins (2005) points out that rational model assume that it is possible to rank and weigh decision criteria and alternatives that indicate their importance. The weight assigned to the criteria is constant over a certain period of time because the criteria themselves are constant. Paredes (2003) points out that risk, according to the rational models, is considered in terms of a variation of different outcomes that can occur, the likelihood of their occurrence, and a subjective value assigned to each outcome. Risk is something that can be quantified in terms of non-linearity against purported value for money, or by variances in gains and losses attached to different alternatives. It is assumed that are no constraints with regard to time, cost, and information / data availability. The individual thus operates in an environment of perfect certainty. All of this helps the individual to choose those alternatives that carry the highest weight in terms of value. All of these match with the decision making style of the positivist respondents.

The analysis of respondents' views indicates that the rational / positivist style is preferred amongst decision makers in Saudi Arabian private organisations. However, the criticism of the assumptions of the rational decision models seems to imply that this method is not the optimal choice for making decisions under the condition of risk and uncertainty. Ganter and Hecker (2013) point out that in reality, humans are not rational beings, and this fact undermines the main hypotheses of rationality.

According to Herbert (1982), the notion of a perfect rationality leading to decisions that are flawless, accurate and result in maximum gains is not practically feasible and does not occur in real life situations. This is because all decision makers, regardless of their individual skills and capabilities, operate under three constricting circumstances: (i) restricted, inaccurate and unreliable data regarding alternatives and associated gains and losses; (ii) restrictions of the human brain to assess and comprehend data; and (iii) restricted resources in terms of time, cost and computational power. This means that human beings simply do not, in fact, behave

rationally at all times. According to Simon (1982), actual human behaviour deviates from perfectly rational behaviour in at least three of the theory's assumptions. Firstly, rationality presupposes perfect knowledge. In actual fact, such a state of perfect knowledge does not happen, since knowledge is invariably fragmented. Secondly, rationality presupposes perfect knowledge of the outcomes or consequences of a decision. However, in reality, consequences can only be imagined or anticipated. Thirdly, rationality requires that a choice be made from all possible alternatives, whereas only a few of these alternatives ever come to mind at any point in time in reality. In addition, Simon (1982) criticised the rational model for ignoring circumstances, personal limitations and restrictions of time, resources and cognitive capacity. The argument that the majority of decisions are, in fact, not rational can be seen in reports of a mediocre 50% success rate in rational decision making models (Syagga, 2012) and the finding that up to 82% of businesses never make it to a decade in operation (Baragoin *et al.*, 2010).

According to Faust (1984), decision makers suffer from poor judgement abilities and cognitive limitations. Because of this, they frequently make errors in judgement, with a restricted ability to process complex data and make decisions. Schick *et al.* (1990) indicate that the availability of information and analytical / computational power does not pre-suppose optimal decision making. Decisions makers can be overwhelmed by the sheer volume of information available for decision making (Thaler, 2000). This is the result of the impact of the advances in information technology and the Internet in the modern era, which results in information overload. Information overload occurs when demands for data processing and calculations exceed the time available for the individual fulfil these demands. According to Schick *et al.* (1990), information overload can in fact result in sub-optimal decisions being made. When faced with complicated decision-making processes involving lots of data, individuals simplify the decision-making process by adopting strategies that require less mental effort but result in less accurate decisions. According to Coleman (2006), making a decision under the condition of risk often involves choosing those alternatives most convenient to the individual or that cost less to make. This can depend on intuition or the mood / circumstances that occur at the time choices are being made.

It may be inferred that whilst the rational decision-making model may be preferred theoretically, in practice it is very difficult, if not impossible, to follow. The links between the failure of a standards based risk management system like ERM in the majority of Saudi Arabian Organisations, and erroneous decision-making processes may be discerned and linked to a decision-making style that is highly individualistic, with an overwhelming

dependence on data and information processing systems. Whilst the importance of information and of technological methods of decision making cannot be belittled, the reality is that rational and logical processes of decision making fall short of goal achievement, and there is an urgent need for a more realistic and holistic approach to be taken to decision making under the condition of risk and uncertainty. The unrealistic assumptions of the rational decision making model are summarised by Skubic and McGoun (2002), who state that for a model that focuses so much on individual choices, it is surprising how little attention is paid to the individual him/herself. Thus, the implication is that if decision making frameworks are to be more practical and realistic, they should take human factors into account instead of focusing on examining decision making solely at mind-level.

A more realistic approach to decision making has been proposed by Herbert (1950), who stated that whilst managers intend to make rational decisions at all times, they encounter several restrictions that result in them unintentionally forming sub–optimal or even irrational decisions. Herbert believed that managerial capacity to make rational decisions is restricted or "bounded" by these various restrictions. That is, whilst managers indeed attempt to make rational choices, they are prevented from doing so by several impediments. The total sum of every restriction that exists within the environment of the manager 'limit' and 'bound' the rationality demonstrated by that manager. In this situation, managers use a "satisficing" process to make decisions, as they select an alternative or decision that satisfies them even if only temporarily depending on the bounds or restrictions operating in their environment at that point in time. The advantage of the notion of bounded rationality is that it considers the reality of the psychology of the human being who has to make decisions and the psychological aspects that go into the judgment process.

The concept of bounded rationality that takes into account the reality of human psychology has given rise to the behavioural model of decision making. This model recognises that individuals lack skill, expertise and resources to develop the most optimal solutions to various problems. In this context, Shefrin (2000) recommends the acceptance of a satisfactory alternative rather than the most optimal choice. This reflects Herbert's (1950) "satisficing" notion. In essence, this refers to a process whereby gains are maximised and losses minimised. This method is recommended for choosing from a host of alternatives when the outcomes / consequences ahead are unknown. Gigerenzer and Todd (1999) state that satisficing is a practical method of decision making as it sets a more practical level of aspiration, ending the search for choices as soon as one is found that exceeds the level of aspiration of the decision maker. Because the behavioural models acknowledge limitations of

human cognitive processes, it is also more practical with regards to decision making in relation to situations of risk characterised by situations where problems are not defined and where the outcomes and potential consequences of a decision cannot be made out in advance.

An examination of the responses of the contextualist respondents in the qualitative analysis indicates that their method of decision making matches fairly closely with the behavioural approach or model of decision making. Whilst contextualists do not discount the importance of data and technology in the decision-making process, they acknowledge the limitations of the individual in making optimal decisions. The key themes emerging from the contextualist method of decision making is one of managing diversity and pooling together views, opinions, skills and talents in order to construct a reality of risk which in turn impacts the decisions that will be taken. Whilst the concept of 'satisficing' has not been explicitly stated as a decision-making style, it is implied in that contextualists adopt a group approach, pooling together various opinions and decisions to select the one they feel will best counter the situation of risk.

The broad recommendation that may be made here is that it is the contextualist style of decision making that should be employed by leaders at times of risk and uncertainty. The decision making style should be influenced by a group approach towards decision making as opposed to the self-driven, individualistic decision-making modes of rationalists. Decision making should not be taken in isolation but, instead, leaders should communicate and consult with others and seek their support in the achievement of goals. The contextualist style of decision making does not discount the importance of data, but human factors are considered. It is the acknowledgement of constraints and limitations that operate at the individual level at times of risk that necessitates the need to make decisions at the group level. Because these decisions are taken under the condition of uncertainty, their outcomes cannot be wholly known. However, this does not preclude the most satisficing option from being chosen. That is, decision makers will have to make satisficing choices rather than maximising or optimising ones in situations of risk. What should be examined is the factors that prevent the satisficing choice from being made.

8.4 Analysis of factors impacting decision making

Section 2.3.3 of chapter 2 indicated that heuristics is the main factor impacting decision making under the condition of risk. From the qualitative review, other impacting factors are seen to include gender, culture, personality and emotion as discussed in section 2.3 of chapter 2. This section of the thesis explores these factors in further detail.

8.4.1 Heuristics

That heuristics impact decision-making is apparent not only in the literature but also in the qualitative and quantitative analysis. From the literature, it was identified that because human cognitive processes are limited, heuristics or approximate methods/processes are used to make sense of and understand complex situations. Heuristics are non–rational decision-making processes (Workman, 2012). They are rules of thumb and do not refer to specific or formal rules of decision making. Their use avoids the need for too much cognitive effort and this account for their ubiquity amongst all of the respondents. Khaneman (2012) explains the psychology of heuristics as a three stage process occurring in the brain. In the first stage, the essential elements of the situation of risk are examined. Here, the details are not examined. The mind only takes cognisance of the threat posed by the risk. During the second stage, the brain compares the situation of risk with previously experienced stressful situations. It is during this stage that heuristics operate in order to provide a clearer and more detailed picture of the situation. The third stage is the decision making stage, where a conscious decision about the situation is made based on heuristics.

The qualitative and quantitative analysis indicated that heuristics are used by all of the respondents involved in this study. This seems to indicate that heuristics is a necessary, almost inevitable, part of the decision making process. The literature also supports this supposition. Kahneman (2011), for instance, indicates the heuristics are a phenomenon that all human beings are impacted by. French *et al.* (2002) add that heuristics have always been used in situations requiring quick decision-making, where more than the accuracy of decision outcomes, it is the cost of delay that poses a greater threat. Monga *et al.* (2011) suggest that heuristics come to the aid of decision makers in an environment where perfect information is never available. Hess *et al.* (2012) assert that heuristics are used in times of threat, or when individuals are under pressure, as they help to tackle the situation quickly, restore mental balance and create a sense of psychological satisfaction. Hayes *et al.* (2003) point out that situations of risk create stress in the mind that pre-empts logical or rational thought. In such a scenario, recourse to heuristics becomes inevitable in order to solve the issue / problem.

Even though the use of heuristics seems to be a given when it comes to decision making, there is a need to investigate whether they are desirable or undesirable factors, and whether their use prevents an optimal decision from being made. The literature indicates that heuristics are in fact an undesirable factor in decision making processes. According to Workman (2012), heuristics are informal strategies of decision making that do not work all of the time, even though they may work most of the time. They are not guaranteed to yield

correct decisions every time. Coplan *et al.,* (2013) indicated that heuristics are similar to 'guesswork' and hence result in distortions, inaccuracies and omissions. Bhatnager (2012) indicated the heuristics resulted in errors in decision making. Various other disadvantages associated with heuristics are discussed in Section 2.2.3 of the literature review, where 15 different heuristics were identified. However, an analysis of the quantitative and qualitative analysis indicates three main types of heuristics that are used by the respondents: representation, availability and anchoring.

According to Monga *et al.* (2011) representation heuristics are used when a decision has to be taken regarding the probability of an event happening. Sinclair and Askhanasy (2002) indicate that decisions regarding a particular situation are made on the basis of how representative the situation is of similar situations. In the case of this research, it is apparent that the heuristic of representation is extensively used, even by positivist respondents. This is shown in the recurring themes 'resemblance of the risk event to other similar events', 'similar attributes' and 'familiar with' that appear frequently in the qualitative analysis. In the quantitative analysis, respondents strongly agreed that they would take into account the similarities / differences between this decision and preceding ones. Monga *et al.,* (2011) points out that the danger of using representation to make decisions is that erroneous assumptions are made as to how a particular situation fits in with a pre-set representation of a category. This is similar to stereotyping and can result in errors in decision that are the outcomes of generalisation of a particular situation. Due to this error, a situation that may never occur will be prepared for, or a situation may occur for which no preparation has been previously made.

Anchoring is another heuristic that frequently appears in the responses in both qualitative and quantitative reviews. From the literature, it was identified that anchoring refers to decisions that are made on the basis of initial information or first impressions made earlier. Such information or impressions serve to regulate successive decision making processes. The influence of the anchor is dependent on the type of initial information and on the magnitude of the impression on the decision maker. These themes recur frequently in the qualitative analysis as 'past events or trends', 'first impressions', 'statistical numbers', 'rough estimations'. In the case of quantitative analysis, respondents strongly agree that they would 'consider a decision based on previous decisions'. According to Robbins (2005), the danger of the anchoring heuristic is that the mind accords a disproportionate amount of importance or prominence to the primary information that forms the anchor. Such initial information and first impressions continue to have an impact and have undue influence above and beyond the

subsequent information received afterwards. Workman (2012) suggests that the anchoring heuristic creates a reference point that is highly subjective and may result in too much focus on one or fewer aspects regarding a particular situation over and above other more important aspects that may subsequently be revealed. It may also be that individuals continue to make decisions based on an original plan or anchor, even when it is proven that such a plan will not succeed.

The heuristic of availability represents the tendency to make decisions based on data that is readily available to the individuals. It can also refer to the tendency to make decisions based on events or emotions that are very vivid, or have occurred recently. All of these are indicated by themes such as 'in recent memory', 'clearly remember', 'well-publicised', 'recent', 'readily available data' and 'caused feeling' that occur in the qualitative research and in the strong agreement respondents in the quantitative survey have indicated for options such as the more data available to you that pertains to the decision and the more the familiarity / skill you have to deal with a particular situation. According to Robbins (2005), the danger of the heuristic of availability is that individuals tend to overestimate unlikely events, or more weight is given to recent occurrences in determining a particular decision compared to past events that may have a greater bearing on the decision making situation.

It may be inferred that heuristics are undesirable factors that cause erroneous decisions to be made. Monga *et al.* (2011) corroborate this, stating that heuristics lead individuals to overestimate or underestimate the consequences of their decisions, the risk itself, or the probability of success. Coplan *et al.,* (2013) indicates that heuristics lead to less valid judgements. Hess *et al.* (2012) highlight the sensitivity, importance and true value of decision making by stating that it is a process used to counter any form of risk or situation. If the decision-making processes itself is faulty, the outcomes can be potentially disastrous for the entire organisation as well as for its employees. Workman (2012) indicates that heuristics lead key decision makers to make sub-optimal business decisions, or even lead them to become indecisive. This is especially true when they are faced with problems or situations where there may be several subjective views surrounding a particular situation. Cohrs *et al.,* (2013) indicates that heuristics lead to the diffusion of information clues that do not result in precise decisions being made. They do not lead to a comprehensive consideration of all the aspects of a particular situation, but are more sensitive only to specific aspects. To this extent, they run the risk of conveying limited information and generating inaccurate outcomes.

8.4.2 Emotion / Gender / Culture / Personality

Heuristics are a factor that have been explicitly discussed in the literature as impacting the decision making process under the condition of risk and uncertainty, and their role is validated by the responses in the qualitative and quantitative analyses. The qualitative analysis has identified unique information on the role of personality, culture, gender, emotion and various other factors in decision making. From the qualitative analysis, four major feelings were found to impact decision making situations: achievement, approach, resignation and antagonism. 'Achievement' and 'approach' are feelings associated with positive qualities, whilst 'resignation' and 'antagonistic' are feelings associated with negative qualities. In general, it was observed that positive feelings result in a greater willingness amongst respondents to engage with the risk. Negative feelings result in risk-averse behaviour. The broad conclusion that may be arrived at is that in situations of risk, feelings assume importance as individuals make judgements based on what feels right to them. However, this may result in sub-optimal decisions being made, and the recommendation is that leaders should be aware of this and of situations where decisions are being made on the basis of emotions.

Another factor found to impact decision making, especially in the Saudi Arabian context, is gender. Whilst there were no differences identified with respect to intellectual capacity, cognitive reasoning processes or intellectual capacity between male and female respondents, in general a higher level of risk averseness was found amongst the female respondents compared to the males. The differences in the decision making processes would be more attributable to behavioural styles or to the different social roles men and women play in Saudi society.

This research takes the view that in terms of the ERM context and organisations operating in Saudi Arabia, gender plays a decisive role in this situation, and this assertion is made given the considerable variance in attitudes towards risk and decision making behaviour. A female leader would be considerably more risk averse than a male leader in Saudi Arabian organisations. This is not to suggest that females should be excluded from the decision making processes in private organisations in Saudi Arabia, but steps should be taken to break down cultural barriers that prevent female participation in decision making processes. Their intellectual capacity should be leveraged in order to make the entire decision making process more effective under the condition of risk and uncertainty.

The respondents come from a culture that has low tolerance for uncertainty and ambiguity, a high tolerance for hierarchy, that places value on the community over the individual and are more masculine than feminine in their worldviews. According to Mihet (2012) all of these characteristics point to a low risk taking or even a risk averse culture. This view is corroborated by the findings from the respondents who all state their preference for a more guarded approach to risky situations.

With regards to personality, the implication from the respondents' views is that leaders with open and extraverted personality types are more likely to take on the responsibility of risk-based decision making, whilst those who display neuroticism, agreeableness and conscientiousness tend to prefer not to make any decisions with potentially negative outcomes, and/or to just avoid the risky situation altogether.

8.5 Leadership style

The literature review indicated in Section 2.3 that the traditional concept of leadership is that of a frontal person who somehow stands out as being different from the common masses. The leader is a highly differentiated individual who leads his followers in a master/slave dynamic. The literature review also indicated that this conventional notion of leadership has been challenged, and in the new psychology of leadership, the leader leads his followers by becoming one of them. This 'other'-centricity of the new psychology of leadership has also been indicated in the qualitative review, where a 'participative' style of leadership was found to be most important for the effective implementation of ERM. In the quantitative review, the respondents indicated that leadership in most private Saudi organisations is authoritative, with organisations structured in a pyramidal hierarchy wherein there is little participation from subordinates in decision making and ERM implementation. From the quantitative review, it was also identified that this style of leadership was highly correlated with the failed implementation of ERM. In this scenario, it may be concluded that the old paradigms of leadership need to be redefined in terms of the new psychology of leadership, and this section will discuss what this shift consists of.

The first implication of the new psychology of leadership regards that of the team leader. Here, Belbin's (1993) work, which highlights the importance and relevance of team leadership, is relevant. According to Belbin, that working as a team was important as each person brought his / her own variations in style and contribution. This was found to enhance the potential strength of the team, resulting in greater balance compared to entities headed by highly individualistic leaders. Teams gained complementary behaviours with weaknesses

often getting cancelled out and strengths being pooled in. The potential weakness that every individual brings to the team is the price that should be paid for the overall pooling of collective strengths. According to Belbin, there is no ideal individual who can perform all roles, and from these findings the concepts of individualistic/solo and team leaders may be developed. Solo leaders do not admit that they have weaknesses, and they behave as if they have none. It is this type of leader who fits in with the conventional notion of leadership as someone who can take up any role and assume any kind of responsibility.

This is not to suggest that these leaders do not have any value in an organisation, as such leadership can lead to the overcoming of barriers and urgent decisions may be quickly made with minimal to no delay. However, the complexities and risks posed by the modern workplace have made the solo style of leadership obsolete and indeed present more problems. It would seem that team leadership is better suited to the risk management requirements of modern organisations. An analysis of the key differences between solo and team leaders in comparison with the findings of the literature review of the new psychology of leadership underscore the importance of team leadership versus the more individualist style of leadership.

Belbin (1993) observed the individualistic leader playing an unlimited role, interfering with everybody and everything. Team leaders adopt a strategy of role delegation wherever possible. Individualistic leaders strive for uniformity and homogeneity. They do not allow or tolerate diversity of opinions. On the other hand, team leadership leverages diversity to value the differences between individuals. The individualist style of leadership was found to attract admirers and sycophants, whilst team leaders are not threatened by subordinates who possess great talent and capability. Individualist leaders direct their subordinates with the latter taking their lead from the leader. However, team leaders encourage the growth of personal strengths and capabilities at all times. Solo leaders spell out exactly what needs to be done and demand compliance with these instructions. However, team leaders create a mission and vision, and they expect subordinates to act on these broad guidelines as they see fit.

A comparison of these findings against the literature review corroborates the argument that team leaders are more suited to risk management than solo leaders. In a world characterised by greater uncertainties and rapid changes, no individual has all of the answers to all of the problems and risks. Team leadership facilitates strength development and reduces the impact of allowable weaknesses. Such leadership facilitates a more holistic and participative style of leadership, including teamwork, problem solving and innovation - all of which may be used to counter risk. This finding has key significance in the context of the board of directors due

to the very nature of the board, which mandates that its members work as a team and not as individuals. According to Adams (2012) the board is a collective group of directors that has to perform tasks relevant to the larger organisation, with members who share common goals, interact socially, perform interdependent tasks, manage boundaries and work in the context of an organisation that is a large, broad, social entity. Such a conceptualisation of a board seems to reinforce the notion of the team in the context of the board. By working to perform several control- and service-related tasks that are relevant to the organisation, the board works to fulfil a broad and collective goal, which is to protect existing value and maximise future value for shareholders. As Gabrielsson *et al.* (2007) point out there is no single board member who is more likely to possess all the skills, abilities and knowledge who can bring all of the aforementioned tasks to fruition. Such tasks can be performed only by a highly interdependent team, hence the concept of shared leadership with regards to the board, where board members should behave and act as a team not only with executive committee members but also with each other. In doing so, they can leverage the individual and unique competencies that they bring to the boardroom, leading to the more efficient use of resources and skills within the group, resulting in better performance and enhanced levels of board control.

Another aspect of the new psychology of leadership is that the leader should also serve in order to become a team leader. This implies that the leader should not just lead but also possess the capability to follow. In effect, the master should take on the role of servant, at times. According to Gatto (2015) leaders should be motivated by a desired to serve rather than only to lead. Gatto (2015) points out that this desire to serve is the best antidote to failings commonly attributed to leaders, including self-aggrandisement and the drive to acquire more power and wealth. By taking care of other people's priorities, leadership automatically follows. The critical aspects of 'leading through following' are discussed in the literature. According to Hsiao and Chang (2015), leaders should ask questions rather than just provide instructions or answers. By asking questions, they create an atmosphere whereby collective views are pooled from several others. Leaders also provide opportunities for others to lead, especially for those who possess exceptional skills and qualities. Leaders should be seen to actually work and make a contribution to the issue at hand rather than just provide instructions. Instead of playing the role of a centralised switch for the management of decisions, leaders encourage team members to follow each other, this results in enhanced collaboration and less conflict. Michel and Neuman (2014) point out that leaders should build a common understanding and agreement rather than just a consensus. This is achieved by

ensuring a complete and comprehensive understanding of all aspects or facets of a given problem or disagreement, creating mutual understanding and establishing cogent, easily understandable goals, purposes and visions.

