

Development of an enterprise risk management implementation model and assessment tool

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Thesis submitted in fulfillment of the requirements for the degree

Philosophiae Doctor

in

Risk Management

in the

Faculty of Economic Sciences and Information Technology

at the

Vaal Triangle Campus

of the

North-West University

Promotor: Dr Diana Viljoen
November 2016

“You gain strength, courage and confidence by every experience in which you really stop to look fear in the face. You are able to say to yourself, I have lived through this horror. I can take the next thing that comes along...you must do the thing you think you cannot do.”

Eleanor Roosevelt

ACKNOWLEDGEMENTS

Heb 11: 1 states that “FAITH is being sure of what we hope for and certain of what we do not see.” I would like to thank my Heavenly Father for this opportunity to realise my dream.

One often hears the expression that it takes a village to accomplish a goal. I would like to take this opportunity to thank my PhD village:

Corne du Toit for her friendship, encouragement and loyal support (time, emotionally and financially). Thank you for investing in my future and for helping me to realise my dreams.

Irma le Roux Fourie for being my academic mentor and for challenging me to achieve excellence. Thank you for your time, advice and commitment.

Yolandi Raath-Booyens for her encouragement, prayers, support and for being my sounding board. Thank you for your unequivocal belief in me.

My parents for their practical assistance, emotional support and encouragement. Thank you for embedding a thirst for knowledge and for teaching me to dream.

Ruth Sykes for her spiritual guidance, encouragement and prayers.

Belinda Augustyn and Carol Roodt for their emotional support and for being the voice of encouragement and reason during many times of struggle.

Henry Cockeran for his friendship, emotional support and academic guidance and also for editing the final thesis.

Lynette Bower for all the printing during the research phase of my studies.

Martie Esterhuizen from the Vanderbijlpark campus library for her timely and gracious support.

Participants to the study for their time and willingness to share their extensive practical experience in order to improve this study.

Last, but definitely not least, Dr Diana Viljoen for stepping in and saving the day. I will be eternally grateful for your kindness, encouragement and guidance.



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SOLEMN DECLARATION

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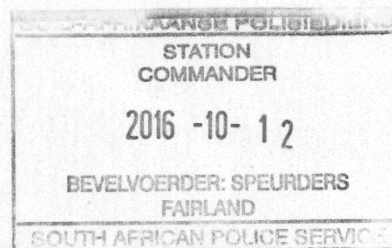
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Declared before me on this 12th day of October 2016

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Confirmation of Language Edit

This letter serves as confirmation that a language edit was completed on the PhD thesis entitled:

“Development of an enterprise risk management implementation model and assessment tool”
by Hermie le Roux (NWU student number: 11112891)

As agreed, the edit did not include work on the references or addenda.

Yours sincerely



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ABSTRACT

Key words: Enterprise risk management, implementation, implementation model, implementation assessment tool, risk practitioners, risk stakeholders, South African organisations, South African industries.

Globalisation, new technology, increased regulatory requirements, legal pressures, and disappearing boundaries — these factors have resulted in a dynamic business environment for all organisations where mediocrity is no longer tolerated. In response to this dynamic environment, thriving organisations are expected to have the following characteristics: (1) sound governance, including clarity of roles and responsibilities of the governing body; (2) processes and systems which ensure compliance and accountability for the organisation as a whole; (3) an explicit ethical framework; (4) detailed strategic, business, financial, and services planning; (5) shared strategic direction (identity, purpose, values, and culture); (6) an empowered workforce committed to the organisational direction; (7) a distinct management approach in terms of data, information and knowledge; (8) a clear understanding of what clients and other stakeholders need and how to fulfil those needs effectively; and (9) be well connected within the larger business community and services network (Bullen, 2015).

One of the other key aspects an organisation needs to focus on in order to thrive, even just to survive in this changing business environment, is the organisation's ability to respond to the changing risk landscape with an appropriate risk management approach (Accenture, 2015; Beasley, Branson & Hancock, 2015b; Deloitte, 2015; WEF, 2016). The role of the risk practitioner (such as the chief executive officer (CEO), chief risk officer (CRO), or another risk custodian) has changed from that of an advisor to a business partner as expectations regarding timely and transparent risk information from external and internal risk stakeholders have escalated (Senior Supervisors Group, 2009). The risk practitioner's ability to keep organisational decision makers informed of existing, new, and emerging risks, and therefore opportunities, is pivotal to the organisation's success — as it enables risk-based and timely organisational decisions leading to the creation, protection or enhancement of value within their business.

It stands to reason that a risk practitioner employed by an organisation operating within the ERM domain — with a clear understanding of the concept ERM, the adoption drivers of ERM, the proposed value-add for their organisation, and the barriers to ERM — should be able to develop an ERM implementation model and assessment tool to create, protect or enhance their organisation's value. The purpose of the study was therefore to develop an ERM implementation model and assessment tool that can be used by all risk practitioners as a guideline for ERM program implementation and to assess the level of ERM implementation within South African organisations. This study addressed 3 areas of concern that were identified during the preliminary literature review:

- 1) The misalignment between the principles of organisational design and ERM program design. Fourteen different organisational design models and different continual improvement models to identify the best suited model with which to align the conceptual ERM implementation model. Weisbord's six-box organisational design model and the Deming continual improvement cycle were selected due to its simplicity of design and the ease with which it could be applied to the ERM program.
- 2) Limited availability of literature on how to implement ERM. The way in which this research study attempts to address this area of concern is by proposing an ERM implementation model with a specific structure (7 building blocks that are based on Weisbord's six-box organisational design model and the continual improvement Deming cycle); with specific level 1 and level 2 best practice requirements (based on ISO 31000, ISO 31010 and King III); specific deliverables per requirement (derived from the best practice requirements and based on the researchers practical experience as a risk practitioner); and by proposing ERM implementation assessment tools that are based on the validated ERM implementation model. The confirmed ERM implementation assessment tools comply with Protiviti's 5 lines of defence risk governance model in terms of structure, assigned responsibility and process flow.
- 3) The ambiguity surrounding the concept of practice-based ERM. The conceptual ERM implementation model and the proposed ERM implementation assessment tools were validated by senior risk stakeholders from 8 different industries in an attempt to close the gap between ERM theory and ERM application. This resulted in the validated ERM implementation model and confirmed ERM implementation assessment tool.