Northouse (2015) also highlights the circumstances under which leaders should become followers. Whenever there are individuals who display superior experience, skills, capacity and judgement and where ethical behaviour demands more investment in skilling that individual, the leader should become a follower. The leader should follow the team if the achievement of team goals demands it, where the team as a whole should build skills and confidence, and where the working approach of the team demands real contributions. Leaders also become followers if the purpose and the objectives of the organisation require it, where there is a need to expand leadership to others in the organisation, or when the vision / mission of the organisation indicates that leaders should do so. Both the literature and the qualitative review outlined several models of leadership. Of these, it was found that the transactional and transformational styles of leadership were highlighted the most. However, for the purposes of risk management, this research takes the stance that it is the transformational rather than the transactional style of leadership that is more relevant. This is because it is the transformational style of leadership that is in accordance with the new psychology of leadership. According to Oke *et al.,* (2013), transformational leadership results in processes of mental stimulation and elevation that gain more followers and converts leaders into agents of change. This implies that transformational leadership occurs when leaders and their followers engage in such a way that they are mutually motivated. According to Covey (1992), transformational leadership is closely related to the ideal leader or the prototype of a leader that followers want to identify with. This is in accordance with the notion of charisma discussed in the literature, where transformational leaders shape, alter and elevate the values and goals of their followers, thereby achieving enhanced levels of performance. The attribute charisma may refer to qualities that transform both leaders and followers who work together for the joint achievement of common goals and objectives. Transformational leadership is thus a two way process that facilitates change management, expands and transforms the interests of followers, increases followers' confidence, elevates their expectations, encourages changes in behaviour, motivates others towards high levels of achievement and ultimately results in the intended outcomes occurring. A key point in this regard is made by Schaufeli *et al.,* (2016), who state that transformational leadership is something that can be learnt. This put pay to the notion that charisma and the ability to lead are inherited traits.

Transformational leadership is related to those behavioural processes that in fact can be learnt and developed.

The literature also indicates that transformational leadership is uniquely suited for enhanced risk management processes. Tan and Nasrudin (2015) indicate that the relevance of transformational leadership is that it is best suited for the challenges of the modern world. This is because transformational leadership transforms individuals by changing them in mind and heart; providing enlarged vision, enhanced levels of insight and understanding, clarifying aims and goals, bringing about congruence between behaviour and principles/values, and inducing long-term change. In this context, Wood and Tarrier (2011) associate transformational leadership with distinct styles of behaviour, where one or all styles may be adopted or developed by leaders. One approach is for leaders to take actions that will help their subordinates to recognise what is right, what is significant, and to go beyond self-interest and focus on the greater good of the organisation, and it induces a sense of purpose in them. Another approach is to develop the habit of being proactive in an innovative manner. A third option is to optimise overall development and not just focus on performance alone, which can be achieved by developing abilities, attitudes, skills and values. Transformational leaders motivate individuals to move beyond the need for security and instead strive for achievement and self–actualisation. In doing so, they facilitate their subordinates in achieving the highest levels of achievement. In this sense, they also bring about the optimal development of the business, creating high performance organisations. Youssef and Luthans (2012) identified the key competencies of transformational leaders as being those who can seek direction, set an example, communicate well, align goals, bring out the best in individuals, facilitate change, and provide decision making in crises and ambiguous situations. For the purposes of this research, the true value of transformational leadership may be reflected best in Youssef and Luthans (2012) statement that transformation leadership engages emotionally with its followers, securing their commitment towards change management. Extended to the context of risk management, this suggests that transformational leaders are able to enlist the cooperation of all organisational members in effectively countering risk.

Another concept explored in the literature and related to transformational leadership is that of ‘dispersed leadership’, also called the ‘informal’ or ‘emergent’ styles of leadership, which is the outcome of the social aspects of leadership whereby leaders should secure the acceptance of their followers and the realisation that there is no one person who can provide ideal leadership in all circumstances. According to Wright and Lauer (2013) dispersed leadership

points to a style of leadership where the leader is, in fact, dissociated in the minds of followers from the organisational hierarchy. This points to the emergence of leaders at all levels of the organisation who can exert a significant influence over their colleagues and, by doing so, aid the higher echelons of management in securing organisational goals such as risk management. This is in line with the concepts of sense-making and sense-giving discussed in the literature review, where it was found that leaders are those who are able to make sense out of ambiguous and risky situations and provide followers with an overall direction in such situations. Here, it is not so much the exercise of authority as exercise of leadership that is being seen. In this way, leaders are not necessarily associated with formal organisational power roles or hierarchies, but are identified on the basis of the relationship they have with the larger social group – that is, the organisation.

This concept of emergent leaders has also been developed in the literature on transformational leadership. Sabol (2009) terms such leaders as champions who are primarily responsible for driving change at the level of individual projects and organisations. In the context of risk management and culture, it is evident that the leaders at the top will depend on reliable individuals lower down the organisational hierarchy who can be entrusted to champion the causes of change and risk management programmes. Sabol (2009) points out that champion leader enable organisations to quickly adjust to external changing circumstances. Hills *et al.* (2011) have identified various kinds of champions, including political, executive, project and external champions. Political champions are those within the organisation who promote acceptance of various initiatives. Executive champions are those who support transformational activity. Project champions work to achieve project goals, whilst external champions are stakeholders operating outside the organisation who promote the welfare of the organisation. The challenge here is to identify and develop such emergent or champion leaders from within the organisation. It is here that transformational leadership, especially at the board and executive committee levels, assumes significance, as it is only transformative leaders who can identify emergent champion leaders from within the organisation and grow / develop them as agents of change.

Transformational leadership leading to emergence of champion leaders seems to indicate that it is not just a top down style of leadership that is recommended for an organisation seeking to maximise the effectiveness of its risk management strategy. Rather, it is also a combination of a top down and bottom up style of leadership that is recommended. The bottom up style of leadership is exerted by champion leaders emerging from all hierarchies of the organisation and who are willing to take initiate and shoulder responsibility. A network of leaders is

thereby created across all hierarchies of the organisation, with members that work together in countering risk.

According to Ledbetter (2012), transformational leadership leads to the creation of a critical mass of leaders within the organisation. There is an urgent requirement for a greater, rather than fewer, numbers of leaders, and the concept of champion leaders is thus particularly important. Whilst Keys *et al.* (2012) indicate a preference for a top down leadership that can easily counter resistance to any decisions that may be taken, Hilton (2010) highlights the role of senior leaders linked to others in the organisation who can exert more power and bring about effective risk management.

The literature also identifies skills and qualities whereby champion leaders may be identified. Conversely, these are the skills and qualities that ought to be fostered by top level leaders in individuals who are identified as champion leaders. According to Chua *et al.* (2011), champion leaders constantly question the status quo and have the ability to chalk out new visions for their departments. They constantly seek windows of opportunity, facilitate collaboration with multiple agents, facilitate interactions amongst them, and co-ordinate various activities. Here, the implication is a transformational style of leadership at the top level that facilitates the emergence of champion leaders. According to Bradley (2011), champion leaders are able to articulate a clear vision, identify promising initiatives, and are enthusiastic, confident and even persistent under adversity, whilst also possessing good communication skills.

8.6. Organisational Culture

This section explores organisational culture, how ERM implementation is dependent on organisational culture and how organisational culture of risk may be developed.

8.6.1 Introduction to high risk appetite organisational culture

From the literature review, it was found that organisational culture refers to people's habits that together form a set of patterns. In the context of risk management, Sirgy and Wu (2009) points out that organisational culture collectively reflects whether or not a culture of risk has been internalised at the individual level. It may be inferred that the development of organisational culture is a dialectic process that gets formed by (and in turn forms) the thoughts, actions and habits of its people. Milton (2010) points out that standard operating procedures (SOPs) – such as standards-based ERM procedures – are necessary to create order and control within entities. However, whilst culture can also create the same order and control, SOPs can never facilitate dynamic interpretations, improvisations and action. Linley

et al., (2010) point out that culture is important in creating high performance organisations, as organisational behaviour, habits and meaning-making are more susceptible to cultural norms than they are to technical specifications.

The implication here is that the implementation of ERM is dependent on an organisational culture of risk. This is corroborated by the findings of the quantitative survey. It was found that, in general, there is a poor organisational culture of risk amongst Saudi Arabian organisations operating in the private sector. The variable of poor organisational culture was found to be significantly correlated to a sub-standard / failed ERM implementation. The corollary of this is that a strong organisational culture of risk will lead to effective ERM being implemented, with the benefits of ERM accruing to the organisation.

The key finding from the qualitative analysis was that risk in the context of organisational culture is defined in terms of risk appetite and risk tolerance. Whilst risk appetite indicates the maximum risk that may be accepted by an organisation, risk tolerance refers to the minimum risk acceptable by the organisation. Again, it is organisational culture that determines these upper and lower limits of risk acceptance. Risk culture was found to be highly focused on taking risk, emphasising the level of bravery or risk aversion amongst the organisation's people. Risk culture essentially refers to the decisions that these people are willing to take.

Risk culture is about developing a greater appetite for, and tolerance, of risk. Risk culture is targeted towards the ways in which employees are made aware of risk. The qualitative review also indicated that it is the senior management that has the main responsibility of creating an organisational culture with a strong risk appetite. Other respondents in the survey specifically indicated CEOs and the board of directors to be the primary agents of risk culture. One respondent pointed out that the CEO is also the chief risk manager / owner of the organisation. A key finding from the qualitative analysis is that respondents also felt every employee who makes decisions to be a key player in developing a strong risk appetite.

A key factor that enables risk culture to be developed is communication. An analysis of the qualitative responses indicates that communication lies at the heart of all the other factors responsible for creating a risk culture, including shared vision, positive work environment, job satisfaction, participatory decision making, empowerment, employee satisfaction and trust. Creating an ethical organisation was also regarded as facilitating the development of an organisational culture of risk.

From the above findings, a proper definition of risk culture may be attempted. Risk culture refers to all of the behavioural norms individuals follow within an organisation that determine

the collective ability to identify, understand, openly discuss and take action on current and potential future risks to the organisation. According to McKinsey (2010), risk culture refers to all of the basic assumptions and beliefs that are shared by members of the organisation. These assumptions / beliefs operate at the unconscious level and are taken for granted with respect to the organisation's view of itself and its environment. McKinsey (2010) also points out that a strong risk culture includes: (i) a clear and well-articulated risk strategy; (ii) processes of information-sharing throughout the organisation; (iii) the ability to quickly escalate issues / threats / concerns; (iv) adherence to desired behaviours, standards and roles by employees; (v) challenging employees to always do the right thing; and; (vi) the continuous challenging of actions regarding risk across the organisation.

It may be inferred that developing an organisational culture of risk includes three essential elements, which encompass all of the points discussed above, including: (i) developing a high risk appetite; (ii) communicating, monitoring and updating the risk appetite; and (iii) developing an ethical organisation. The achievement of these three elements will lead to a high risk culture being developed, and this is initiated and controlled by leaders. All of these factors are illustrated in Figure 8-2, below:

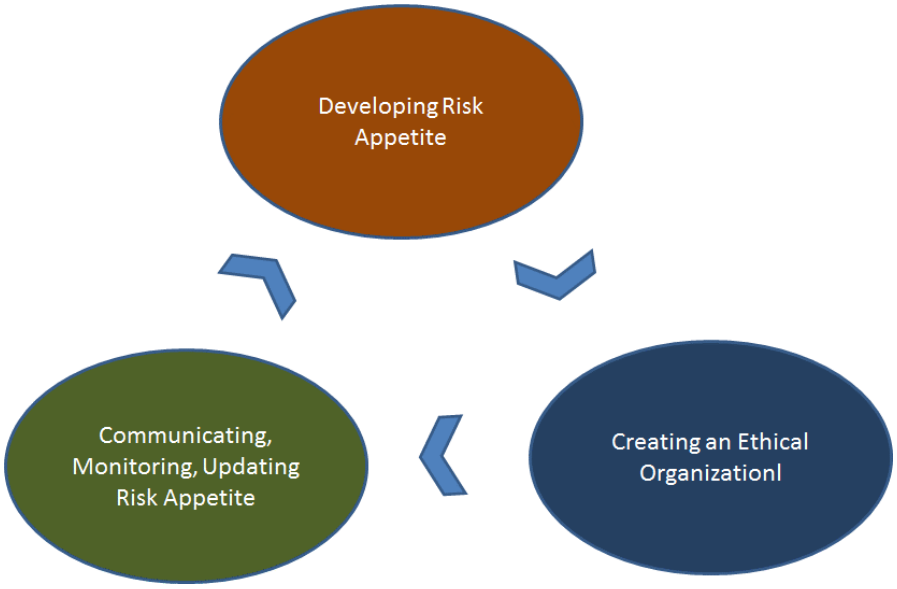

Figure 8-2 creating organisational culture of high risk appetite

Source: Researcher

The first step in the process is for organisational leaders to develop a risk appetite, manifested in the form of risk appetite statements, which are then communicated across the organisation. The process includes a process of monitoring and updating as well as promoting ethical norms and behaviour throughout the organisation.

8.6.2 Developing risk appetite

From the qualitative analysis, it was found that risk appetite refers to the broad amount of risk the organisation is willing to accept as it pursues its strategic objectives and seeks to maximise value. Risk appetite indicates the philosophy of the management with respect to risk and impacts both culture and operating style with respect to risk. Risk appetite guides the allocation of resources, and aligns the organisation and its resources to suitably respond and counter risks. Risk appetite is related to risk capacity, which is the ability of the organisation to absorb losses, which are either occurring presently or are a potential factor. Risk capacity is typically measured in terms of cash that can be used to meet demands on liquidity and in terms of capital that can be used to recoup potential losses. Higher risk appetite results in greater consumption of risk capacity. Lower risk appetite consumes fewer organisational capacities, creating a large buffer zone that reduces the vulnerability of the organisation. From the above views of risk appetite, the key characteristics of risk appetite may be determined. These are (i) is strategic and related to the achievement of the organisation's goals; (ii) determines how resources are allocated; (iii) determines how organisational infrastructure will be used to recognise, support, assess, respond and monitor risks; (iv) influences the organisation's attitude towards risk; and (iv) determines how the risk gets monitored as well as the continuing risk appetite of the organisation.

The first step in the development of a high risk appetite culture is to develop a risk appetite statement that can then be communicated across the organisation. In accordance with the majority of the respondents' views, it may be inferred that the main responsibility of developing a risk statement lies with the leaders / board / CEO. According to Lam (2015), a risk appetite statement communicates risk decision-making for the entire senior management, business and operating units of the organisation. Its utility stems from the fact that it leads to a clear articulation of the limits within which organisational objectives should be pursued. Without such articulation it is difficult for the senior management to introduce those operational policies that can convince everyone in the organisation that they are pursuing their goals within identified limits. Thus the risk appetite statement sets the overall risk management tone for the entire organisation.

There are several key characteristics of an effective risk appetite statement. According to Luthans and Church (2012), a risk appetite statement should be short, concise and clear. Only a concise and unambiguous statement can be implemented across the organisation. It should be related to the pursuit of operational, strategic and compliance objectives. In other words, it should be directly linked to the objectives of the organisation. Risk appetite statements should

be precise so that they can be communicated across the organisation, monitored efficiently and adjusted whenever required (Carmeli *et al.*, 2014). It should set tolerance levels of risk. This will help identify the parameters of acceptable risk levels. Risk appetite statements should facilitate allocation of men, money, materials and organisational infrastructure to pursue objectives of the organisation within acceptable limits of risk (Avey *et al.*, 2015). It should facilitate the monitoring of the external competitive environment; recognise the temporality of risk and the time horizons of the goals being pursued. According to Godin (2015) risk appetite statements t should also recognise that risk appetite means managing both the portfolio of projects and portfolio of risks of the organisation. Whilst risk appetite statements should be concise, they should also be descriptive to guide actions within the organisation.

The ways in which a risk appetite statement should be developed can be inferred from the participants' responses. Whilst this is an activity that is driven by the top management, it should be done in a participatory manner. Here, it can hardly be supposed that every employee in the organisation should be solicited for his/her views. The respondents themselves specify employees who may be consulted in this regard as being 'those involved in decision making'. This means that all those involved with risk – including the board, the executive management and employees from business / functional units – should be consulted to develop the risk appetite statement. The participatory nature of this process involves each of the teams identifying and developing the risk appetite metrics for their respective departments. The senior management team develops risk appetite metrics for the entire organisation. The purpose of this participatory exercise is to develop the risk appetite statement with inputs from all risk owners. The Researcher recommends that this process works to develop the risk appetite statement first by identifying the strategic goals and objectives as well as their underlying assumptions for each business or function. Subsequently, the performance metrics (KPIs) that quantify the level of achievement of each of these objectives should be identified. These are typically the performance targets quantified for each business unit. Next will come risk assessment analysis, where the key risks that could cause variation of achievement from the target may be ascertained. Lastly is the identification of the risk appetite, wherein the risk appetite for each of the identified risks is identified. This process includes the quantification of gains and losses for each of the risks and setting risk limits and tolerances for each risk.

8.6.3 Communicating the risk appetite statement

Once the risk appetite statement has been formulated, it has to be communicated across the organisation. As identified in both the qualitative and quantitative analyses, communicating the risk appetite statement is more than just disseminating the statement throughout the organisation. It involves using those methods that convince and persuade to follow the guidelines laid down in the statement. The Researcher was not able to find any one uniform way of communicating a risk appetite statement across different organisations. In this scenario, it is recommended that each organisation should determine its own best way to communicate its risk appetite in such a way that objectives are being met within the identified risk appetites. Risk appetite should be defined in terms of risk tolerances, and be stated in such a way that it enables managers to make decisions whilst being specific enough to be monitored. In this context, the Researcher was able to identify three broad approaches for communicating risk appetite: (i) use of broad statements; (ii) indicating the risk appetite for each of the major organisational objectives; and (iii) indicating risk appetite for different risk categories.

Communicating risk appetite using broad statements Organisations that seek to communicate risk appetite at the macro level may do so using broad, high level statements. These statements list the acceptable levels of risk an organisation can accept as it pursues its objectives. Some organisations use graphics to communicate a risk appetite statement. Another common approach is to use colours that are analogous to a heat map and indicate the acceptable and unacceptable levels of risk. In this way, risks can be grouped according to objectives, summarised, and then plotted. The colour banding reflects high and low risk appetites. The advantage of this method is that it provides a simpler way to indicate unacceptable levels of risk. Discussions on the various statements, as well as on the colour bands, can indicate any differences between the board, CEO, senior managers and other risk managers' perceptions of the risk appetite.

Communicating risk appetite using organisational objectives another way to communicate risk appetite is to focus on each of the organisational objectives rather than to consider risk at the macro level only. The advantage of this method is that it allows for the classification of acceptable risks for each of the organisational objectives. In this way, the differences between say compliance risks and operational risks can be easily determined. This process also helps in the decision making process, especially when resources are scarce and have to be allocated across the organisations various units / functions. Another advantage is that this method of classification of risks is less complicated than viewing risks at just the

macro level. However, the challenge with this method is to develop statements that include specific risks that may be considered differently according to acceptable levels of risks.

Communicating risk appetite using risk categories A third way of communicating risk appetite is to explain the statements in the form of risk categories. Examples of these categories include political, competition, labour, technology, environment, economic, product, and so on. Some organisations may use customised categories in accordance with their particular line of business. For this reason, the risk appetite statements of financial organisations will be very different from those of manufacturing organisations and both will differ from the risk appetite statements of IT organisations. The advantage of using categories to communicate is that the organisation can make judgements about acceptable levels of risk by considering the unique requirements of each group of risks.

Cascading the risk appetite statement across the organisation Leaders do not only have the responsibility of creating risk appetite statements and developing ways to communicate those statements across the organisation, but also to cascade those statements in a way that ensures implementation is in line with risk appetite. It is all the more important for those entrusted with the task of implementing operations related to the objectives of the organisation to understand and to align them with risk appetite. If the organisational operations do not stay within the limits delineated by the risk appetite, the threat from risk becomes all the more severe. This implies that risk appetite needs to be integrated across the organisation. All business units should understand the risk appetite of the organisation and the limits set for risk tolerances. The risk appetite may be determined at the higher levels of the organisation along with goals, aims and objectives. The macro level risk appetite then has to be communicated in more specific, measurable performance metric related terms, as it gets disseminated across subsidiaries, divisions and business unit levels. In this way, risk appetite gets expressed in the form of specific performance measures that are quantifiable. This more precise articulation of risk appetite helps in the identification of situations where risk can be continuously monitored and corrective action taken wherever required.

8.6.4 Monitoring and control of risk appetite

Once the risk appetite of the organisation has been identified, developed and disseminated, it is also necessary to constantly monitor and reinforce it. The development of a risk appetite cannot therefore be a one-time activity which then gets left unattended for long periods of time. Rather, it should be constantly monitored, reviewed and form part of the operational processes of the organisation. This is even more relevant if there is ever a change in the

business model of the organisation. The board cannot assume that everybody in the organisation is equally responsible and will operate within the set tolerance limits. This implies that some monitoring activity should be put into place. The implication here is that whilst the board is responsible for developing risk appetite and for communicating that appetite across the organisation, it also has a duty to oversee and monitor the implementation it. Management should also monitor organisational activity and keep checking for consistence with risk appetite through the specific metrics identified. It is here that the KPIs identified for risk metrics are particularly useful. These metrics make the whole task of monitoring risk appetite easier. For most organisations, the internal audit performs the task of monitoring and control.

The importance of communication is again evident here, as communication creates awareness, which in turn results in a reinforcement of risk appetite goals that are consistent with that of the board. This also results in greater accountability for those responsible for implementing risk management, as they will then stay within the parameters of risk appetite. Effective communication creates risk awareness throughout the organisation where each employee has clarity on what is acceptable, what is not, whether the wrong objectives are being pursued or whether excessive risk is being encountered whilst pursuing the appropriate objectives. The objectives of a risk monitoring plan should be to ensure that there is consistent implementation of operations across different business units, changes in risk appetite are identified and communicated and there is consistent understanding of risk appetite within each business unit and with the overall organisation. In its most basic form, monitoring includes an ongoing process of continuous evaluations, which consider whether the objectives that are set and the decisions that are being made as risk responses are compatible with the risk appetite of the organisation. A variation from the desired risk appetite has to be reported as part of the monitoring process so that suitable course corrections may be made.

8.6.5. The impact of leadership roles

From the qualitative analysis, it was identified that the primary responsibility of developing a risk management culture resides with the board of directors, senior management and with the CEO. This corroborates the finding from the literature which indicated that the implementation of ERM is primarily the responsibility of the senior leaders or the Board of directors of an organization. The implication is that the leaders of the organization should effectively implement ERM and any failure to do so is a failure of leadership. This means

that there are additional psychological features that should feature in any psychology of leadership such that leaders are able to make rational decisions under the condition of risk and uncertainty and create an appropriate risk culture within the organisation. The theoretical constructs that have been identified from the literature as influencing decision making ability under condition of risk and uncertainty – including mental protective frames that lead to risk acceptance or risk avoidance, psychometric paradigms and bias – were all validated through the qualitative survey conducted in sections 6.4.1 and 6.4.2 of chapter 6.

The following roles have been identified for the board / senior management to effectively create an organisational culture of risk, based on the literature. For the purpose of this discussion it can be said that these roles lead to the development of effective risk appetite statements, appropriate communication across all levels of the organisation and an efficient monitoring and control process. Accordingly, the first duty of senior management is to establish risk appetite. This is because the organisation cannot analyse how well it is managing risk until and unless it identifies the range of acceptable risk it can accept as it pursues its goals and objectives. In this process, management should effectively and unequivocally communicate its goals and objectives, strategies, quantitative metrics that measure or indicate whether objectives are being achieved, the time horizons within which the objectives have to be achieved and the range of risks that the organisation is willing to accept as it pursues these goals.

The second duty of the board / senior management is to oversee risk appetite. This process is to ensure that ranges of risk are within limits at all times. The board performs this function in regular consultation with the management team. The third role of the board is to communicate risk appetite throughout the organisation. This ensures that the concept of risk and risk appetite statements are embedded into the organisational culture of the organisation. The fourth role of the board is to ensure the alignment of risk appetite with all stakeholders and managers. This is because in order to ensure accountability for every individual, there is the need to put in place an efficient governance process. This ensures that compensation and incentive systems are in line with the goals of the organisation and that they fall within the ambit of organisational risk appetite. The fifth role is to ensure continuity of management of risk and of risk appetite over a longer period of time. The nature of risk and, hence, of risk appetites changes over time. For this reason, greater pro-activeness is called for and should include the communication of any changes to the risk appetite statement and continuous monitoring of all of the organisations operations and processes to determine whether the activities of the organisation have moved beyond the set limits. The sixth role of the board is

one of constant monitoring to ensure adherence to risk appetite as well as to the risk management processes. The results of the monitoring processes should be informed at all times to the relevant monitoring body – such as an audit committee – or to relevant board members. The seventh role of the board is to support a culture of organisational risk. The tone may be positive or negative as the case may be to ensure that all operations and activities lie within acceptable limits. What, in essence, is being recommended here an approach to risk taking that is prudent and incorporated into organisational culture / core values. The eighth important role of the board is resource management, wherein resources are allocated as and when required in order to maintain adequate and appropriate risk management. The ninth role of the board is effective communication of strategies, goals and objectives. This should be carried out at both the macro level, in terms of overall organisational strategy, as at the functional / business unit level. The tenth role is to communicate clearly and unambiguously how much risk the organisation is willing to take across all of its levels. This ensures the identification of acceptable amounts of risk for the entire organisation and all its verticals.

In addition, the various concepts embedded within the new psychology of leadership that are able to guide decisions and create an appropriate risk culture within organisations in order to drive effective ERM were examined. It was found that the psychology of leadership exclusively focuses on the qualities and behaviour expected from a leader. Whilst these are still relevant, it is more important for leaders to change their current 'I'-centred modes of thought to the 'we'-centred approach. New leadership is about collaborating with others, engaging in the process of negotiation, and the creation of an identity that increases the charismatic appeal of the leader. This type of leadership that is able to psychologically influence others to adopt a common vision and work towards common organisational objectives. When translated to an ERM context, the new psychology of leadership is essentially related to the processes of collaboration that lead to joint decision-making and the act of working together to redress current and future risks. The extent to which organisational leaders are able to influence others to work towards this type of risk management process determines the degree of effectiveness achieved in standards-based ERM implementation and application. These theoretical were validated through the qualitative analysis indicating that for successful ERM implementation it is the new psychology of leadership is important for ERM implementation.

From the qualitative review, it was identified that it is not just the senior management who are wholly responsible for the successful development of a risk culture. Rather, it is anybody

who has to 'make a decision' within the organisation. This implies that the development and implementation of risk appetite statements should involve stakeholders from all levels of the organisation. These include members from the executive level of management as well as those from the business units. Figure 8-3 summarises the various roles and responsibilities from multiple stakeholders.

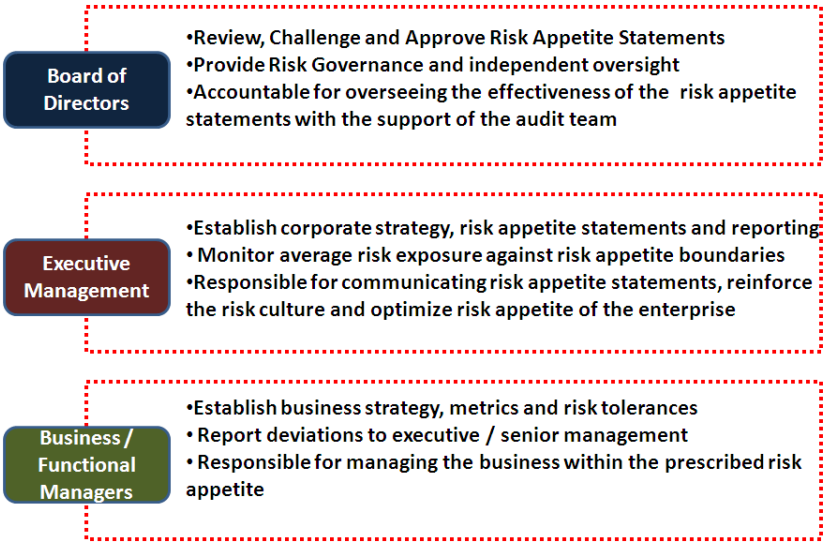

Figure 8-3 Roles and responsibilities for risk owners

Source: Researcher

From Figure 8-3, it is observed that there are three broad levels of responsibility for implementing and developing organisational risk culture. These three levels may be considered three lines of defence, which together work to help the organisation in developing its risk appetite.

Roles of business / functional managers – The business unit may be considered the first line of defence as it is they who are ultimately responsible for implementing operations in the respective departments. Business and functional managers are also responsible for ensuring that their operations stay within the risk appetites specified in the risk appetite statements for their departments. These managers are responsible for the measurement and management of the particular risks confronting their business / functional units or profit / support function units. In this sense, they may be considered to be as much 'risk owners' as the board of directors. They may also be considered the first line of defence since they are the nearest to the activities put in place to mitigate risk. They have first-hand knowledge, information and experience in handling various risks, including the impact of risk on the business. The business and functional managers are responsible for the proper definition of business strategy and alignment with appropriate risk appetite and tolerance to risk. They are

responsible for implementing the risk appetite statement pertaining to their division and for reporting any deviations or policy exceptions to their superiors. They are ultimately responsible for and accountable for how their business units / functional units perform in comparison with the limits of risk tolerances identified in the risk appetite statements.

Roles of executive management – Executive management consists of the CEO, the senior managers, who report into the CEO, and the chief risk officer (CRO) or the equivalent of the CRO. It is managers at this level who are responsible for the development of the risk appetite statements at both the organisation and division level. This level is the organisation's second line of defence. They are also responsible for communicating the risk appetite statements so developed to the business / functional managers. These managers establish overall corporate strategy and ensure alignment with business units. They are responsible for continuous processes of monitoring of risk and reporting to the board and to other external stakeholders, such as financial investors and rating agencies. The main duty of the CRO and his / her team are to develop tools for the measurement and monitoring of risk exposure against pre-set risk appetite parameters. If there is a violation of risk appetite boundaries, they should be able to explain the business context, the business analyses and the main causes for such deviations. The optimisation of organisational risk appetite and the strength of risk culture is ultimate the responsibility of the executive management.

Roles of the board – The board of directors – consisting largely of directors from outside the organisation, termed independent directors – represents both the third and last line of defence for the organisation. The board is responsible for the overall review, monitoring, challenging and approval of the risk appetite of the organisation. Their role is to exercise an unbiased and independent monitoring of the risk appetite of the business. In this, they are aided by the internal audit team or the internal risk team. The role of the board is to point out those variances or deviations from risk appetite that consistently occurring or to the activities of a business / functional division that consistently does not display a strong culture of risk. Such monitoring ultimately leads to an investigation into the causes of the deviation, leading to rectification activities being undertaken. On the other hand, if the risk limits are never breached, the board is justified in asking if the risk limits are too high or so relaxed as to be ineffective. The main responsibility of the board is to ensure that an effective risk culture is operating within the organisation. Thus, executive managers are required to send frequent, accurately, timely and concise reports to the board in order to help them fulfil this crucial fiduciary responsibility. This reporting is invariably in the form of a dashboard containing

risk metrics that fall into a red zone whenever there is too much deviation from set standards. Reporting also includes explanations for such deviations and recommendations for remedial measures that may be applied.

8.7 Developing an ethical organisation.

From the qualitative review, it was identified that developing an ethical organisation – or creating the perception that the organisation behaves in an ethical manner towards its stakeholders – is essential from the point of view of leaders getting their subordinates to follow them. The key responsibility of the board and senior management is to behave (or be seen to behave) in an ethical manner. From the literature and the qualitative review, it was found that the link between leadership, ethical behaviour and risk management is that ethical leaders will promote a sense of accountability throughout the organisation that will mitigate / reduce and even prevent risks from occurring.

The literature on ethical behaviour may be used to further understand how an ethical culture may be created by leaders. According to Spencer and Hyman (2012), the board should ensure that it adheres to its three essential duties of care, obedience and loyalty, and the key component underlying all three duties, which is to avoid conflict of interest. The duty of loyalty mandates that the board gives primary importance to the organisation and its vision / mission rather than to personal interests. There should be a thorough understanding of the vision of the organisation and the ways in which it intends to carry out its mission. The members of the board should never use organisational information for personal aggrandisement, and should always act in the best interests of the organisation. Spencer and Hyman (2012) explain the duty of care as the prudence that should be exercised at all times when making decisions. This means that the board considers itself to be the steward of the organisation in the long-term; hence decision making should be motivated by the current and future impact on the organisation. There has already been much discussion on the conduction of decision making, particularly in the context of risk. The duty of obedience means that the mission of the organisation and its goals should be accorded first importance. Board members cannot make decisions that are not in line with the organisational mission. Boards have the trust of the rest of the organisation that the organisation’s funds and resources will be used to achieve this mission. Conflict of interest may interfere with the board’s ability to perform all three of the aforementioned duties. This occurs whenever the board has dual interests, whether actual or perceived. This occurs when board members participate in making decisions wherein they stand to make significant gains. Such conflict of interest violates the

duty to care for the organisation as it can result in imprudent decision making systems. It also violates the duty of loyalty, as it places personal interests above the interests of the organisation, and by making decisions that are not consistent with the vision / mission of the organisation; it violates the duty of obedience. According to Drummond (2002) the best way to avoid conflict of interest is through disclosure, and from preventing participation in those decisions in which potential conflict of interest may arise. The adoption of ethical codes that extend beyond the board's three core duties represents another effective approach to creating the perception of ethicality amongst respondents. These codes should be understood and published throughout the organisation and used whenever there is potential for transgression. In this way, the board sets a standard for ethical behaviour throughout the organisation and develops a culture of risk management. Maintaining transparency regarding decisions and recommendations is another strategy that can be applied to create a perception of ethicality. Here, Drummond (2002) points out that transparency does not mean the board should disclose every single matter of decision–making it takes to the organisation. Rather, the context should be given for each of the decisions and recommendations that taken.

The point that the responsibility for creating an organisational culture of risk does not reside solely with the board but with senior management and with business / functional unit managers has already been asserted. Once again, the board is the starting point for the development of an ethical organisational culture in this case, as before. The board should liaise with the management team and ensure that transparent and ethical decision-making processes are instituted, which facilitates the proper management of risk.

This may be achieved in several ways. According to Francis (2000), the concepts of risk management should be incorporated right down to the business / functional unit level. With every decision that is made, there should be control standards put into place, methods of monitoring when deviations occur and constant improvements made to address such problems – particularly those that impact quality or expose the organisation to risks that are beyond its risk appetite. This is analogous to the process of implementing risk appetite statements discussed in Section 8.5. Shore (2007) points out that managers should constantly engage with their staff through regular conversations about ethical practices and transparent decision-making related to risk management, and they should point out the importance of ethical risk management practices in daily operations. Here, the implication is that it is the duty of managers to set the tone for ethical behaviour amongst the staff. If leaders make mistakes, they should be transparent about them, indicate the causes, and express how these

mistakes will be remedied. An open door policy should be instituted so that employees may be forthcoming without fear of reprisal. The organisation should institute a culture of tolerance when staff challenges decisions that are made and where such challenges promote the best interests of the organisation. Williams (2006) points out that processes that clarify responsibility and accountability throughout the organisation should be defined and established. It is the duty of the board to see that such processes are being implemented and even question management when there is any perceived lack thereof. It is the duty of management to also constantly monitor risk and report to the board on such issues is litigation and improvements that have been realised in prior problems, as well as comparisons made with other organisations, and highlighting any emergent new practices.

The importance of trust between leaders and subordinates is highlighted in the existing literature. According to Shore (2007) organisational trust is essential to facilitate everyday business interactions. By building trust, leaders ensure that their subordinates will follow through their work commitments. Shore (2007) highlights the value of fiduciary relationships in organisations – the creation of which being the responsibility of the board – as they indicate a formal duty that every employee has to one another and are imposed by loyalty and commitment whilst being motivated by morally ethical judgements that are related to every position. According to Williams (2006), only when the organisation is perceived as being fair and just will trust be secured. Therefore, creating an ethical organisation is essential in building trust. Here, the principles of non–repression, freedom of speech, transparency and non–discrimination are all relevant for the development of high levels of trust within the organisation. In this context, Boyle *et al.* (2001) point out that incorporating virtues of fairness, honesty, integrity, mutual respect and prudence should be incorporated into the vision / mission of the organisation. By defining these values and stating them explicitly, organisations showcase their ethical culture and behaviour and create trust. From the perspective of risk management, more trust means that leaders can influence their subordinates to carry out their instructions with regards to implementation of risk management practices.

8.8. Aligning the ERM framework with Psychology Risk Leadership and Implementation

Sections 8.1 – 8.6 discussed the concepts of psychology risk leadership with a particular focus on leadership style, decision making and organisational culture. It is now important to

highlight how these elements relate to effective ERM implementation. Figure 8-4, below, indicates the revised conceptual model, which reflects the findings in Sections 8.1-8.6.

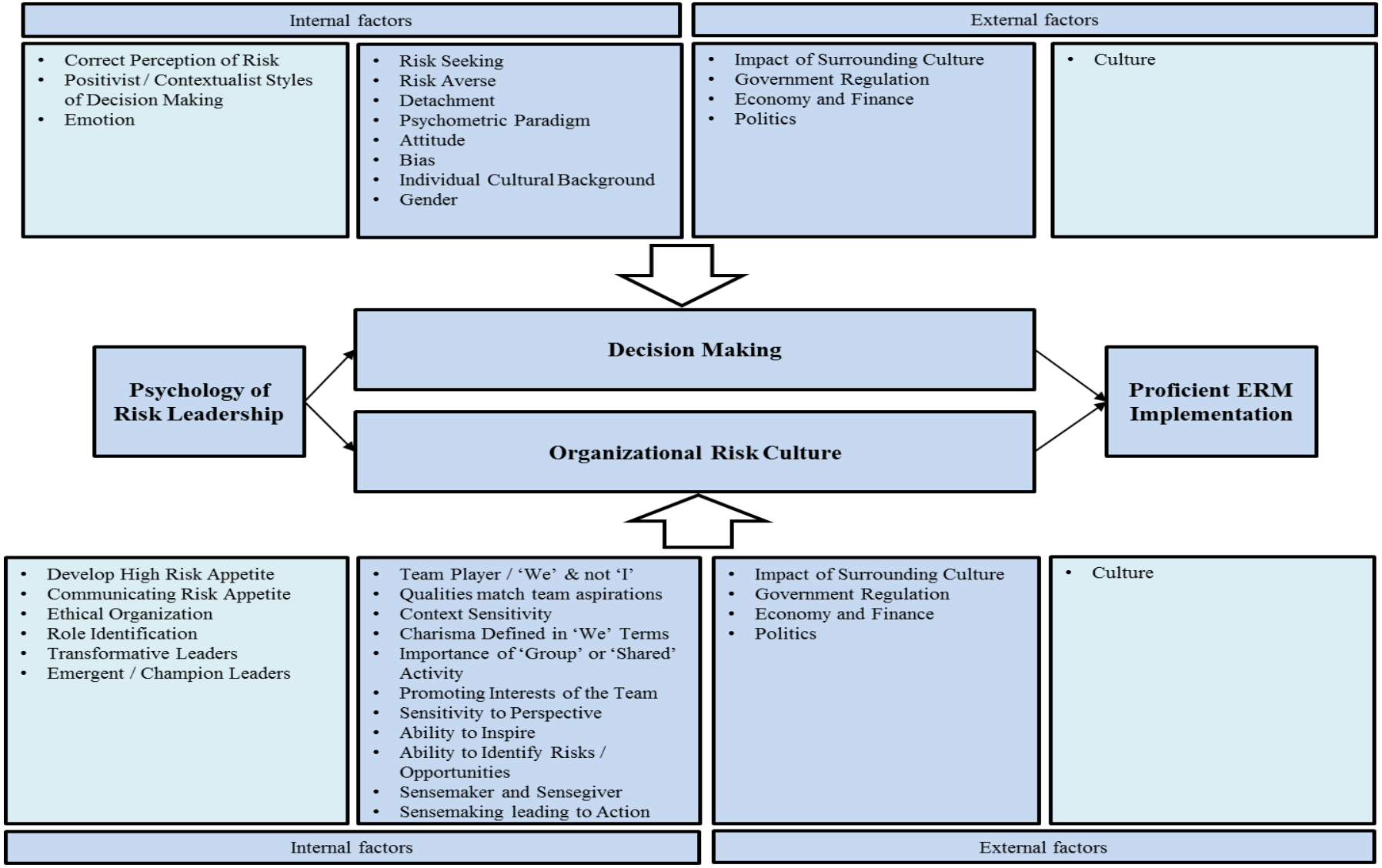

Figure 8-4 Psychology of Risk Leadership and ERM Implementation framework

Source: Researcher

In figure 8-4 the new dimensions of the psychology of risk leadership, derived from the primary data are indicated in black. The dependence of risk leadership on decision making and organisational risk culture is indicated in Figure 8-4. It is observed that decision making and organisational culture of risk are in turn dependent on various other factors. Some of these factors (indicated in brown and green) have been identified in the literature. They have also been validated in the qualitative / quantitative analysis and hence have been retained in the conceptual model. In addition, the qualitative and quantitative analysis also identified additional factors (indicated in black) that have also been incorporated in the conceptual model. The broad supposition that is made in this research is that cognition of all of these factors is necessary for all leaders involved in risk management activity. This allows them to ensure effective ERM process implementation, resulting in benefits to the organisation.

Practical Guidelines for Implementing ERM Framework.

The analysis of the risk leadership and ERM implementation framework begins by mapping out the standards-based ERM models illustrated in Figure 8-5 positions each activity that needs to be performed so that an understanding of the risk management process advocated by the various standards-based ERM models may be understood.

Figure 8-5 Standards-Based Enterprise Risk Management Process

Source: Researcher

Each of the stages in Figure 8-5 can be considered to be a separate process all of its own. The sequential nature in which the various steps are indicted does not imply that they cannot be all performed simultaneously. This research identifies ERM as a task that is invariably

performed by the board of directors and / or executive committee. As such, it is a task that is performed by the 'leaders' of the organisation, and its success or failure may thus depend upon these leaders. This is in accordance with the findings of COSO (2004) who defined ERM as a process implemented by the organisation's board of directors, across the enterprise, for the purpose of identifying uncertainties that might impact the business and to prepare accordingly so that the organisation can achieve its business objectives. According to Yilmaz (2008), ERM is essentially a top-down activity, initiated and supervised by top management and implemented by lower echelons of management. Dafikpaku (2011) points out that whilst everyone within an organisation is accountable for the efficient running of ERM programmes, the chief executive officer together with the board of directors assume ultimate responsibility for all risks that the business is exposed to and the outcomes of the ERM programmes implemented. According to HBR (2013), the organisation's board of directors – comprised of directors from other organisations, academics and professionals, together with the CEO, chief financial officers, chief risk officer and chief compliance officers – is collectively responsible for the success of ERM implementation. In addition, Block (2003) states that the most important responsibility of leaders is to create a unique culture for a business entity that results in sustainable competitive advantage, whilst Mainelli (2004) points out it is for these reasons that leadership skills are necessary for establishing risk culture within an organisation. Khan and Burns (2007) point out that it is important to understand how decision makers interpret the business environment, make strategic decisions and deploy resources in pursuit of organisational objectives. It may be therefore inferred that the ability to create organisational risk culture along with decision-making capability are the two factors that influence leadership in the context of ERM.

Each of these ERM stages will be accordingly developed as explained in the following steps and also provide practical guidance for implementation.

Step 1 - Analysing the Environment – Effective ERM process implementation relies firstly upon leaders' identification and definition of the context surrounding the risk. This may be achieved by leveraging the internal environment as this provides the foundation for all risk management activities. This is best carried out with the involvement of all of the internal and external stakeholders of the organisation and, in particular, those staff involved in the risk management process who understand the basis for decisions to be made and the actions to be taken. These stakeholders operate through the vertical and horizontal silos of the organisation. The analysis of risk culture also includes an examination of the organisation's

belief system as well as the analysis of the external factors and the market environment in which the organisation operates.

There are various mechanisms that can be used to evaluate the context in which ERM is implemented. This includes the use of financial ratios, especially with regards to financial risk and other tools such as the strengths, weaknesses, opportunities and threats (SWOT) and PESTLE analyses for the assessment of internal and external factors impacting the organisation. It is at this stage that the risk appetite of the organisation is set. The risk appetite defines the quantum of risk the organisation is willing to accept. Understanding the level of risk that the organisation can tolerate is necessary for the strategic alignment of organisational resources also. This, in turn, depends on the particular characteristics of the sector or industry in which the organisation is operating.

Leaders should, amongst other duties, ensure that all employees understand the concept of risk appetite at this stage. Furthermore, the most desirable or suitable type of risk culture needs to be determined here. There is also a need to assess whether leaders, executive level managers and business unit / functional unit level managers are engaged in risk taking or risk averse behaviour. Moreover, clarity should be gained as to whether the organisational culture is excessively optimistic towards risk or whether there is any over-confidence in the ability to counter risk.

Step 2 - Objective Setting – In this step, the overall strategic direction of the organisation, as well as the practices for governance and control, are defined. This is performed at both the macro and micro levels. At the macro level, the overall risk appetite statement of the organisation is set. The objective setting process, at the micro level, includes understanding the objectives of each of the business / functional units and determining the external and internal situational context in which each business / functional unit operates. The risk appetite statements at the level of the business / functional unit are then explicitly set and should reflect the objectives and perspectives of the different businesses and functions embodied by the organisation. This involves understanding the factors that influence and impact the ability of the particular unit to achieve its goals, determine the boundaries within which the unit operates, and define the risk criteria to ensure that risks are assessed consistently at all times. In this way, an organisational culture of risk that can be treated as ‘something that can be audited’ is created. The risk appetite statement ensures that the acceptable level of risk mandated by the organisation is explicitly stated in the long-term goals for the organisation and that it forms part of the mission / vision of the organisation. The form objectives related to risk treatment as articulated by the organisation. These statements should then be

communicated throughout the organisation using a code of conduct that serves as a set of behavioural guidelines for employees and managers to follow. The transactional style of leadership ensures that all employees comply with this code of conduct visibly through their actions. Here, top-level leaders are aided by the emergent or champion leaders situated at all levels of the organisational hierarchy.

The key task for leaders at this stage is to understand whether the concept of risk has been incorporated into the vision / mission statements of the organisation. It needs to be determined whether every business / functional unit formulates a unique risk positioning statement, whether risks are reflected in the KPIs used to measure performance, whether projects or work in general are being examined from the perspective of embedded risk and whether there is alignment between strategic and risk management.

Step 3 - Risk Identification – The risk identification phase involves examining risk, sources of risk, causes and potential consequences. The main aim here is to generate a comprehensive list of threats as well as opportunities that could potentially degrade or enhance the achievement of organisational objectives. However, it should be noted that not all risks represent a threat to the organisation at this stage, and some may provide opportunities. There are various methods through which risk can be classified. Some of these include conventional data management systems. However, not all risks can be objectively quantified. It is at this point that participation from all levels of the organisation becomes important. This allows a checklist of risks to be created that comprehensively outlines out all possible risks the various departments / functions believe could impact them. This is particularly important for those departments that are relevant to the risk exposure of the organisation. The enumeration of every potential risk factor is also achieved through the creation of the checklist. This check list of risks can then be analysed by experienced personnel – such as the internal audit team – who will evaluate the threat / opportunity potential of each risk. The heuristics of availability and anchoring are highly important here as the organisation may use previous experiences to identify potential sources of risk.

For the identification of events, managers need to examine whether or not there are regular brainstorming sessions being conducted for the identification of risk. Whether the organisation is aware of risk tools such as SWOT and Pestle also needs to be ascertained. Leaders should ensure involvement from all concerned with or involved in decision making, ensure that a risk register is being maintained, that domain experts and heads of business / functional units are being regularly consulted, that independent experts also participate in the

risk identification process, and determine whether outside views are accepted whenever risks are identified.

Step 4: Risk Assessment

Risk assessment is a two-stage process including risk analysis and risk evaluation. The ultimate goal here is to rank and prioritise various risks. At the risk analysis stage, the task is to comprehend the nature of the risk and examine the likelihood and consequences of risk exposure. Before achieving such ranking, the description of each risk needs to be formulated, this will depend on the context to a great extent. This description is achieved through the use of the check list of risk, risk evaluation metrics, experience of past losses and gains, risk appetite, and potential for improvements. The risks are then ranked in accordance with their likely impact. Statistical computations may also be applied in order to rank risks. However, in order to achieve a more descriptive list, and one that is in accordance with the particular risks the organisation is faced with, more involvement from all levels of the organisation is required. This also leads to short / medium and long-term planning horizons. The perspective of time indicates the point from which perspective the risk has to be addressed.

Here, leaders are primarily tasked with ascertaining the degree of exposure to risk that the organisation is subject to in the event that controls might fail and in the event that they are present. This process helps in the identification of inappropriate and ineffective controls and leads to the evaluation of risk whilst guiding risk treatment. In the risk analysis stage, the various current risk criteria are analysed in order to understand whether the risk is acceptable, tolerable, or neither. It needs to be decided whether the risks need further treatment, and the priority in which individual risks are to be treated is also identified.

Leaders need to ensure that risks are ranked and prioritised according to their timelines. They need to ensure that it is possible to quantitatively measure risk wherever possible, that it is possible to compare results to historical information / projects that have been undertaken in the past, that all available data have been considered in the calculations, that independent experts examine the risk assessment processes, that some form of benchmarking is undertaken, and that qualitative assessments – such as various methods of reflective judgement – are also incorporated into the overall assessment process.

Step 5 - Risk Response

During this stage, one or more options for modification of the risks are selected. This includes identification of treatment for risks that cross the risk tolerance limits, and providing an understanding of any residual risk – which refers to risk where controls and treatments are

already in place. This is achieved through continuous reassessment of the level of residual risk. Again, at this stage, it is necessary to identify the order in which risks should be listed, monitored and reviewed. This is the decision making and implementation stage, during which decisions are made to mitigate risks through prevention, such as making the decision to strive for greater accuracy in financial reporting in order to reduce risk stemming from financial accounting errors. A reactive response may also be adopted. In either case, the decision depends on the kind of risk and a full and accurate understanding of the risk. The level of risk appetite specified during the earlier stages will determine decision making. The decision to counter the risk should be made by also specifying action plans, timelines for implementation and listing the impacts of the decisions. A risk response chart may be formulated to better understand the various options. The main objective of this stage is to make the decisions that will result in those actions that will realise the objectives of the organisation and create sustainable competitive advantage for the organisation. At this stage, leaders need to examine if their responses are aligned with the risk appetite of the organisation, if suitable action plans have been developed, whether there are financial resources available for the control of risk, and whether responses even to non-financial risks have been identified.

Step 6 – Control Activities

This is the control stage, where adequate policies and guidelines are adopted to control the activities that have been identified for risk management. The most traditional control activities are those initiated by the internal auditing department to secure compliance with internal policies, with government regulations, and to ensure that ethical behaviour is being upheld at all times, and also to implement any changes in risk appetite. It may be noted here that all forms of controlling risk, including the boundary, diagnostic, interactive and belief systems, are geared towards the control of internal risks. This is because controlling external risks is only partially possible at the level of the organisation. Controlling external risk can only be achieved through the ongoing assessment of risks and by devising corresponding responses that meet the organisation’s objectives.

Here, leaders need to identify if policies and guidelines are regularly updated, if the activities that have been identified for treatment of risk are realistic, whether behavioural implications have been considered in activity development, if even qualitative, non –rule-based mitigation methods have been considered for the evaluation of both strategic and external risk, and if regular trainings are conducted with both employees and managers as part of the overall control system.

Step 7 - Information and communication

Communication is one of the main processes involved in effective ERM implementation. Communication should be achieved across the organisation, with the various business units, functional units and other teams. It is through communication that both the assignment and fulfilment of roles and responsibilities becomes transparent. Because of this, communication can be a thought of a control mechanism in itself, with good quality communication enhancing the quality of the risk management process. Communication that is top down as well as bottom up should be consistent and work in both directions at all times. The quality of the communication is strongly linked to the culture of the organisation. A culture where transparency is not encouraged will not be able to facilitate effective communication and consequently fail to secure effective employee participation, resulting in compromised ERM implementation.

Here, the key tasks for leaders are to ensure whether the persons in charge are communicating the risk agenda, whether employees across different levels communicate with the board directly, whether all responsibilities are communicated in a transparent and vertical manner, if t there is a technique for the communication of sensitive information, if mechanisms such as emails, newsletters and so on are used for the regular communication of information, if the active participation of employees is encouraged, as are options that deviate from the general norm, and whether critical thinking is being promoted. Leaders facilitate open and transparent discussion across different organisational levels.

Step 8 – Monitoring

During the monitoring stage, measures that can be applied effectively and can lead to the efficient detection of failures should be applied. Here, again, it is the internal audit team that plays the key role due to their responsibility in monitoring. This is also the feedback stage where the feedback that is obtained forms the input for new risk related strategy development. To that extent, this is not the final step in the ERM risk management process but it initiates the first step. During this stage, it is determined whether there is a change in the risk profile and whether any new risks have emerged. The effectiveness and progression of the treatment plan will also be assessed. This stage provides an overview of risk data, identifies emerging risks, provides feedback on the efficiency and effectiveness of control mechanisms identifies whether any additional treatment is required, facilitates the reassessment of risk priorities, and captures and redirects into the feedback loop system lessons learnt from failures and successes.

8.9. Conclusion

This chapter combined the findings of the literature review with that of both the qualitative and quantitative analyses conducted on responses given by respondents from private companies operating in the oil and gas companies in Saudi Arabia. The aim was to find out any new variables that would impact psychology of decision making amongst leaders under condition of risk and uncertainty as well as new variables that impacted the ability of leaders to influence others in the company and create a culture of organizational risk. It was found that the respondents perceived risk from purely a 'threat' point of view with ERM framework standards being employed to counter such threat. The analysis of factors impacting decision making derived from primary data included the ability to appropriately perceive risk as not just a threat but also as an opportunity, to develop a positivist, contextualist style of decision making and to consider how emotion and culture impacts decision making processes as well. The analysis of factors impacting the ability of leaders to create an organizational culture of risk that were identified from the primary data include the ability to increase risk appetite of the organization as a whole, the ability to communicate the risk appetite to others in the company, to develop an ethical organization, role identification, transformative leadership and to develop emergent / champion leaders at all levels of the company.

Chapter 9 – Conclusion

9.1. Introduction

This dissertation attempts to bridge a key gap in the literature on psychology leadership. The specific type of leadership that leads to effective ERM implementation has to be identified with a focus on the psychology of decision making under condition of risk and uncertainty and the ability to influence others to create an organizational culture of risk. Both primary and secondary data were used in this dissertation. This chapter examines whether the objectives of the research have been met, identifies limitations and makes recommendations for the future scope of this research.

9.2. Conclusion

This research was motivated by the need to find out ways and means of increasing the efficacy of implementation of the ERM framework amongst Saudi Arabian private organisations. Enterprise Risk Management is a contemporary form of risk management and has been devised in order to counter various risks that modern organizations have to contend with. There are various kinds of ERM frameworks containing rules, principles and standards that indicate how to contain existing risks and pre-empt future risks. However, the literature on ERM has revealed a gap between aspiration and realisation of effective ERM implementation. This means that current risk management practices and standards are not being implemented proactively or in a manner that can effectively counter risks impacting modern organizations. The literature indicated that the implementation of ERM is primarily the responsibility of the senior leaders or the Board of directors of an organization. The implication is that the leaders of the organization should effectively implement ERM and any failure to do so is a failure of leadership. This means that there are additional psychological features that should feature in any psychology of leadership such that leaders are able to make rational decisions under the condition of risk and uncertainty and create an appropriate risk culture within the organisation. The psychological factors that have been identified from the literature as influencing decision making ability under condition of risk and uncertainty – including mental protective frames that lead to risk acceptance or risk avoidance, psychometric paradigms and bias - are purely theoretical and need to be empirically validated.

In this context, this research takes the stance that the board of directors, in their capacity as leaders of the organisation, needs to understand the underlying dynamics involved in the proper implementation of ERM that will lead to effective ERM implementation and

successful outcomes. This section examines whether the main aims of the research discussed in section 1.6 have been achieved.

The first aim of this research was to investigate the Influence of the Psychology of Leadership on Enterprise Risk Management. Please see Aim 1 in section 1.6 of chapter 1.

From the analysis of qualitative and quantitative data, it was found that failures in ERM implementation may be attributed to faulty decision making that is the result of the faulty perception and interpretation of risk amongst senior leaders in Saudi Arabian private sector organizations. Risk is invariably conceived to be a threat. The fact that risk can also include opportunities is not considered at all. Decisions are made in an individualistic manner and do not incorporate multiple viewpoints from subordinates. The respondents' data revealed that a positivist, deterministic approach is taken when making decisions. This method of decision making has been termed 'positivist–deterministic', as risk is considered to be something that is deterministic, absolute and universal.

However, this deterministic process of making decisions is argued to be incomplete. For instance, Beach and Lipshitz (1993) criticise the formal-empiricist and rationalist frameworks for their failure to take the decision maker's psychological process into account. Hammond *et al.* (2001) also point out that real-life decision making is a dynamic process that cannot be accounted for through purely deterministic or rational methods. Moreover, these frameworks do not address the mental processes that an individual experiences under the condition of risk. The KPMG (2005) also notes that the standards-based approach to ERM implementation has been largely ineffective, which may be attributed to faulty decision making processes. The implication that may be made here is that decision making processes in the context of ERM implementation in the organizations considered in this research do not lead to desired outcomes.

The primary data also indicated that risks are conceptualized as black and white entities. Risks are occurrences that are real, tangible and measurable. Decisions are taken based on stakeholder expectations and compliance. This problem-solving method is rational, analytic and driven by factual / accurate data. Decisions will not be made on the basis of data that are incomprehensive, inadequate or uncertain. A quantitative approach to decision making is invariably used, where decision makers will chose those options with the highest utility. This decision is considered to be the most optimal one. Moreover, decision making is heavily influenced by what decisions have been taken in the past when risks similar to current ones

have occurred. This is evident based on the respondents' strongly agreement that current decision-making processes are heavily influenced by recovering past losses. Respondents indicated that it is not possible to ignore past losses, which are tangible occurrences that have actually happened in the past.

From the qualitative analysis, 5% of the respondents found to make decisions using the contextualist method. Contextualist respondents were found to be more proactive compared to the positivists, who are reactive. They adopted a group approach for the achievement of goals as opposed to the self-driven, individualistic decision-making modes of the positivist group. Contextualists do not make decisions in isolation and will communicate and consult with others, seeking their support if this will facilitate the achievement of goals. Contextualists therefore use contextual knowledge to arrive at decisions and make deliberate efforts to obtain such information, as and when required.

It may be concluded that the method of making decisions in Saudi Arabian private organisations is in accordance with the principles of classical decision theory, which assumes that individuals are always well-informed, possess complete data and act in a world of absolute certainty, hence making rational and systematic decisions that secure their self-interest (Carroll and Johnson, 2009). However, this method of decision making does not acknowledge that human capability has to be considered in the decision-making process under the condition of risk and uncertainty, and that decision making should be understood in the context of a dynamic work/business environment (Zsambok and Klein, 1997). In this context, Nutt (2009) states that critical decisions are risky due to the ambiguity, conflict and uncertainty that occur in real life situations. Critical decisions become bad or wrong when ambiguities and uncertainties are not considered, treated superficially or even ignored during decision making. Slovic (2000) stated that the wrong decisions are made when faulty mental reasoning results in the erroneous consideration of risky situations. Here, the wrong decision is one that does not lead to the desired outcome. The implication is that both the mental processes of leaders and the context in which decision making occurs should be considered during the ERM decision-making process and that this is currently not being done organizations considered in this research.

The quantitative reviews revealed that whilst boards of directors and CEO's are responsible for making decisions, these decisions have to be implemented by subordinates in the organization. It was found that the style of leadership adopted by most of the organisations operating in the Saudi private sector is authoritarian and hierarchal. Whilst employees are

looked after in terms of rewards, incentives, training and development, it is evident that leaders do not wish to share decision-making powers with subordinates, nor do they delegate critical decision making-authority to them. There was no participatory effort made in decision making when such participation meant involving subordinates. The implication is that instructions for ERM implementation given by the top management executives in the various organisations, and they are expected be executed by their subordinates. This analysis indicates that the style of leadership in Saudi Arabian organizations is typical of the old psychology of leadership which focuses on the individual rather on the group. Hillman and Dalziel (2003) point out that the individualistic frameworks of leadership consider only imposition of will and/or incentivisation to secure compliance. However, since these means cannot influence others through the heart and mind, these means are now considered indicators of leadership failure even if they achieve compliance.

It was also found that the organisational culture in most Saudi Arabian organisations is not supportive of risk, nor does it support the effective implementation of ERM standards. From the literature review, as well as qualitative analysis, a specific set of circumstances were identified for creating a risk-based organisational culture that supports the effective implementation of ERM. This includes the ability to sense and communicate risk, the presence of a flat organisational structure, open and transparent communication, and a participatory style of decision making (Huse, 2007), (Pearce, 2004). All of these factors facilitate the psychological perception of a risk-based culture within organisations. The overall conclusion here is that neither risk nor effective ERM implementation are supported within the organisational culture of the organizations considered in this research.

Various factors were found to influence decision making processes under the condition of risk and uncertainty. More than 80% of the respondents consider risk to be a multi–dimensional concept that cannot be reduced to an easily-quantifiable entity. At the same time, risks were considered to be absolute and knowable. Various features are utilised in order to make decisions in this context. There is an overwhelming dependence on information and on technical / statistics-based systems during the decision-making process. The inference is that a lack of data or knowledge about a particular situation would increase perception of its risk levels. There is less reliance on subordinate group-based decision making processes. This means that respondents prefer to interact with their peers or with their superiors only when arriving at decisions. Respondents indicated that individuals lower down the organisational hierarchy are rarely consulted with for arriving at decision. A major finding is that loss aversion has resulted in risk aversion, and both drive the decision-making processes of the

respondents. It is apparent that the respondents reject probabilities and do not focus on matching expected values with different decision outcomes. Rather, decisions are made with consideration of the potential size of loss. The broad conclusion that may be arrived at in this case is that leaders of private organisations in Saudi Arabia are extremely cautious and prefer to focus on the downside of a decision.

The reason for this is that they have low tolerance with uncertainty of outcomes that may occur from the decisions they take. Decision-making strategy is characterised by loss avoidance rather than the potential for greater profit. A number of factors are found to increase the perception of risk in any particular situation. This includes a possible range of outcomes that might result from a decision, the possibility of loss and the quantity of loss associated with a particular decision. The various responses also indicate the operation of various heuristic biases in the decision-making process when respondents have to choose between different risky alternatives. These include how the risk situation is framed and past experience, as well as availability of data. The respondents indicate a preference for high-probability outcomes whilst hesitating to make decisions in cases of low-probability outcomes.

The second aim of this research was to develop a framework and provide academic and practitioner guidance on how the Psychology of Leadership influence ERM Please see Aim 2 in section 1.6 of chapter 1.

The framework that was developed on the basis of the findings from the literature review and primary data is based on psychology of leadership related to decision making and creating organizational culture of risk. Leadership quality is impacted by two primary factors, the first being decision-making ability under the condition of risk and uncertainty, and the other being a strong organisational risk culture. Both of these factors were found to be impacted by other sub-factors which have also been summarised in the framework. Decision making was found to be influenced by how risk-seeking or risk-averse the leader is. It is influenced by the protective zones adopted by the decision maker at times of risk. Other factors include psychometric paradigms, attitudes, heuristics leading to bias, the cultural background of the individual, impact of surrounding culture and gender.

All of the factors derived from the literature review were also validated through the empirical surveys conducted. The empirical surveys revealed other factors, including the perception of risk, different styles of decision making and the role played by emotion. Leadership style was

proven to play a heavily significant role in the shaping of organisational culture. The literature showed that a leadership style that encourages team participation, where the qualities of the leader match team aspirations, where leaders are context sensitive, promote the interests of the team, and are able to sense and communicate risk well, facilitate an atmosphere of transformative learning, is optimal for achieving effective ERM implementation. These factors were also validated by the empirical survey. In addition, the empirical survey also indicated that developing an organisational culture featuring a high risk appetite, the ability to communicate that risk appetite throughout the organisation, developing an ethical organisation, formulating clear roles and responsibilities, and fostering emergent / champion leaders, positively impacts organisational culture.

9.3 Contribution to Knowledge and the Literature

This section summarizes the key findings of this research and explains how these findings contribute to the literature on psychology of leadership and effective ERM implementation. Table 9-1 summarizes these contributions and is followed by the explanation.

Table 9-1 Contributions to Research

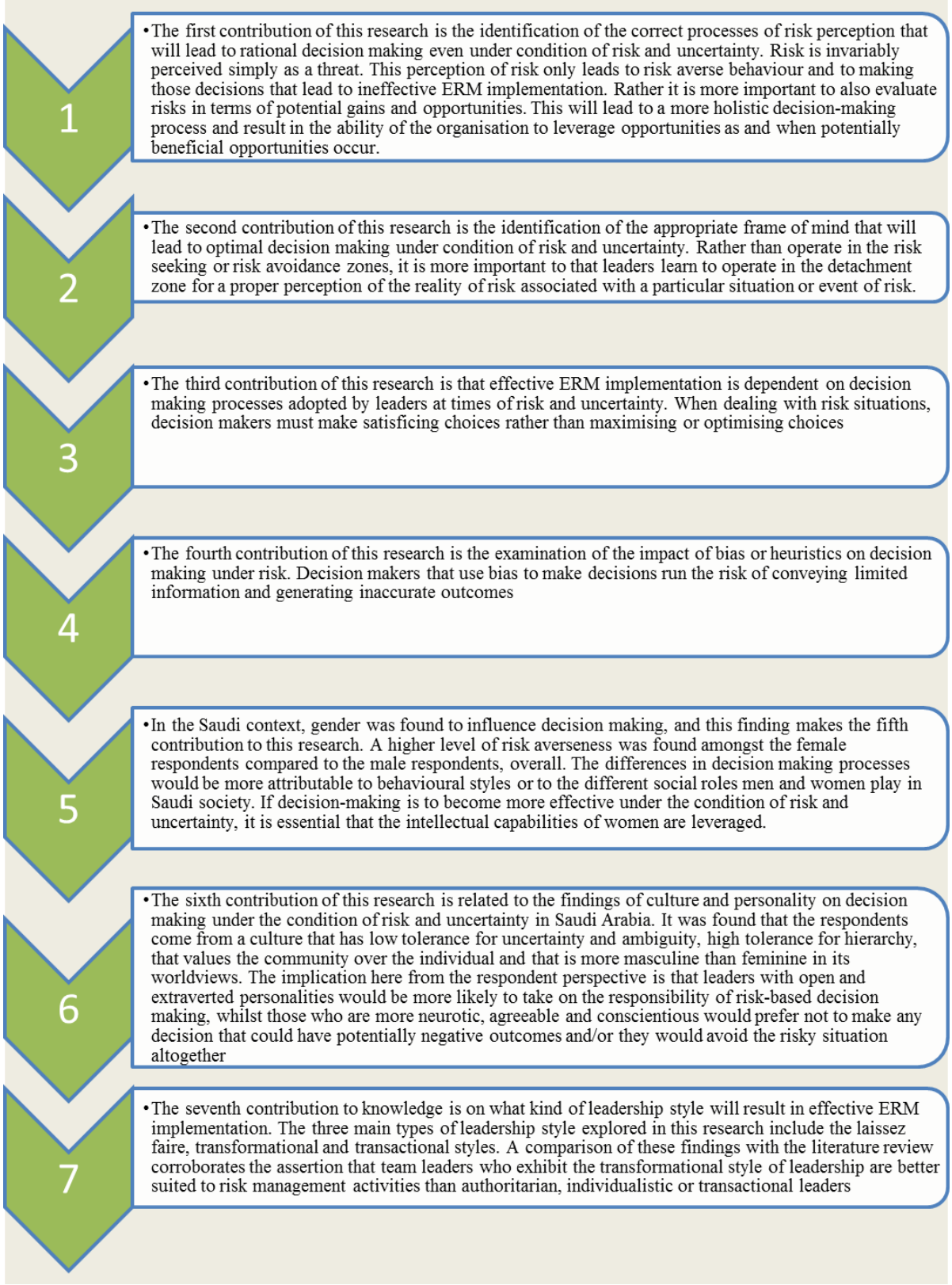

Figure 8-6 *Contributions to Research*

Source: Researcher

The first contribution of this research is the identification of the correct processes of risk perception that will lead to rational decision making even under condition of risk and uncertainty. Decision making in risky situations is dependent on how risk is perceived. Risk is invariably perceived simply as a threat. The assumption made is that risk is a subjective entity that can be quantified accurately at all times. However, this research takes the view that risk is a complex phenomenon and cannot be relegated or reduced to something threatening or something that has to be avoided or feared. This perception of risk only leads to risk averse behaviour and to making those decisions that lead to ineffective ERM implementation. Rather it is more important to also evaluate risks in terms of potential gains and opportunities. This will lead to a more holistic decision-making process and result in the ability of the organisation to leverage opportunities as and when potentially beneficial opportunities occur.

The point being made here is that risk perception is of considerably greater significance in decision-making processes than the actual risk itself. Every risk situation or event should be viewed from an interdisciplinary, multidimensional perspective. This implies that viewing risk from a singular, individualistic point view of risk is undesirable. Rather, many perspectives should be taken into consideration and verified so that a consistent set of facts may be drawn out from the multiple views that can then form the basis of a more objective decision-making process. Risk perception is also relative and never absolute. It is for this reason that judgments and decisions based on risk cannot be absolute. That is, there is no judgement that may be taken that absolutely negates risk and results in a ‘zero risk’ or ‘zero uncertainty’ situation.

The second contribution of this research is the identification of the appropriate frame of mind that will lead to optimal decision making under condition of risk and uncertainty. This research uncovered three possible mental frames that every individual may adopt when there is a perception of threat. At one extreme is the heightened perception of risk and trauma associated with feelings of fear, anxiety and worry and leads to a person adopting a mental protective frame of risk avoidance. At the other extreme is the frame of confidence, where a situation of risk creates feelings of excitement that causes the persons to engage in greater risks. At the midway point lies the detachment zone, where the risky situation is viewed objectively, without the influence of emotion. An individual operating in this frame does not feel threatened, nor is he or she unduly excited. It is this frame that this research associates with as being the best for evaluating risk, as it eliminates the subjectivity associated with the

other two frames. The implication for this research is that leaders should learn to operate in the detachment zone for a proper perception of the reality of risk associated with a particular situation or event of risk.

The third contribution of this research is that effective ERM implementation is dependent on decision making processes adopted by leaders at times of risk and uncertainty. It is important for leaders to examine the filters that are being used to understand their particular contexts of risk and how these filters impact decision making. Risk information or data on risk itself does not automatically preclude efficient decision making. To be effective, decision making has to include processes through which information is converted into sense or meaning by the decision maker and then applied in an organisational context. Sense, in turn, is created not only by the individual, but through intrapersonal and interpersonal dialogues both with the self at the individual level and with significant parties at the collective level. The broad recommendation that may be made here is that it is the current deterministic style of decision making that attempts to replicate the rationalist decision making style that has to give way to the contextualist style of decision making, which should be employed by leaders at times of risk or uncertainty. Decision-making style should be influenced by a group approach for decision making as opposed to the self-driven, individualistic decision-making modes of rationalists. Decision making cannot be a highly individualistic process wherein only senior leaders take their decisions in isolation from the rest of the company. Leaders should communicate and consult with others and seek their support in order to realise goals. Both human factors and the significance of data are incorporated under the contextualist type of decision making. It is the acknowledgement of constraints and limitations that operate at the individual level at times of risk that necessitates the need to make decisions at the group level. Because these decisions are taken under the condition of uncertainty, their outcomes cannot be wholly known, but this does not preclude the most satisficing one from being chosen. This means that when dealing with risk situations, decision makers should make satisficing choices rather than maximising or optimising choices.

The fourth contribution of this research is the examination of the impact of bias or heuristics on decision making under risk. Hartman *et al.* (2012) state that both emotion and societal opinion combine to form misconceptions called ‘bias’ that impact the individual’s ability to judge events and make decisions rationally. The most important biases were found to be that of representation, availability and anchoring, which were particularly found to impact decision making under the condition of risk and uncertainty. Whilst they may offer a quick

solution to risk problems, the broad finding is that heuristics are undesirable factors that lead to erroneous decisions being made. Heuristics can lead individuals to overestimate or underestimate the consequences of their decisions, the risk itself or the probability of success. Heuristics were found in this study to result in less valid judgments being made. The danger here is that if the decision-making processes are determined through bias, the outcomes can be potentially disastrous for the entire organisation as well as to its employees. Decision makers that use heuristics to make decisions run the risk of conveying limited information and generating inaccurate outcomes.

In the Saudi context, gender was found to influence decision making, and this finding makes the fifth contribution to this research. Whilst no differences were found with respect to intellectual capacity, cognitive reasoning processes or to the intellectual capacity between male and female respondents, a higher level of risk averseness was found amongst the female respondents compared to the male respondents, overall. The differences in decision making processes would be more attributable to behavioural styles or to the different social roles men and women play in Saudi society. This is not to suggest that females should be excluded from the decision-making processes in private organisations in Saudi Arabia, but steps should be taken to break down cultural barriers that prevent female participation in decision-making processes. Therefore, if decision-making is to become more effective under the condition of risk and uncertainty, it is essential that the intellectual capabilities of women are leveraged.

The sixth contribution of this research is related to the findings of culture and personality on decision making under the condition of risk and uncertainty in Saudi Arabia. It was found that the respondents come from a culture that has low tolerance for uncertainty and ambiguity, high tolerance for hierarchy, that values the community over the individual and that is more masculine than feminine in its worldviews. A more guarded approach to situations of risk was highlighted as being preferred by the Saudi participants in this study. With regards to personality, the implication from the respondent perspective is that leaders with open and extraverted personalities would be more likely to take on the responsibility of risk-based decision making, whilst those who are more neurotic, agreeable and conscientious would prefer not to make any decision that could have potentially negative outcomes and/or they would avoid the risky situation altogether.

The seventh contribution to knowledge is on what kind of leadership style will result in effective ERM implementation. The three main types of leadership style explored in this research include the laissez faire, transformational and transactional styles. The ultimate responsibility for ERM implementation lies with organisational leaders, and this point cannot

be rationally contested. A comparison of these findings with the literature review corroborates the assertion that team leaders who exhibit the transformational style of leadership are better suited to risk management activities than authoritarian, individualistic or transactional leaders. In a world characterised by greater uncertainty and rapid changes, no individual has all the answers to all of the problems and risks that exist. Team leadership facilitates the development of strength and reduces the impact of allowable weaknesses. Such leadership facilitates a more holistic and participative style of leadership, including teamwork, problem solving and innovation - all of which may be used to counter risk. This finding has key significance in the context of the board of directors due to the very nature of the board, which mandates that its members work as a team and not as individuals. Another aspect of the new psychology of leadership is that the leader should also serve in order to become a team leader. This implies that the leader should not just lead, but also have the capability to follow. In effect, the master should take on the role of servant, at times. Other aspects related to leadership include shared and dispersed leadership styles, which facilitate the emergence of leaders at all levels of the organisation that can exert a significant influence over their colleagues and, by doing so, aid the higher echelons of management in securing organisational goals such as risk management. These are emergent leaders or champion leaders associated with formal organisational power roles or hierarchies at every organisational level, and who are identified on the basis of the relationship they have with the larger social group – the organisation.

The eighth contribution of this study is on how organisational culture can lead to effective ERM implementation. Risk, in the context of organisational culture, is defined in terms of risk appetite and risk tolerance. Whilst risk appetite indicates the maximum risk that may be accepted by an organisation, risk tolerance refers to the minimum risk acceptable by an organisation. Organisational culture determines these upper and lower limits of risk acceptance. Risk culture was found to be entirely related to risk-taking, to how risk averse or brave organisational members are they are. Risk culture essentially refers to the decisions that individuals are willing to make. Risk culture is about developing a greater appetite and tolerance for risk and it is also all about the ways in which employees are made aware of risk. The creation of an organisational culture with a strong risk appetite lies primarily in the hands of senior managers, whilst risk culture is largely the responsibility of boards of directors and CEOs. A key finding from the analysis, however, is that every employee who makes decisions is a key player in developing a strong risk appetite within the organisation.

Furthermore, communication is highlighted as a major factor in the development of risk culture. The analysis of the qualitative responses indicates that communication lies at the heart of all the other factors responsible for creating risk culture, including shared vision, positive work environment, job satisfaction, participatory decision-making, empowerment, employee satisfaction and trust. The creation of an ethical organisation is also regarded as facilitating the development of an organisational culture of risk. It may be inferred that developing organisational risk culture entails three essential elements, which encompass all of the points discussed above, including: (i) developing a strong risk appetite; (ii) communicating, monitoring and updating the risk appetite; and (iii) developing an ethical organisation. The achievement of these three elements initiated and controlled by leaders, will lead to a stronger risk culture being developed.

The 9th contribution to this research is the development of a framework related to the leadership of ERM implementation. This framework will serve to provide implementation guidance on leadership development, decision making and ERM implementation. From section 4.2 of chapter 4, it was identified that various ERM frameworks such as the COSO (2016) framework, the New Zealand Transport Agency (NZTA) (2013) ERM framework, the Toronto Transit Commission (TTC) (2015) ERM framework and the Baumann Standards-based ERM framework only provide guidelines for ERM implementation. This finding highlights that merely incorporating these frameworks into organizational risk management strategy does not mean that an organization is adequately prepared to counter risk. This means that it is more important to understand how to effectively implement ERM frameworks and the factors that lead to effective implementation by leaders of the organization. This research provides an indication of how this can be done through the framework developed in Figure 4.7. This framework places the responsibility for effective ERM implementation on the senior leadership of the organization The framework indicates that effective ERM implementation depends on risk decision making capability of leaders and their ability to create a risk resilient culture in the organization. Both these abilities are collectively termed as the “Psychology of Risk Leadership” in figure 4.7. Hence this framework is also termed as the Psychology of Risk Leadership framework.

The Psychology of Risk Leadership Framework in Figure 4.7 provides an understanding of the factors that enable leaders to make rational decisions under condition of risk & uncertainty as well as develop an organizational risk culture in an organization. There are

internal and external factors that go into developing a psychology of leadership that can lead to effective risk decision making and building an organizational culture of risk. The internal factors relate to the specific mental processes that individuals experience under the condition of risk and uncertainty and in which they have to make decisions. The framework indicates that some of the important internal psychological factors to be considered in developing a psychology of decision making include assessing whether a leader is risk seeking, risk averse or detached. The framework indicates that a detached psychology is the best suited to making rational decisions under the condition of risk and uncertainty, while risk seekers and risk averse persons make potentially subjective decision. The 'attitude' of the person towards risk also impacts thinking and hence the factor of attitude should also be considered in any psychology of decision making. The differences in the way men and women think is also important psychological factor that should be considered in the psychology of decision making. The 'impact of the culture from which the individual hails on his / her thinking' is another psychological variable that should be considered. The framework also indicates the various psychological factors that operate and can potentially bias the individual from making rational decisions and states that leaders can also be influenced by past experience or opinion of others when making decisions at the time of risk through a factor called 'psychometric paradigms'. External factors include impact of surrounding culture, government regulation, economy & finance and politics.

The framework also indicates the various internal and external psychological factors that are involved in the second important dimension that leads to effective ERM implementation, i.e. the ability to create an organizational culture of risk in the company. An understanding of these factors is necessary to examine how leaders might influence their subordinates to create a risk tolerant, risk prepared and risk resilient culture in an organization. Some of the internal factors include the ability to create a 'one of us' perceptions amongst employees compared to 'one of them' or 'only for themselves'. Leaders must think in terms of a "Team Player" and be a "We" person rather than an "I" person. Another psychological factor is the ability to collectively promote the "Team Aspiration" of the group rather than an individualistic ideology alone. Leaders must be aware or "Sensitive to the Context" or "Sensitive to the Perspective" in which risk occurs. Leaders must be "Charismatic" which is that special quality that secures voluntary compliance from subordinates. The leader should also be able to action insights derived from sense being made out of risk. Thus, the ability to take Action is another factor related to organizational risk. Leaders should be able to identify risks and opportunities and have knowledge of the world that will enable to them to identify such risks

and opportunities. Leaders must be able to create a perception that the interests of their team are being promoted to secure their co-operation in a risk implementation program. Leaders should also be able to transformatively learn in order to develop the competencies that lead to enhanced decision making and action capability. A culture of risk management should be built within a top-down and bottom-up structure where the leader is perceived to be 'part of the group' or 'engaging in group activity'. Leaders must have the ability to 'sense risk' and 'communicate risk' in order to create an effective culture of organizational risk. The external factors include impact of surrounding culture, government regulations, economy & finance and politics. The framework in figure 4.7 indicates that to the extent leaders are able to incorporate the psychological factors indicated, they will be better able to make decisions under condition of risk & uncertainty and successfully build a culture of organizational risk which will lead to proficient ERM implementation.

9.4 Research Limitations

The limitations of this research are indicated below:

The first limitation of this research is that it does not conduct statistical tests to explore positive and significant links between the various dimensions of the psychology of risk leadership and the benefits of an effective ERM implementation. For example, the links between the ability to think in an emotionally detached frame of mind and better response to risk as and when it occurs has not been explored from a statistical point of view. The literature and the respondents only indicate that better ability to make decisions under conditions of risk and uncertainty and developing an organizational risk culture will better help counter risk and exploit opportunities.

It was possible to interview only 42 respondents in the qualitative survey and 100 respondents in the quantitative survey. This was on account of shortage of time on the one hand and the reluctance of Saudi companies to allow their employees to be interviewed on the other. A larger sample size would have led to more objective results. The small sample size is one of the limitations of this research. However, care was taken to ensure that top level / senior level executives were considered which to a certain extent mitigates the impacts of a smaller sample size.

It was possible to only analyse companies operating in the oil and gas sector. For more broad results, it would have been better if companies operating in different sectors could have been considered. However, the Researcher found that all of the private sector companies operating

in Saudi Arabia and which consented to participate in the research only operate in the oil and gas sector.

The Researcher could not find new theories of leadership post 2013. Most of the references are dated from 2013 or previously. This is one of the limitations of the research as access to modern theories of leadership would have enabled identification of more dimensions of the psychology of decision making and formulating an organizational culture of risk.

Another limitation of this research is that it focused on the implementation of standards based ERM framework only. However, there are other specific ERM frameworks designed for specific sectors whose implementation has also to be examined from the perspective of the psychology of risk leadership.

9.5. Implications for Future Scope of Research

The areas for future scope for research related to the topic on psychology of risk leadership and ERM implementation are as follows:

This research takes the point of view that the two key dimensions related to psychology of risk leadership are related to decision making and the ability to influence others in the organization who then work together with senior management to create an organizational culture of risk. However, there may be other dimensions related to psychology of risk leadership which can be explored through future research.

How specific ERM frameworks designed for de-risking a particular sector – such as the financial sector or the petrochemicals sector – should be implemented and the psychological dimensions of leaders related to decision making and the organizational culture of risk with respect to these specific sectors offers future scope for research.

Using statistical tests to test for significant relationships between psychology of risk leadership and the benefits of an effective ERM implementation offers future scope for research. This will eliminate any ambiguities or uncertainties about which psychological factors impact effect ERM implementation more significantly.

References

Advisen and Rims (2013) *2013 RIMS Enterprise Risk Management (ERM) Survey*. Zurich Mary Roth,

Amaratunga, M., Baldry, D. (2002) Moving from performance measurement to performance management. *Facilities*, Vol. 20 (5), pp. 217 – 223.

AON Risk Services Australia Limited (AON) (2009) *AON Australia's 2004/2005 Risk Management and Total Cost of Insurable Risk Survey.* Sydney: AON Australia Limited.

Atteslander, P. (2010) *Methoden der empirischen Sozialforschung*. Berlin, Erich Schmidt Verlag GmbH and Co KG

Apter, M. J. (1992) *The Dangerous Edge*, New York: Free Press.

Aven, T., Renn, O. (2013) On Risk Defined as an Event where the Outcome is Uncertain. *Journal of Risk Research*, Vol. 12(1), pp. 1-11.

Adams, N. (2012) Skinners Walden Two : An anticipation of positive psychology? Review of General Psychology, Vol.16(1), pp.1-9.

Avey, J.B., Avolio, B.J., Crossley, C.D., Luthans, F. (2011) Psychological ownership. Journal of organizational behaviour, Vol.22(2), pp.282-294.

Avey, J.B., Luthans, F., Youssef, C.M. (2015) The additive value of positive psychological capital in predicting work attitude and behaviour. Journal of Management, Vol.36(2), pp.420-452.

Barton, Thomas L., William, G., Walker, P.L. (2002) *Making Enterprise Risk Management Pay Off: How Leading Companies Implement Risk Management.* New Jersey: Financial Times/Prentice Hall PTR.

Bassot, Barbara (2015). "Bringing assumptions to the surface". The reflective practice guide: an interdisciplinary approach to critical reflection. Abingdon; New York: Routledge. pp. 79–92.

Busman, E. R., Zuiden, P. V. (2009) The challenge ahead: Adopting an enterprise wide approach to risk. *Journal of Risk Management*, Vol. 45(1), pp. 14-17.

Block, L. (2003) The leadership-culture connection: an exploratory investigation. *Leadership and Organizational Development Journal*, Vol. 24 (6), pp. 318-334.

Bessis, J. (2010) *Risk Management in banking.* Wiltshire, Wiley.

Berry, A. J. (2000) Leadership in a new millennium: the challenge of “risk society”. *The Leadership and Organization Development Journal,* Vol. 21(1) pp. 5-12.

Beach, L. R., Mitchell, T. R. (2008) A Contingency Model for the Selection of Decision Strategies. *Academy of Management Review,* Vol. 3(3), pp. 439-449.

Beach, L. R., Lipshitz, R. (1993) Why Classical Decision Theory is an Inappropriate Standard for Evaluating and Aiding Most Human Decision Making. *Decision Making in Action: Models and Methods* (pp. 21-35). New Jersey: Ablex Publishing.

Breakwell, G. M. (2007) Mental Models and Social Representations of Hazards: The Significance of Identity Processes. *Journal of Risk Research,* Vol. 4(4), pp. 341-351.

Barone-Adesi, G., Mancini, H., Shefrin, L. (2012) *A Table of Two Investors: Estimating Risk Aversion, Optimism, and Overconfidence.* Dateien Institute.

Blumberg, B., Cooper, D R., Schindler, P.S. (2005) *Business research methods*. London: McGraw

Baumann, S. (2012) *How to amend biased risk perception in enterprise risk management*. Berlin, Berlin School of Economics and Law.

Blaikie, N. (2007) *Approaches to social enquiry: Advancing knowledge.* London, Polity Publications.

Besky Gilovich, T., Griffin, D., Kahneman, D. (2002) *Heuristics and Biases: The Psychology of Intuitive Judgement*. Cambridge, UK: Cambridge University Press.

Berns, Gregory S., David Laibson, and George Loewenstein. 2007. Intertemporal choice--toward an integrative framework. Trends in Cognitive Sciences 11(11): 482-488.

Bhatnagar, J. (2012) Management of innovation: role of psychological empowerment, work engagement and turnover intention in the Indian context. *The international journal of human resource management*, Vol.23(5), pp.928-951.

Bryman, A. and Bell, E. (2015) Business research methods. Oxford University Press, USA.

Carmeli, A., Ben-Hador, B., Waldman, D.A. (2014) How leaders cultivate social capital and nurture employee vigor. *Journal of Applied Psychology*, Vol.94(6), pp.1553-1561.

Cohrs, J.C., Christie, D.J., White, M.P. (2013) Contributions of positive psychology to peace. *Journal of American Psychologist*, Vol.68(7), pp.590-600.

Coplan, J.H. (2013) *How positive psychology can boost your business*. Bloomsberg Business.

Camerer, C.F., Loewenstein, G. (2003) *Behavioral Economics: Past, Present, Future*. Working Paper Caltech and Varengie-Mellon University.

COSO (2009) *Enterprise Risk Management Integrated Framework Executive Summary.* Committee of Sponsoring Organisations of the Treadway Commission (COSO).

COSO (2010) *COSO's 2010 Report on ERM: Current State of Enterprise Risk Oversight and Market Perceptions of COSO's ERM Framework.* Committee of Sponsoring Organisations of the Treadway Commission (COSO).

Compliance Week (2007) How did BP's risk management lead to failure? Available at <https://erm.ncsu.edu/library/article/bp-risk-management />> Accessed on 10th February, 2017.

Casualty Actuarial Society (CAS) (2003) *Overview of Enterprise Risk Management.* Enterprise Risk Management Committee.

Caretta, A., Farina, V., Schwizer, P. (2010) The day after Basel 2 : Do regulators comply with banking culture? *Journal of Financial Regulation and Compliance*, Vol. 18(4), pp. 316 – 332.

Collis, J. and Hussey, R. (2013) Business research: A practical guide for undergraduate and postgraduate students. Palgrave macmillan.

Creswell, J.W. (1998) *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, California: Sage Publications Inc.

Creswell, J. and Plano Clark, V. (2010) Designing and Conducting Mixed Methods Research. 2nd edn. London, UK: Sage Publications, Ltd.

Creswell, J. (2012) Qualitative inquiry and research design: choosing among five traditions. 3rd edn. Thousand Oaks, CA: Sage Publications, Inc.

Creswell, J. (2013) Research design: Qualitative, quantitative, and mixed methods approaches. 4th edn. Thousand Oaks, CA: Sage Publications, Inc.

Chen, R., Wang, J., Herath, T., Rao, H. R. (2011) An investigation of email processing from a risky decision making perspective. *Decision Support Systems*, Vol. 52(1), pp. 73-81.

Carroll, J. S., Johnson, E. J. (2009) *Decision Research – A Field Guide.* Applied Social Research Methods Series Volume 22. Newbury Park, CA: Sage.

Crouchy, M., Galai, D., Mark, R. (2006) *The Essentials of Risk Management*. New York: McGraw-Hill.

Croom, S., Romano, P., Giannakis, M. (2000) Supply Chain Management: An Analytical Framework. *European Journal of Purchasing and Supply Chain Management*, Vol. 6(1), pp. 67-83.

Dafikpaku, E. (2011) *The Strategic Implications of Enterprise Risk Management: A Framework*. 2011 Enterprise Risk Management Symposium, Society of Actuaries.

Denk, N., Exner-Merkelt, R. (2005) How to Demonstrate Rigor When Presenting Grounded Theory Research in the Supply Chain Management Literature. *Journal of Supply Chain Management*, Vol. 47 (4), pp. 64–72.

Denis, J., Kisfalvi, V., Langley, A., Rouleau, L. (2011) Perspectives on strategic leadership. *SAGE Handbook of Leadership*, London, UK: Sage Publications.

Dash, B. K. (2006) *Role of Decision Making in Risk Management Implementation.* Paper presented at the 20th IPMA World Congress on Project Management, Shanghai, China.

Derby, S. L., Keeney, R. L. (1981) *Acceptable Risk*. Cambridge, UK: Cambridge University Press.

Dickinson, G. (2005) The Evolution of Enterprise Risk Management. *Risk Management and Innovation in Japan, Britain and the United States* (pp. 150-161). New York, Routledge.

Dash, B. K. (2006) *Role of Decision Making in Risk Management Implementation.* Paper presented at the 20th IPMA World Congress on Project Management, Shanghai, China.

Donaldson, S.I., Ko, I. (2015) Positive organizational psychology, behaviour and scholarship. The Journal of Positive Psychology, Vol.5(3), pp.177-191.

Duckworth, A.L., Steen, T.A., Seligman, M.E. (2015) Positive psychology in clinical practice. Annual Review of Clinical Psychology, Vol.1, pp.629-651.

Easterby-Smith, M., Graca, M., Antonacopoulou, E., Ferdinand, J. (2008) Absorptive Capacity: A Process Perspective. *Journal of Management Learning*, Vol. 39(5), pp. 483-501.

Economist Intelligence Unit (EIU) (2007) Best practice in risk management, A function comes of age. New York, EIU.

Eduljee, G. H. (2000) Trends in Risk Assessment and Risk Management. *Science of the Total Environment*, Vol. 249(1-3), pp. 13-23.

ERM Initiative Faculty (2014)

Fox, N. J. (2003) *Capability Maturity Model for Risk Management (RM-CMM).* New York, McMillian Publications.

First National Risk & Culture Study". The Cultural Cognition Project at Yale Law School. Retrieved July 21, 2012.

Frame, J. D. (2003) *Managing Risk in Organisations: A Guide for Managers*. San Francisco: Jossey-Bass.

Froman, L. (2014) Positive psychology in the workplace. Journal of Adult Development, Vol.17(2), pp.59-69.

Ganter, A., Hecker, A. (2013) Deciphering antecedents of organizational innovation. Journal of business research, Vol.66(5), pp.575-584.

Gatto, K. (2015) An experimental study of the impact of positive psychology on innovative work behaviour, Dissertation, ProQuest.

Godin, B. (2015) Innovation Contested. The Idea of Innovation over the centuries. Routledge.

Goepel, M., Holzle, K. (2014) Individuals innovation response behaviour. A framework of antecedents and opportunities for future research. *Creativity and innovation management*, Vol.21(4), pp.412-426.

Gill, J., Johnson, P. (1991) *Research Methods for Managers.* London: Paul Chapman Publishing Ltd.

Greene, J. C., Caracelli, V. J. (1997) *Defining and describing the paradigm issue in mixed method evaluation. Advances in mixed method evaluation*. The challenges and benefits of integrating diverse paradigms. San Francisco: Jossey-Bass.

Goldstein, W. M., Hogarth, R. M. (1997) *Research on Judgement and Decision Making: Currents, Connections and Controversies*. Cambridge, UK: Cambridge University Press.

Gandz, J., Seijts, G. (2013) Leadership and risk culture. *Ivy Business Journal*, Vol. 39, pp. 13-20.

Gephart, R. (2004) Qualitative Research and the Academy of Management Journal. *Academy of Management Journal*, Vol. 47(4), pp. 454-462.

Goitein, B., Bond, E. U. (2005) Modes of Effective Managerial Decision Making: Assessment of a Typology. *How Professionals Make Decisions* (pp. 123-134). Mahwah, New Jersey: Lawrence Erlbaum Associates.

Goldstein, W. M., Hogarth, R. M. (1997) *Research on Judgement and Decision Making: Currents, Connections and Controversies*. Cambridge, UK: Cambridge University Press

Goto, S. (2007) The Bounds of Classical Risk Management and the Importance of a Behavioural Approach. *Journal of Risk Management and Insurance Review,* Vol. 10(2), pp. 267-282.

Grint, K. (2000) *The arts of leadership.* Oxford: Oxford University Press.

Gill, J., Johnson, O. (2002) *Research methods for mangers*. London, Sage Publications.

Hoffman, R. R., Crandall, B., Shadbolt, N. (1998) Use of the Critical Decision Method to Elicit Expert Knowledge: A Case Study in the Methodology of Cognitive Task Analysis. *Journal of Human Factors,* Vol. 40(2), pp. 254-276.

Hitt, M., Ireland, R. D., Hoskisson, R. (2012) *Strategic management cases: BOAL competitiveness and globalization*. Mason, OH: Cengage Learning.

Hammond, J. S., Keeney, R.L., Raiffa, H. (1999) *Smart Choices: A Practical Guide to Making Better Decisions*. Boston, Massachusetts: Harvard Business School Press.

Hood, C., Jones, D. K. (1996) *Accident and Design: Contemporary Debates in Risk Management*. London: UCL Press.

Harzer, C., Ruch, W. (2013) The application of signature character strengths and positive experiences at work. Journal of Happiness Studies, Vol.14(3), pp.965-983.

Hoy,W.K., Tarter, C.J. (2012) Positive psychology and educational administration. Educational administration quarterly, Vol.47(3), pp.427-445.

Hofstede, Geert H. 2001. Culture's Consequences: Comparing Values, Behaviors, Institutions, and Organizations Across Nations. Sage Publications.

Hsiao, H.C., Chang, J.C. (2015) The role of organizational learning in transformational leadership and organizational innovation. Asia Pacific Education Review, Vol.12(4), pp.621-631.

Jablonowski, M. (2009) *The Bigger Picture: Recognizing Risk Management's Social Responsibility*. CBS Business network.

Janczak, S. (2005) The strategic decision making processes in organizations. *Problems and Perspectives in Management,* Vol. 3, pp. 58-70.

Kalat, J. (2013) Introduction to psychology. Belmont, CA: Wadsworth Cengage Learning.

Kern, M.L., Waters, L.E., Adler, A. (2014) A multidimensional approach to measuring well-being in students. The Journal of Positive Psychology, Vol.10(3), pp.262-271.

Kuhn, T.S. (1970) *The structure of social scientific revolutions.* Chicago, University Press.

Kumar, S. (2007) *Maggi – A Classic Case of Risk management.* Available at <https://www.linkedin.com/pulse/maggi-classic-case-risk-management-failure-sonjai-kumar-sirm> Accessed on 30th January, 2017.

Korn Ferry (2013) *Calculated risk? The view from the boardroom*. New York, Korn Ferry Institute.

Kessler, O. (2011) Beyond sectors, before the world: Finance, security and risk. *Security Dialogue*. Vol. 42 (2), pp. 197-215

KPMG. (2005) *Strategic Risk Management Survey: A Survey of Contemporary Strategic Risk Management Practices in Australia and New Zealand.* Sydney: KPMG.

Kahneman, D., Tversky, A. (2009) *Choices, Values and Frames*. Cambridge, UK: Cambridge University Press.

Kahneman, D. (2003) Prospect Theory: An Analysis of Decision under Risk. *Choices, Values and Frames* (pp. 17-43). Cambridge, UK: Cambridge University Press.

Khoo, B. K. (2012) *Risk Managers as Sensemakers and Sensegivers: Reconceptualising Enterprise Risk Management (ERM) from a Sensemaking Perspective.* Australia, University of Canberra.

Lam, J. (2003) *Enterprise Risk Management: From Incentives to Controls*. New Jersey: John Wiley and Sons.

Lichtenstein, S., Slovic, P., Derby, S. L., Keeney, R. L. (1981) *Risk.* Cambridge, UK: Cambridge University Press.

Loosemore, M. (2008) Charting Your Risk Experience. *Journal of Risk Management*, Vol. 52, pp.20-21.

Linley, P.A., Harrington, S., Garcea, N. (2013) Oxford handbook of positive psychology and work. New York, Oxford University Press.

Lopez, S.J., Synder, C.R. (2011) The Oxford handbook of positive psychology. New York, Oxford University Press.

Luthans, F., Church, A.H. (2012) Positive organizational behaviour : Developing and managing psychological strengths. The Academy of Management Executive, Vol.16(1), pp.321-349.

Mahsud, R., Yuki, G., Prussia, G.E. (2012) Human capital, Efficiency and innovative adaptation as strategic determinants of organization performance. Journal of leadership and organizational studies, Vol.18(2), pp.229-246.

Michel, J.E., Neuman, A. (2014) Web exclusive : positive psychology as a catalyst for change. Harvard Business Review.

Mills, M., Fleck, C., Kozikowski, A. (2014) Positive psychology at work. A Conceptual Review and state of practice assessment. The Journal of Positive Psychology, Vol.8(2), pp.153-164.

Milton, N.R. (2010) A new framework for psychology. Review of general psychology, Vol.14(1), pp.1-15.

McClean, C. (2010) *ISO 31000: The New, Streamlined Risk Management Standard*. Cambridge, MA: Forrester Research Inc.

Miccolis, J. A., Hively, K., Merkley, B. W. (2013).*Enterprise Risk Management: Trends and Emerging Practices*. Altamonte Springs, Florida: The Institute of Internal Auditors Research Foundation.

Mikes, A. (2009) Risk management and calculative cultures. *Journal of Management and Accounting Research*. Vol. 20, pp. 18-40.

Mainelli, M. (2004) Personalities of risk/reward: Human factors of risk/reward and culture. *Journal of Financial Regulation and Compliance*, Vol. 12 (4), pp. 340-350.

March, J. G., Shapira, Z. (1992) Variable Risk Preferences and the Focus of Attention. *Psychological Review*, Vol. 99(1), pp. 172-183.

Montgomery, H. (1993) The Search for a Dominance Structure in Decision Making: Examining Evidence. *Decision Making in Action: Models and Methods.* New Jersey: Ablex Publishing.

Mark, D., Barnabei, J. (2008) *Risk Management Psychology and Practice*. University of Pennsylvania, Philadelphia.

Morgan, M. G., Fischhoff, B., Bostrom, A., Atman, C. J. (2002) *Risk Communication: A Mental Models Approach*. Cambridge, UK: Cambridge University Press.

Miles, M. B., Huberman, M. (1994) *Qualitative Data Analysis*. Thousand Oaks, CA: Sage Publications, Inc.

Minsky, S. (2015) *Failure of Risk Management Practices*. Available at < https://iaonline.theiia.org/blogs/marks/2015/new-report-conorganizations-the-failure-of-risk-management-practices> Accessed on 2nd February, 2017.

Northhouse, P. G. (2012). *Leadership: Theory and Practice*. Thousand Oaks, CA: Sage.

Nutt, P. C. (2008) Investigating the Success of Decision Making Processes. *Journal of Management Studies*, Vol. 45(2), pp. 425-455.

O'Neill, B. (2001) Risk aversion in international relations theory. *International Studies Quarterly*, Vol. 45(2), pp. 617-640.

O'Sullivan, Owen P. (2015). The neural basis of always looking on the bright side. Dialogues in Philosophy, Mental and Neuro Sciences, 8(1):11–15.

Oke, A., Munshi, N., Walumbwa, F. (2013) The influence of leadership on innovation processes and activities. Organizational dynamics, Vol.38(1), pp.64-72.

Palmer, I., Dunford, R. (2008) Organisational Change and the Importance of Embedded Assumptions. *British Journal of Management*, Vol. 19, pp. 20-32.

Pathirage, C.P., Amaratunga, R.D.G., Haigh, R.P. (2008) *The role of philosophical context in the development of theory: Towards methodological pluralism, the built and human environment review*. New York, ACM Press.

Partington, D. (2000) Building grounded theories of management action. *British Journal of Management*, Vol. 11, pp. 91-102.

Patton, W. (2012) Studying information technology in organizations: research approaches and assumptions. *Journal of Information Systems Research*, Vol. 2 (1), pp. 1-28.

Papadakis, V. M., Barwise, P. (2002) How much do CEOs and top managers matter in strategic decision-making? *British Journal of Management*, *13*(1), 83–95.

Peters, E. E. (2003) *Patterns in the Dark: Understanding Risk and Financial Crisis with Complexity Theory*. New York: John Wiley and Sons.

Pettinger, T. (2013) *The Great Recession*. Available at < http://www.economicshelp.org/blog/7501/economics/the-great-recession/> Accessed on 4th February, 2017.

Psychological Associates (2016) Pitfalls and Best Practices in Performance management http://www.q4solutions.com/wpcontent/uploads/2017/02/PitfallsandBestPracticesInPerformanceManagement.pdf

PwC (2015) *Updated COSO ERM Framework*. Available at < http://www.pwc.com/gx/en/services/advisory/consulting/risk/resilience/publications/COSOframework-keychanges.html> Accessed on 29th January, 2017.

Rosa, E. A. (2014) The Logical Status of Risk - To Banish or To Dull. *Journal of Risk Research*, Vol. 13(3), pp. 239-253.

Rasid, A., Rhaman, A., Ismail, W. (2011) Management accounting and risk management in Malaysian financial institutions. *Managerial Auditing Journal*, Vol. 26 (7), pp. 566-585.

Renn, O. (1998) Three decades of risk research: Accomplishments and new challenges. *Journal of Risk Research*, Vol. 1(1), pp. 49-71.

Reicher, S.D. (2005) *Leicester's lesson in leadership*. *The British Psychological Society*, Vol.8(4), pp.1-2.

Remenyi, D., Williams, B., Money, A., Swartz, E. (2003) *Doing Research in Business and Management*. London, UK: Sage Publications Ltd.

Rietzschel, E.F. (2011) Collective regulatory focus predicts specific aspects of team innovation. Group Processes and Intergroup Relations, Vol.14(3), pp.337-345.

Rosing, K., Frese, M., Bausch, A. (2014) Explaining the heterogeneity of the leadership-innovation relationship. Ambidextrous Leadership. The Leadership Quarterly, Vol.22(5), pp.956-974.

Schaufeli, W.B., Bakker, A.B., Salanova, M. (2016) The measurement of work engagement with a short questionnaire a cross-national study. Educational and psychological measurement, Vol.66(4), pp.701-716.

Schui, G., Krampen, G. (2014) Bibliometric analyses on the emergence and present growth of positive psychology. Applied Psychology:Health and Well Being, Vol.2(1), pp.52-64.

Sirgy, M.J., Wu, J. (2016) The pleasant life, the engaged life and the meaningful life: What about the balanced life? Journal of Happiness Studies, Vol.10(2), pp.183-196.

Salas, E., Klein, G. (2014) *Linking Expertise and Naturalistic Decision Making*. New Jersey: Lawrence Erlbaum Associates.

Schein, E. H. (2015) *Organizational culture and leadership*. 3rd edition. San Francisco, Calif, Jossey-Bass.

Schneider, S. L., Shanteau, J. (2015) *Emerging Perspectives on Judgement and Decision Research*. Cambridge, UK: Cambridge University Press.

Society of Actuaries (SOA) (2008) *Enterprise Risk Management Specialty Guide.* Risk Opportunity Guide. New York, ACM Press.

Spencer, K., Hyman, V. (2012) *Risk Management Your Role as a Board Member*. First Nonprofit Foundation, 1 South Wacker Drive, Suite 2380, Chicago, Illinois.

Schein, E. H. (2004) *Organisational Culture and Leadership.* San Francisco, California: Jossey-Bass.

Spulick, S. R. (2015) The effect of executive style on risk management: A healthcare supply chain context. *Electronic Theses and Dissertations,* Vol. 2, pp. 12-18.

Slovic, P. (2000) The Construction of Preference. *Choices, Values and Frames* (pp. 489-502). Cambridge, UK: Cambridge University Press.

Slovic, Paul (December 2006). "Risk Perception and Affect". Current Directions in Psychological Science. 15 (6): 322–325.

Shefrin, H. (2007) *Behavioral Corporate Finance: Decisions that Create Value.* New York, USA: McGrawHill / Irwin.

SAI Global Limited (2009). *AS/NZS ISO 31000:2009, Risk Management – Principles and Guidelines*. Sydney, Australia: SAI Global Limited.

Saunders, M., Lewis, P., Thornhill, A. (2009) *Research methods for business students*. Harlow: Pearson Educational Ltd

Sharman, R. (2002) Enterprise Risk Management - the KPMG Approach. *The British Journal of Administrative Management*, Vol. (31), p. 26.

Stulz, R.M. (2009) *Risk management failures*. New York, Cornerstone Research.

Taplin, R. (2015) *Risk Management and Innovation in Japan, Britain and the United States.* New York, Routledge.

Tan, C.L., Nasurdin, A.M. (2011) Human resource management practices and organizational innovation. The Electronic Journal of Knowledge Management, Vol.9(2), pp.155-167.

Teddlie, C., Yu, F. (2007) Mixed methods sampling a typology with examples. *Journal of Mixed Methods Research*, Vol. 1 (1), pp. 77-100.

Thommas, R. (2006) A general inductive approach for analysing qualitative evaluation data. *American Journal of Evaluation*, Vol. 27, (2), pp. 237-246.

Tversky, A., Kahneman, D. (2000) *Rational Choice and Framing of Decisions.* Decision-Making: Descriptive, Normative and Prescriptive Interactions. Cambridge, UK: Cambridge University Press.

Ulrey, S and Sargent, M (2013) ‘ Five Benefit of Enterprise Risk Management,. Available at: http://www.cliftonlarsonallen.com/Risk-Management/Five-Benefits-Enterprise-Risk-Management-ERM.aspx

Willaert, T. (2016*) Leadership in Risk Management*. Zurich, Zurich Insurance Group.

Wilson, B. and van Haperen, K. (2015) Soft Systems Thinking, Methodology and the Management of Change (including the history of the systems engineering department at Lancaster University), London: Palgrave MacMillan.

Wegner, J. (2008) *Research Design*. New York, ACM Press.

Wolcott, H. (1994) *Transforming qualitative data: Description analysis and interpretation*. Thousand Oaks, CA: Sage Publications, Inc.

Weick, K. E., Sutcliffe, K. M. (2011) *Managing the Unexpected: Assuring High Performance in an Age of Complexity*. San Francisco, Jossey-Bass.

Wood, A.M., Tarrier, N. (2010) Positive clinical psychology: A new vision and strategy for integrated research and practice. Clinical Psychology Review, Vol.30(7), pp.819-829.

Wright, T.A., Lauer, T.L. (2013) What is character and why it really does matter. Organizational Dynamics, Vol.42(1), pp.25-34.

Yates, J. F., Veinott, E. S., Patalano, A. L. (2003) Hard Decisions, Bad Decisions: On Decision Quality and Decision Aiding. *Emerging Perspectives on Judgement and Decision Research* (pp. 13-63). Cambridge, UK: Cambridge University Press.

Yin, R.K. (2009) *Case study research: design and methods*, 5th edn. London: SAGE Publications Ltd.

Yilmaz, A. (2008) *The Best Enterprise Risk Management Practice For Airline and Airport Business*. Saarbrucken: VDM Verlag Dr. Muller Aktiengesellschaft and Co.

Yin, R.K. (2009) Case Study Research: Design and Methods. 4th edn. London: Sage

Publications, Ltd.

Yin, R.K. (2013) Case Study Research: Design and Methods. 5th edn. Thousand Oaks, CA: Sage Publications, Inc.

Youssef, C.M., Luthans, F. (2012) Positive global leadership. Journal of world business, Vol.47(4), pp.539-547.

Zsambok, C., Klein, G. (1997) *Naturalistic Decision Making*. New Jersey: Lawrence Erlbaum Associates.

Beasley, M. S. (2017) Confronting risk with strong leadershiphttp://www.cgma.org/magazine/issues/2017/may/chief-risk-officers.html

Miccolis, (2003) Risk Managementhttps://www.irmi.com/articles/expert-commentary/erm-lessons-across-industries

Arain, M., Campbell, M. J., Cooper, C. L., and Lancaster, G. A. 2010. What is a pilot or feasibility study? A review of current practice and editorial policy. *BMC medical research methodology*, *10* (1), 67.

Bahari, S.F. 2010. 'Qualitative versus quantitative research strategies: contrasting epistemological and ontological assumptions', Journal Technology Malaysia, (52), 17-28.

Bazeley, P. 2004. Issues in Mixing Qualitative and Quantitative Approaches to Research. In: J.G. R. BUBER, ed, Applying Qualitative Methods to Marketing Management Research. Hampshire, UK: Palgrave Macmillan, 141-156.

Benbasat, I., Goldstein, D., and Mead, M. 1987. 'The case research strategy in studies of information systems', 11 (3), MIS Quarterly, 369-386.

Berg, B.L. 1989. Qualitative research methods for the social science, Allyn and Bacon, Boston MA
Blaike, N. 1993. Approaches to Social Enquiry. 1st edn. Cambridge: Polity Press.

Bogdan, R. C., and Biklen, S. K. 1998. Qualitative research in education: An introduction to theory and methods. 3rd edn. Needham Heights. MA: Allyn & Bacon

Bryman, A. 2012. Social Research Methods. 4th edn. Oxford: Oxford University Press.

Bryman, A. 2006. Integrating quantitative and qualitative research: how is it done?. London: Sage publications, 97-113.

Creswell, J. W. 2009. Research Design: Qualitative, Quantitative, and Mixed Methods Approach. 3rd edn. London: SAGE Publication Ltd.

Denzin, N., and Lincoln, Y. 2003. Collecting and Interpreting Qualitative Materials 2nd edn. London, UK: Sage Publications Ltd.

Fink, A., and Kosecoff, J. 1985. How to Conduct Surveys: A Step-by-Step Guide. Beverly Hills, CA: SAGE Publications Ltd.

Foddy, W. 1993. Constructing Questions for Interviews. Cambridge: Cambridge University Press.

Gerring, J. 2004. 'What is the Case study and what is it good for?'. American political science review,

98 (2), 341-354.

Gill, J., and Johnson, O. 2002. Research methods for mangers, 3edn, london: Sage.

Greene, J. C., and Caracelli, V. J. 2003. Making paradigmatic sense of mixed methods practice. Handbook of mixed methods in social and behavioral research, 91-110.

Guba, E. G., and Lincoln, Y. S. 1985. Naturalistic inquiry. Beverly Hills, CA: Sage Publications, Inc.

Hammersley, M. 1990. Reading Ethnographic Research: A Critical Guide. London, UK: Longman.

Johnson, R .B., Onwuegbuzie, A.J., and Turner, L.A. 2007. Toward a definition of mixed methods research', Journal of Mixed Methods research, 1 (2), 112-133.

Kvale, S. 1996. Interviews. An Introduction to Qualitative Research Interviewing. Thousand Oaks, CA: Sage Publications, Inc.

Laing, R.D. 1967. The politics of experience and the birds of paradise, Penguin, Harmondsworth

Lecompte, M. D., and Goets, J. P. 1982. Problems of Reliability and Validity in Ethnographic Research', Review of Educational Research, 53 (31), 1- 6.

Leech, N. L., and Onwuegbuzie, A. J. 2009. A typology of mixed methods research designs', Quality & quantity, 43(2), 265-275.

Miles, M. B., and Huberman, M. 1994. Qualitative Data Analysis. 2nd edn. Thousand Oaks, CA: Sage Publications, Inc.

Oates, B. J. 2006. Researching information systems and computing. London: SAGE Ltd.

Onwuegbuzie, A. J., Johnson, R. B., andTurner, L. A. 2007. Toward a definition of mixed methods research', Journal of mixed methods research, 1(2), 112-133.

Orlikowski, W. and Baroudi, J. 1991. Studying information technology in organizations: research approaches and assumptions', Information Systems Research, 2 (1), 1-28.

Pathirage, C.P., Amaratunga, R.D.G., and Haigh, R.P. 2008. The role of philosophical context in the development of theory: Towards methodological pluralism', the built &human environment review, (1). 1-10.

Remenyi, D., Williams,B., Money, A., and Swartz, E. 2003. Doing Research in Business and Management. London, UK: Sage Publications Ltd.

Rice, J. 1995. Mathematical Statistics and Data Analysis. 2nd edn. Belmont, CA: Wandsworth.

Robson, C. 2002. Real World Research; A research for social scientists and Practitioners-Researchers. 2nd edn. Oxford, UK: Blackwell Publishers.

Rowntree, D. 1991. Assessing students: how shall we know them. New York: Nichols Publishing Company.

Sandelowski, M. 2000. Combining Qualitative and Quantitative Sampling, Data Collection, and Analysis Techniques in Mixed method Studies', Research in Nursing & Health, 23 (2000), 246-255.

Saunders, M., Lewis, P., and Thornhill, A. 2015. Research methods for business students. 7th edn.

Harlow: Pearson Educational Ltd

Seale, C. 1999. Quality in qualitative research', Qualitative Inquiry, 5 (4), pp. 465-478

Tashakkori, A. and Teddlie, C. 2003. The past and future of mixed methods research: From data triangulation to mixed model designs'. In Tashakkori, A. and Teddlie, C. Handbook of mixed methods in social and behavioural research. Thousand Oaks, CA: SAGE Publication Ltd. 671-702.

Teddlie, C., and Yu, F. 2007. Mixed methods sampling a typology with examples', Journal of Mixed Methods Research, 1 (1), 77-100

Thomas, G. 2011. How to do your case study: a guide for students and researchers. SAGE Publications Ltd.

Thaler, Richard H. (1999). "Mental accounting matters". Journal of Behavioral Decision Making. 12 (3): 183–206.

Trochim, W. M. 2000. The research methods knowledge base [Homepage of Research Methods Knowledge Base], [Online]. Available: http://www.socialresearchmethods.net/kb/ [13 November 2015].

van der Linden, S. (2015). The Social-Psychological Determinants of Climate Change Risk Perceptions: Towards a Comprehensive Model. Journal of Environmental Psychology, 41, 112-124.

Walsham, G. 1995. The emergence of interpretivism in IS Research', Information Systems Research, 6 (4), 376-394.

Wolcott, H. 1994. Transforming qualitative data: Description analysis and interpretation. Thousand Oaks, CA: Sage Publications, Inc.

Yechiam, E.; Hochman, G. (2013). "Losses as modulators of attention: Review and analysis of the unique effects of losses over gains". Psychological Bulletin. 139 (2): 497–518.

PARTICIPANT INFORMATION SHEET

Investigating the Influence of the Psychology of Leadership on Enterprise Risk Management

You are being invited to take part in a research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask me/us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

The purpose of this study is to investigate Investigating the Influence of the Psychology of Leadership on Enterprise Risk Management**.** Your input would help to develop a framework and provide academic and practitioner guidance on how psychological factors influence board members' insights on risk management. Interviews and questioner will take place with executives from 3 privet companies from Saudi Arabia.
As participation is entirely voluntary, it is up to you to decide whether or not to take part. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part, you are still free to withdraw at any time and without giving a reason.

The interview or filling the questioner will not take more than half an hour, questions will be asked regarding psychology of leadership impact on organizational culture and decision-making.

There are no known risks or disadvantages of taking part, as I/We strive to protect your confidentiality. If you are taking part in the face-to-face interview, we will send you the transcript of the interview before the analysis to allow you to ensure that you have not been misrepresented.

All information which is collected about you during the course of the research will be kept strictly confidential. Any information about you, which leaves the university, will have your name removed so that you cannot be identified from it.

This project is a part of my degree at Brunel University. Participating in this project could provide useful information and academic guidance on how psychological factors influence

board members' insights on risk management. A copy of the Thesis will be delivered to you and you can benefit from the result and recommendations in the thesis.

Brunel University is committed to compliance with the Universities UK Research Integrity Concordat. You are entitled to expect the highest level of integrity from our researchers during the course of their research. Should the participant wish to complain about the experience they should contact the Chair of the College of Business, Arts and Social Sciences Research Ethics Committee.

I organized and funded this research, in conjunction with the Business School, Brunel University. Brunel provides appropriate insurance cover for research which has received ethical approval.

The College of Business, Arts and Social Sciences Research Ethics Committee review this study.

You will be given a copy of the information sheet and a signed consent form to keep.

Thank you very much in participating in this project and it's highly appreciated.

Muneer Ali Abdulldaim

PhD student at Brunel Business School, Brunel University, London.

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Abraham Althonayan, PhD

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Senior Lecturer in Strategic Management, Operation Management and MBA

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The Chair of the College of Business, Arts and Social Sciences Research Ethics Committee, Brunel University.

PARTICIPANT CONSENT FORM

Investigating the Influence of the Psychology of Leadership on Enterprise Risk Management

The participant should complete the whole of this sheet		
	Please tick the appropriate box	
	YES	**NO**
Have you read the Research Participant Information Sheet?	☐	☐
Have you had an opportunity to ask questions and discuss this study?	☐	☐
Have you received satisfactory answers to all your questions?	☐	☐
Who have you spoken to?		
Do you understand that you will not be referred to by name in any report concerning the study?	☐	☐
Do you understand that you are free to withdraw from the study:		
• **at any time?**	☐	☐
• **without having to give a reason for withdrawing?**	☐	☐
• **without affecting your future care?**	☐	☐
I agree to my interview being recorded.	☐	☐
I agree to the use of non-attributable direct quotes when the study is written up or published.	☐	☐
Do you agree to take part in this study?	☐	☐
Signature of Research Participant:		
Date:		
Name in capitals:		
<u>Witness statement</u>		

I am satisfied that the above-named has given informed consent.
Witnessed by:
Date:
Name in capitals:

Researcher name:	**Signature:**
Supervisor name:	**Signature:**

Dear Mr. XXXXXXX:

I am PhD student at Brunel University; Psychology Leadership has been of interest to me since I started my program. Your company has an outstanding reputation worldwide.

I would appreciate the opportunity to meet with you briefly and discuss the practice of your specialty. I am especially interested in your views regarding Investigating the Influence of the Psychology of Leadership on Enterprise Risk Management.
Any further insights you have would be greatly appreciated.
I will contact your office the week of XXXXXX to set up a mutually convenient time for this informational meeting.

Sincerely,

Muneer Ali Abdulldaim

PhD student at Brunel Business School, Brunel University, London.

Muneer.Abdulldaim@brunel.ac.uk

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ww.brunel.ac.uk 14 June 2016

LETTER OF APPROVAL

Applicant: Mr. MUNEER ABDULLDAIM

Project Title: Investigating the Influence of Psychological Factors on Board Members Insight to Risk Management Reference: 2957-LR-Jun/2016- 3207-3

Dear Mr. MUNEER ABDULLDAIM

The Research Ethics Committee has considered the above application recently submitted by you.

The Chair, acting under delegated authority has agreed that there is no objection on ethical grounds to the proposed study. Approval is given on the understanding that the conditions of approval set out below are followed:

- The agreed protocol should be followed. Any changes to the protocol will require prior approval from the Committee by way of an application for an amendment.
- On the Letter of Permission, please add the Brunel logo and your Brunel contact details, email address, postal address.

Please note that:

- Research Participant Information Sheets and (where relevant) flyers, posters, and consent forms should include a clear statement that research ethics approval has been obtained from the relevant Research Ethics Committee.
- The Research Participant Information Sheets should include a clear statement that queries should be directed, in the first instance, to the Supervisor
- (where relevant), or the Researcher. Complaints, on the other hand, should be directed, in the first instance, to the Chair of the relevant Research Ethics Committee.
- Approval to proceed with the study is granted subject to receipt by the Committee of satisfactory responses to any conditions that may appear above, in addition to any subsequent changes to the protocol.

The Research Ethics Committee reserves the right to sample and review documentation, including raw data, relevant to the study.

You may not undertake any research activity if you are not a registered student of Brunel University or if you cease to become registered, including abeyance or temporary withdrawal. As a deregistered student you would not be insured to undertake research activity. Research activity includes the recruitment of participants, undertaking consent procedures and collection of data. Breach of this requirement constitutes research misconduct and is a disciplinary offence.

Professor James Knowles

Chair

College of Business, Arts and Social Sciences Research Ethics Committee Brunel University London

Appendix A – Qualitative Questionnaire

Section 1- Demographics

1. Please indicate your age

Age	Tick
21-30 yrs	
31-40 yrs	
41-50 yrs	
51-60 yrs	
Above 60 years	

2. For how many years have you been working in your current Organization?

Age	Tick
Less than 1 year	
1- 5 years	
6- 10 years	
More than 10 years	

3. What is your current grade level in the company?

Grade	Tick
Executive	
Assistant Manager	
Manager	
General Manager	
Vice President and above	

5. Which area of business / function in your company are you involved in?

Business / Functional Area

Section 2 – Psychology of Risk Leadership in the context of ERM

1. What are the kinds of risks that impact your business, that have necessitated implementing an ERM program in your Organization?

2. The decisions that are taken by you / your Board of Directors are always rational in that they always achieve the desired objectives. Please agree or disagree with these statements and give reasons for your answer

3. In your experience, what are the factors that influence the Board of Directors or senior management the most, when called upon to take decisions under condition of risk and uncertainty? Please give a short explanation of why you consider these factors as being important.

4. The Board of Directors / you take decisions that are then expected to be implemented and followed by the rest of the employees in the Organization. Please agree or disagree with these statements and give reasons for your answer

5. How do you get others in your own peer group or employees that report to you to accept, follow and implement decisions that you or the board of directors take?

Appendix B – Quantitative Questionnaire

Section 1 – Demographics

1. Please indicate your age

Age	Tick
21-30 yrs	
31-40 yrs	
41-50 yrs	
51-60 yrs	
Above 60 years	

2. For how many years have you been working in your current Organization?

Age	Tick
Less than 1 year	
1- 5 years	
6- 10 years	
More than 10 years	

3. What is your current grade level in the company?

Grade	Tick
Executive	
Assistant Manager	
Manager	
General Manager	
Vice President and above	

4. What is your current designation in the company?

Designation

5. Which area of business / function in your company are you involved in?

Business / Functional Area

6. In which business sector does your organization operate?

Organizational Business Sector

7. Please indicate the number of employees in your organization?

Grade	Tick
Less than 1000	
1001 - 3000	
3001 – 5000	
More than 5000	

Section 2 – ERM

1. For how many years have you been involved in risk management in some form or the other?

No. of Years	Tick
Less than 1 year	
1- 5 years	
6-10 years	
More than 10 years	

2. How familiar are you with the concept of ERM?

Familiarity	Tick
Very Familiar	
Fairly Familiar	
Not Familiar	

3. What is the form of ERM that is implemented in your organization?

ERM Standard	Tick
FERMA	
COSO standard	
RIMS standard	
ISO 310000 standard	
British Standard	
AIRMIC	
USFAASRM	

4. At which stage of the ERM standards cycle are you involved in?

ERM Standard	Tick
I am involved in end to end implementation	
Objective Setting stage	
Event identification stage	
Risk assessment stage	
Risk response stage	
Control activities stage	
Communication stage	
Monitoring stage	

5. ERM in your organization has been set up to counter the following risks. Please tick the appropriate options.

ERM Standard	Tick
Slowdown in business	
Regulatory / legislative requirements	
Interruptions in business / need for diversification	
More competition	
Commodity Price Risk	
Damage to Reputation / Brand value	
Cash flow / liquidity risk	
Supply chain disruption	
Third party partner liability	
Labour / Talent related issues	

Section 3 – Decision Making Under Condition of Risk and Uncertainty

1. What would be your perception of the amount of risk involved in any decision you make in the following situations

4=Very Risky, 3=Risky, 2=Little Risk,1=No Risk

Risk Inherent in a Decision	Very Risky	Risky	Little Risk	No Risk
The more information you have that is relevant to the decision				
The better your ability to quantify possible outcomes from a decision				
The greater the control you have over a situation				
The greater your expertise about the factors involved in a risky situation				
The greater your ability to consult colleagues about a decision				
The more time you have to consider a decision				
The fewer the number of product innovations in your industry / business sector				
The greater your ability to share responsibilities for a decision				
The greater the extent to which you view a decision as a personal commitment				
The greater the profit potential of a decision				
The greater the ability of your competitors to respond quickly to any decision that you may take				
The wider the range of outcomes (both positive and negative) that may result from a decision				
The greater the possibility that a project may incur losses in future				
The greater the magnitude of any possible loss resulting from a decision				

2. The following indicates your preferred style of decision making under condition of risk and uncertainty. You can rate the options according to the following scale:

4=Strongly Agree, 3=Agree, 2=Disagree,1=Strongly Disagree

Risk Inherent in a Decision	Very Risky	Risky	Little Risk	No Risk
You believe that to gain high profits in business one has to take high risks				
To achieve something in life one has to take risks				
If there is a big chance of profit you take even very high risks				
You make risky decisions quickly without an unnecessary waste of time				
While taking risk you have a feeling of a very pleasant flutter				
You am attracted by different dangerous activities				
You enjoy risk taking				
You willingly take responsibility in my work place				
You avoid activities whose result depend too much on chance				
In business one should take risk only if the situation can be controlled				
The skill of reasonable risk taking is one of the most important Leadership skills				
You take risk only if it is absolutely necessary to achieve an important goal				
Gambling seems something very exciting to you				

3. How likely would you be to adopt any of the following strategies to control risk in a particular situation

4=Strongly Agree, 3=Agree, 2=Disagree,1=Strongly Disagree

Management of Risk	Strongly Agree	Agree	Disagree	Strongly Disagree
Gather more information				
Consult with colleagues				
Consult Experts				
Consult your superiors				
Consider the differences between this decision and the earlier ones				
Consider the similarities between this decision and the earlier				
Shorten the decision horizon by breaking the decision into smaller sections				
Use technical / statistical tools to quantify the risks and then take decisions				
Set up an internal team to advise you				
View this decision in isolation from previous decisions				
Postpone the decision				
Do nothing				

4. How likely would you be to adopt any of the following strategies to control risk in a particular situation

4=Strongly Agree, 3=Agree, 2=Disagree,1=Strongly Disagree

Management of Risk	Strongly Agree	Agree	Disagree	Strongly Disagree
When making decisions you consider gains and losses				
When making decisions you consider opportunities and threats				
Your decision to proceed with the current phase would be based on recouping past losses incurred during a previous phase				
Your decision to proceed with the current phase would be based on ignoring past losses incurred during a previous phase and focussing on the current target				
In case of occurrence of loss you regret the unusual decisions you took the most				
In case of occurrence of loss you regret taking routine decisions				
From amongst a range of project choices, you would chose the one with the lowest risk and least profitable				
From amongst a range of project choices, you would chose the one with the highest risk and most profitable				
From amongst a range of project choices, you would chose the one with moderate risk and moderate profitability				

Section 4 – Type of Leadership

1. Which of the following factors you believe impact the risk of taking a decision in a particular situation?

4=Strongly Agree, 3=Agree, 2=Disagree,1=Strongly Disagree

Management of Risk	Strongly Agree	Agree	Disagree	Strongly Disagree
Decision maker is an extrovert with a high degree of self-belief				
Organizational culture emphasises the necessity for taking risks				
There is a generous reward structure in the organization				
A large part of the reward structure includes equity options and bonus payments				
Decision maker have large personal fortunes that are independent of the organisation				
Organisation is enjoying favourable economic circumstances				
There is a strong likelihood that the target profit figure will not be met				
There is a strong likelihood that profit forecasts will be surpassed				
Previous decisions of a similar nature have been successful				
Decision maker is a senior executive and has a higher salary as compared to the other decision makers				
Economy is in recession				
Organisation is a follower rather than a leader				
Decisions are made by groups rather than by single individuals				
A large degree of formal monitoring and evaluation of performance is undertaken by the organization.				

2. The following characterises leadership behaviour with employees in your organization?

4=Strongly Agree, 3=Agree, 2=Disagree,1=Strongly Disagree

Management of Risk	Strongly Agree	Agree	Disagree	Strongly Disagree
Leaders help staff meet their development goals and objectives				
Decisions about development result in effective strategies for implementation				
Leaders use two-way communication to facilitate mutual understanding with staff				
Leaders build strong relationships with employees that facilitate goal achievement				
Leaders help staff create the right image for the company				

3. The following characterises leadership style in your organization?

4=Strongly Agree, 3=Agree, 2=Disagree,1=Strongly Disagree

Management of Risk	Strongly Agree	Agree	Disagree	Strongly Disagree
Leaders are emotionally involved with the organization, its employees, its mission				
Leaders delegate control to others wherever they can				
Leaders share decision-making power				
Leaders offer rewards and incentives				
Leaders think it is important to establish good rapport with staff				
Leaders practice participative management				
Leaders share similar goals				
Leaders have goals that are compatible to your goals.				

4. The following characterises employee behaviour in your organization?

4=Strongly Agree, 3=Agree, 2=Disagree,1=Strongly Disagree

Management of Risk	Strongly Agree	Agree	Disagree	Strongly Disagree
Employees are attentive to what each other say.				
Employees believe that company decisions are legitimate				
Employees believe that the company treats them fairly and justly				
Employees can be relied on to keep their promises				
Employees take responsibility for the outcomes and consequences of their decisions				
You feel that employees are trying to maintain a long-term commitment to the company				
You feel that your subordinates want to maintain a relationship with me				
There is a long-lasting bond between my subordinates and me				
You have a reciprocal relationship with your subordinates				
Most employees are happy with their interactions with the organization				

Section 5 – Organizational Culture

1. The following characterises the way you make decisions in your organization.

4=Strongly Agree, 3=Agree, 2=Disagree,1=Strongly Disagree

Influence of Stakeholders	Strongly Agree	Agree	Disagree	Strongly Disagree
You solve the problem or make the decision yourself, using information available to you at that time.				
You obtain any necessary information from the subordinate, then decide on the solution to the problem yourself. You may or may not tell the subordinate what the problem is, in getting the information from him. The role played by your subordinate in making the decision is clearly one of providing specific information which you request, rather than generating or evaluating alternative solutions.				
You share the problem with the relevant subordinate, getting his ideas and suggestions. Then *you* make the decision. The decision may or may not reflect your subordinate's influence				
You share the problem with one of your subordinates and together you analyse the problem and arrive at a mutually satisfactory solution in an atmosphere of free and open exchange of information and ideas. You both contribute to the resolution of the problem with the relative contribution of each being dependent on knowledge, rather than formal authority.				
You delegate the problem to one of your subordinates, providing him with any relevant information that you possess, but giving him responsibility for solving the problem by himself. Any solution which the person reaches will receive your support.				

2. Are the following stakeholders in your organization likely to have an influence over the risky decisions that your board of directors may take

4=Strongly Agree, 3=Agree, 2=Disagree,1=Strongly Disagree

Influence of Stakeholders	Strongly Agree	Agree	Disagree	Strongly Disagree
Customers				
Competitors				
Institutional and other large shareholders				
Government / Government Agencies / Regulators				
Employees				
Banks / Financial / Lending institutions				
Media				
Vendor Partner / Suppliers				
Non – Governmental Organizations / NGO's				
Small Shareholders				
None of the above				

3. Are the following stakeholders in your organization likely to have an influence over the risky decisions that your board of directors may take

4=Strongly Agree, 3=Agree, 2=Disagree,1=Strongly Disagree

Influence of Stakeholders	Strongly Agree	Agree	Disagree	Strongly Disagree
Customers				
Competitors				
Institutional and other large shareholders				
Government / Government Agencies / Regulators				
Employees				
Banks / Financial / Lending institutions				
Media				
Vendor Partner / Suppliers				
Non – Governmental Organizations / NGO's				
Small Shareholders				
None of the above				

4. The following options best reflect the risk philosophy of your organization.

4=Strongly Agree, 3=Agree, 2=Disagree,1=Strongly Disagree

	Strongly Agree	Agree	Disagree	Strongly Disagree
The concept of risk is part of the mission statement or sub statements				
Each business unit formulates a position towards risk				
Risks are reflected in key performance indicators				
Projects are analyzed according to their embedded risks				
Strategic planning and risk management are aligned				

5. The following options best reflect the risk management culture of your organization.

4=Strongly Agree, 3=Agree, 2=Disagree,1=Strongly Disagree

	Strongly Agree	Agree	Disagree	Strongly Disagree
Regular meetings for brainstorming and identifying risks are held				
The company is aware of strength, weaknesses, opportunities and threats (SWOT-Analysis)?				
All people that make decisions about risks are fully involved				
There is an accessible risk register				
Experts/heads of different departments are consulted before arriving at decisions				
Independent experts participate in decision making processes involved in risk management				
An “outside view” is adopted to identify risks				

6. The following options best reflect the risk assessment culture of your organization.

4=Strongly Agree, 3=Agree, 2=Disagree,1=Strongly Disagree

	Strongly Agree	Agree	Disagree	Strongly Disagree
Risks are ranked generally and categorized according to their time horizon				
There is a quantitative method for risk measurement applied if possible				
Results are compared to historical data or past projects				
All available data is considered in the calculation				
Independent experts examine the risk assessment				
Risk Benchmarking is undertaken				
Techniques of reflective judgment are applied in qualitative assessments				

7. The following options best reflect the risk control and control activities of your organization.

4=Strongly Agree, 3=Agree, 2=Disagree,1=Strongly Disagree

	Strongly Agree	Agree	Disagree	Strongly Disagree
Risk responses are aligned with the company's risk appetite				
Action plans have been developed				
Financial resources are available for risk control measures?				
Responses to non-cash-flow risk have been designed				
Policies and guidelines are updated on a regular basis				
The designed activities are realistic				
Behavioral implications have been regarded in developing the activities				
Non-rules-based mitigation techniques are considered for strategic and external risks				
Trainings and workshops for employees and managers are part of the control system?				

8. The following options best reflect the information and communication processes related to organizational risk

4=Strongly Agree, 3=Agree, 2=Disagree,1=Strongly Disagree

	Strongly Agree	Agree	Disagree	Strongly Disagree
The person in charge communicates the risk agenda				
Doubts are communicated to the board				
The risk manager communicates directly to the board				
All responsibilities are communicated				
Essential information is communicated transparently and vertically				
There a technique employed for communicating confidential information? (E.g. whistle-blowing mechanism)				
Employees are informed regularly through e-mails, newsletters etc				
Active participation of employees is possible				
Options that deviate from the general consensus are welcomed? So is critical Thinking				
Management and the board enable an open discussion across the organizational levels				

Section 6 – ERM Implementation Status

1. At what stage would you rate the capability maturity of ERM implemented in your organization? You can rate the options according to the following scale:

4=Strongly Agree, 3=Agree, 2=Disagree,1=Strongly Disagree

ERM Standard	Strongly Agree	Agree	Disagree	Strongly Disagree
Ad Hoc Stage – Implementation is haphazard and for countering problems as and when they occur				
Formal Stage – basic ERM process is in place to tackle already identified risks				
Defined – ERM processes are documented and serve as guidelines for implementation to counter existing and emerging risks				
Measured – it is possible to measure and control the outcomes of ERM implementations				
Optimized – ERM implementation is characterised by continuous feedback, improvement and knowledge – sharing				
Strategic – Risk management aligned with the business				

2. Which of the following benefits have accrued to your organization as a result of the ERM implementation? You can rate the options according to the following scale:

4=Strongly Agree, 3=Agree, 2=Disagree,1=Strongly Disagree

ERM Standard	Strongly Agree	Agree	Disagree	Strongly Disagree
Risk strategy and strategy have been aligned				
Risk Response Decision Making Capability has been enhanced				
Operational surprises and losses have been reduced				
Enhanced cross-enterprise risk identification and management capability				
Enhanced capability to provide integrated response to multiple risk				
Better able to identify and seize opportunities				
Improved deployment of men, money and materials				

3. Would you regard the implementation of ERM in your organization, as a success or a failure?

ERM Implementation	Tick
ERM Implementation is a Success	
ERM Implementation is a Failure	

Appendix C – Correlation Analysis

1. The Constant Variable : SERM2

SERM2	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
Risk strategy and strategy have been aligned	0	0	45	55	1	Strongly Disagree
Risk Response Decision Making Capability has been enhanced	0	0	18	82	1	Strongly Disagree
Operational surprises and losses have been reduced	0	1	56	43	2	Disagree
Enhanced cross-enterprise risk identification and management capability	0	0	32	68	1	Strongly Disagree
Enhanced capability to provide integrated response to multiple risk	0	0	0	100	1	Strongly Disagree
Better able to identify and seize opportunities	0	1	2	97	1	Strongly Disagree
Improved deployment of men, money and materials	0	0	5	95	1	Strongly Disagree

DM1	Very Risky	Risky	Little Risk	No Risk	Weighted Average	Interpretation
	4	3	2	1		
The more data available to you that pertains to the decision to be taken	0	0	2	98	1	No Risk
Ability to quantitavely analyse outcomes of decisions	0	0	6	94	1	No Risk
The more the control you have in a particular situation of risk	0	0	1	99	1	No Risk
The more the familiarity / skill you have to deal with a particular situation	0	0	0	100	1	No Risk
You have more time to consider a decision	0	0	26	74	1	No Risk
Less number of production innovations in your particular business segment	0	0	3	97	1	No Risk
The more you consider the decision as a personal commitment	0	0	11	89	1	No Risk

DM1	Very Risky	Risky	Little Risk	No Risk	Weighted Average	Interpretation
	4	3	2	1		
The more the need to consult with fellow colleagues about a particular decision	25	28	24	23	3	Risky
The more your willingness to share responsibility for decision making in a situation of risk	26	32	21	21	3	Risky
The more the profitability in the outcome of a particular decision	43	35	12	10	3	Risky
The faster the ability of the competition to respond to any decision taken by you	94	6	0	0	4	Very Risky
The larger the variety of possible outcomes - both positive or negative - that might result from your decision	82	6	10	2	4	Very Risky
The more the chances that your decisions may lead to loss making in future	100	0	0	0	4	Very Risky
The greater the possibility of losses inherent in taking a particular decision	100	0	0	0	4	Very Risky

DM2	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
You believe that high risks are necessary to achieve something in life at the personal level	0	1	37	62	1	Strongly Disagree
Taking risk gives you a pleasant feeling of flutter	0	0	54	46	2	Disagree
You enjoy taking risks	0	0	32	68	1	Strongly Disagree
You like taking up activities whose outcomes are driven by chance	2	5	44	49	2	Disagree
You would take risks for the achievement of even small goals	0	0	15	85	1	Strongly Disagree
Gambling is an exciting activity for you	0	0	36	64	1	Strongly Disagree
In business risk taking is justified even if the situation cannot be brought under control	0	8	33	59	1	Disagree

DM3	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
Consult with colleagues	21	20	27	32	2	Disagree
Set up an internal team to advise you	18	22	26	34	2	Disagree
Your decision to proceed with the current phase would be based on ignoring past losses incurred during a previous phase and focussing on the current target	0	2	56	42	2	Disagree
From amongst a range of project choices, you would chose the one with the highest risk and most profitable	0	1	23	77	1	Strongly Disagree
From amongst a range of project choices, you would chose the one with moderate risk and moderate profitability	21	25	22	32	2	Disagree

LRD2	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
Leaders use two-way communication to facilitate mutual understanding with staff	12	25	8	45	2	Disagree
Leaders delegate control to others wherever they can	2	5	28	65	1	Strongly Disagree
Leaders share decision-making power	1	8	16	75	1	Strongly Disagree
Leaders offer rewards and incentives	42	49	3	6	3	Disagree
Leaders think it is important to establish good rapport with staff	38	29	18	15	3	Disagree
Leaders practice participative management	5	6	28	61	2	Disagree
Leaders have goals that are compatible to goals of subordinates	17	5	45	33	2	Disagree

LRD4	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
Employees believe that the company treats them fairly and justly	22	15	29	34	2	Disagree
Employees take responsibility for the outcomes and consequences of their decisions	10	2	29	59	2	Disagree
You feel that employees are trying to maintain a long-term commitment to the company	2	6	38	54	2	Disagree
You feel that your subordinates want to maintain a relationship with you	22	18	28	32	2	Disagree
There is a long-lasting bond between my your subordinates and me	17	12	18	53	2	Disagree
You have a reciprocal relationship with your subordinates	12	16	28	44	2	Disagree
Most employees are happy with their interactions with the organization	12	18	29	41	2	Disagree

OC3	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
The concept of risk is part of the mission statement or sub statements	18	17	27	38	2	Disagree
Risks are reflected in key performance indicators	10	8	32	50	2	Disagree
Projects are analyzed according to their embedded risks	16	27	29	28	2	Disagree
Strategic planning and risk management are aligned	15	12	11	62	2	Disagree
Experts/heads of different departments are consulted before arriving at decisions	18	16	30	36	2	Disagree
Risk Benchmarking is undertaken	9	14	35	44	2	Disagree
Techniques of reflective judgment are applied in qualitative assessments	2	8	44	46	2	Disagree

OC6	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
Responses to non-cash-flow risk have been designed	12	8	49	31	2	Disagree
Behavioral implications have been regarded in developing the activities	2	0	30	68	1	Strongly Disagree
Non-rules-based mitigation techniques are considered for strategic and external risks	0	5	32	63	1	Strongly Disagree
Trainings and workshops for employees and managers are part of the control system	23	18	6	53	2	Disagree
There a technique employed for communicating confidential information? (E.g. whistle-blowing mechanism)	0	6	52	42	2	Disagree
Active participation of employees is possible in decision making processes	0	6	35	59	1	Strongly Disagree
Management and the board enable an open discussion across the organizational levels	5	6	59	30	2	Disagree

Appendix 3 – Correlation Tables

DM1

DM1	Very Risky	Risky	Little Risk	No Risk	Weighted Avera	Interpretation
	4	3	2	1		
The more data available to you that pertains to the decision to be taken	0	0	2	98	1	No Risk
Ability to quantitavely analyse outcomes of decisions	0	0	6	94	1	No Risk
The more the control you have in a particular situation of risk	0	0	1	99	1	No Risk
The more the familarity / skill you have to deal with a particular situation	0	0	0	100	1	No Risk
You have more time to consider a decision	0	0	26	74	1	No Risk
Less number of production innovations in your particular business segment	0	0	3	97	1	No Risk
The more you consider th edecision as a personal commitment	0	0	11	89	1	No Risk

serm2

	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
Risk strategy and strategy have been aligned	0	0	45	55	1	Strongly Disagree
Risk Response Decision Making Capability has been enhanced	0	0	18	82	1	Strongly Disagree
Operational surprises and losses have been reduced	0	1	56	43	2	Disagree
Enhanced cross-enterprise risk identification and management capability	0	0	32	68	1	Strongly Disagree
Enhanced capability to provide integrated response to multiple risk	0	0	0	100	1	Strongly Disagree
Better able to identify and seize opportunities	0	1	2	97	1	Strongly Disagree
Improved deployment of men, money and materials	0	0	5	95	1	Strongly Disagree

DM1

DM1	Very Risky	Risky	Little Risk	No Risk	Weighted Avera	Interpretation
	4	3	2	1		
The more the need to consult with fellow colleagues about a particular decision	25	28	24	23	3	Risky
The more your willingness to share responsibiltiy for decision making in a situation of risk	26	32	21	21	3	Risky
The more the profitability in the outcome of a particular decision	43	35	12	10	3	Risky
The faster the ability of the compeition to respond to any decision taken by you	94	6	0	0	4	Very Risky
The larger the variety of possible outcomes - both positive or negative - that might result from your deciosn	82	6	10	2	4	Very Risky
The more the chances that your decisions may lead to loss making in future	100	0	0	0	4	Very Risky
The greater the possibility of losses inherent in taking a particular decision	100	0	0	0	4	Very Risky

	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
Risk strategy and strategy have been aligned	0	0	45	55	1	Strongly Disagree
Risk Response Decision Making Capability has been enhanced	0	0	18	82	1	Strongly Disagree
Operational surprises and losses have been reduced	0	1	56	43	2	Disagree
Enhanced cross-enterprise risk identification and management capability	0	0	32	68	1	Strongly Disagree
Enhanced capability to provide integrated response to multiple risk	0	0	0	100	1	Strongly Disagree
Better able to identify and seize opportunities	0	1	2	97	1	Strongly Disagree
Improved deployment of men, money and materials	0	0	5	95	1	Strongly Disagree

DM2

DM2	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
You believe that high risks are necessry to achieve something in life at the personal level	0	1	37	62	1	Strongly Disagree
Taking risk gives you a pleasant feeling of flutter	0	0	54	46	2	Disagree
You enjoy taking risks	0	0	32	68	1	Strongly Disagree
You like taking up activities whose outcomes are driven by chance	2	5	44	49	2	Disagree
You would take risks for the achievement of even small goals	0	0	15	85	1	Strongly Disagree
Gambling is an exciting activity for you	0	0	36	64	1	Strongly Disagree
In business risk taking is justified even if the situation cannot be brought under control	0	8	33	59	1	Disagree

	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
Risk strategy and strategy have been aligned	0	0	45	55	1	Strongly Disagree
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Enhanced cross-enterprise risk identification and management capability	0	0	32	68	1	Strongly Disagree
Enhanced capability to provide integrated response to multiple risk	0	0	0	100	1	Strongly Disagree
Better able to identify and seize opportunities	0	1	2	97	1	Strongly Disagree
Improved deployment of men, money and materials	0	0	5	95	1	Strongly Disagree

DM3

DM3	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
Consult with colleagues	21	20	27	32	2	Disagree
Set up an internal team to advise you	18	22	26	34	2	Disagree
Your decision to proceed with the current phase would be based on ignoring past losses incurred during a previous phase and focussing on the current target	0	2	56	42	2	Disagree
From amongst a range of project choices, you would chose the one with the highest risk and most profitable	0	1	23	77	1	Strongly Disagree
From amongst a range of project choices, you would chose the one with moderate risk and moderate profitability	21	25	22	32	2	Disagree

	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
Risk strategy and strategy have been aligned	0	0	45	55	1	Strongly Disagree
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Operational surprises and losses have been reduced	0	1	56	43	2	Disagree
Enhanced cross-enterprise risk identification and management capability	0	0	32	68	1	Strongly Disagree
Enhanced capability to provide integrated response to multiple risk	0	0	0	100	1	Strongly Disagree

LRD4

LRD4	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
Employees believe that the company treats them fairly and justly	22	15	29	34	2	Disagree
Employees take responsibility for the outcomes and consequences of their decisions	10	2	29	59	2	Disagree
You feel that employees are trying to maintain a long-term commitment to the company	2	6	38	54	2	Disagree
You feel that your subordinates want to maintain a relationship with you	22	18	28	32	2	Disagree
There is a long-lasting bond between my your subordinates and me	17	12	18	53	2	Disagree
You have a reciprocal relationship with your subordinates	12	16	28	44	2	Disagree
Most employees are happy with their interactions with the organization	12	18	29	41	2	Disagree

	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
Risk strategy and strategy have been aligned	0	0	45	55	1	Strongly Disagree
Risk Response Decision Making Capability has been enhanced	0	0	18	82	1	Strongly Disagree
Operational surprises and losses have been reduced	0	1	56	43	2	Disagree
Enhanced cross-enterprise risk identification and management capability	0	0	32	68	1	Strongly Disagree
Enhanced capability to provide integrated response to multiple risk	0	0	0	100	1	Strongly Disagree
Better able to identify and seize opportunities	0	1	2	97	1	Strongly Disagree
Improved deployment of men, money and materials	0	0	5	95	1	Strongly Disagree

OC3

OC3	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
The concept of risk is part of the mission statement or sub statements	18	17	27	38	2	Disagree
Risks are reflected in key performance indicators	10	8	32	50	2	Disagree
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	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
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Enhanced cross-enterprise risk identification and management capability	0	0	32	68	1	Strongly Disagree
Enhanced capability to provide integrated response to multiple risk	0	0	0	100	1	Strongly Disagree
Better able to identify and seize opportunities	0	1	2	97	1	Strongly Disagree
Improved deployment of men, money and materials	0	0	5	95	1	Strongly Disagree

oc6

OC6	Strongly Agree	Agree	Disagree	Strongly Disagree	Weighted Average	Interpretation
	4	3	2	1		
Responses to non-cash-flow risk have been designed	12	8	49	31	2	Disagree
Behavioral implications have been regarded in developing the activities	2	0	30	68	1	Strongly Disagree
Non-rules-based mitigation techniques are considered for strategic and external risks	0	5	32	63	1	Strongly Disagree
Trainings and workshops for employees and managers are part of the control system	23	18	6	53	2	Disagree
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Active participation of employees is possible in decision making processes	0	6	35	59	1	Strongly Disagree
Management and the board enable an open discussion across the organizational levels	5	6	59	30	2	Disagree

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Risk Response Decision Making Capability has been enhanced	0	0	18	82	1	Strongly Disagree
Operational surprises and losses have been reduced	0	1	56	43	2	Disagree
Enhanced cross-enterprise risk identification and management capability	0	0	32	68	1	Strongly Disagree
Enhanced capability to provide integrated response to multiple risk	0	0	0	100	1	Strongly Disagree
Better able to identify and seize opportunities	0	1	2	97	1	Strongly Disagree
Improved deployment of men, money and materials	0	0	5	95	1	Strongly Disagree