To fulfil the purpose of the study and to address the areas of concern, the study was conducted in accordance with the principles of the pragmatic research paradigm. The mixed methods research method was used. Information regarding the context of ERM and the relevant theoretical frameworks for this study were gathered with a systematic literature review (qualitative). Information regarding the South African ERM domain, specific information regarding the aforementioned organisations' ERM programs, and the most applicable barriers to ERM implementation were gathered in the first phase of the empirical study by using a questionnaire (quantitative). The conceptualised ERM implementation model and the proposed ERM implementation assessment tool was validated through the second phase of the empirical study utilising the Delphi technique (qualitative). The results of the study should resonate with Albert Einstein's quote relating to science.

“Most of the fundamental ideas of science are essentially simple, and may, as a rule, be expressed in a language comprehensible to everyone.” – Albert Einstein

KEY TERMS

Definitions		Source
General Terms		
Risk	The probability and the magnitude of a loss, disaster or other undesirable event that could prevent an organisation from reaching its corporate objectives.	Hubbard, D. W. (2009). <i>The Failure of Risk Management: Why It's Broken and How to Fix It</i> . Boston: John Wiley & Sons, Inc. Pg. 8
Management	The planning, organisation, coordination, control, and direction of resources toward defined objective(s).	Hubbard, D. W. (2009). <i>The Failure of Risk Management: Why It's Broken and How to Fix It</i> . Boston: John Wiley & Sons, Inc. Pg. 9
Risk management	The identification, assessment, and prioritization of risks followed by coordinated and economical application of resources to minimize, monitor, and control the probability and/or impact of unfortunate events.	Hubbard, D. W. (2009). <i>The Failure of Risk Management: Why It's Broken and How to Fix It</i> . Boston: John Wiley & Sons, Inc. Pg. 9
Enterprise risk management	Enterprise risk management consists of active and intrusive processes that (1) are capable of challenging existing assumptions about the world within and outside the organisation; (2) communicate risk information with the use of distinct tools (such as risk maps, stress tests, and scenarios); (3) collectively address gaps in the control of risks that other control functions (such as internal audit and other boundary controls) leave unaddressed; and, in doing so, (4) complement—but do not displace—existing management control practices.	Mikes, A., & Kaplan, R. (2013). <i>Managing Risks: Towards a Contingency Theory of Enterprise Risk Management</i> . Working Papers -- Harvard Business School Division of Research, 1-41.
Enterprise risk management framework	A set of components that support and sustain risk management throughout an organisation. There are two types of components: foundations and organisational arrangements. <i>Foundations</i> include your risk management policy, objectives, mandate, and commitment. <i>Organisational arrangements</i> include the plans, relationships, accountabilities, resources, processes, and activities you use to manage your organisation's risk.	International Standards Organisation (ISO), Guide 73: Risk management vocabulary, 2009
Risk role players		
Risk owner	A risk owner is a person or entity that has been given the authority to manage a particular risk and is accountable for doing so.	International Standards Organisation (ISO), Guide 73: Risk management vocabulary, 2009
Risk facilitator	A person who makes risk management work as easily as possible by engaging the right people at the right time with the right attitude. The risk facilitator helps a group of people understand their common risk objectives and assists them to plan to achieve them without taking a particular position in the discussion.	Pullan, P. & Murray-Webster, R. (2011). <i>A Short Guide to Facilitating Risk Management</i> . Burlington: Gower Publishing. Pg. 39

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CHAPTER 1: INTRODUCTION

1.1 INTRODUCTION

Globalisation, new technology, increased regulatory requirements, legal pressures, and disappearing boundaries — these factors have resulted in a dynamic business environment for all organisations where mediocrity is no longer tolerated. In response to this dynamic environment, thriving organisations are expected to have the following characteristics: (1) sound governance, including clarity of roles and responsibilities of the governing body; (2) processes and systems which ensure compliance and accountability for the organisation as a whole; (3) an explicit ethical framework; (4) detailed strategic, business, financial, and services planning; (5) shared strategic direction (identity, purpose, values, and culture); (6) an empowered workforce committed to the organisational direction; (7) a distinct management approach in terms of data, information and knowledge; (8) a clear understanding of what clients and other stakeholders need and how to fulfil those needs effectively; and (9) be well connected within the larger business community and services network (Bullen, 2015).

1.2 BACKGROUND AND OUTLINE OF THE STUDY

One of the other key aspects an organisation needs to focus on in order to thrive, even just to survive in this changing business environment, is the organisation's ability to respond to the changing risk landscape with an appropriate risk management approach (Accenture, 2015; Beasley *et al.*, 2015b; Deloitte, 2015; WEF, 2016). Mikes and Kaplan (2013) state that any organisation, within any industry, needs an applied and pragmatic approach to clearly identify and holistically manage risks within the organisation and beyond. Such an approach to risk management will enable an organisation to become or remain resilient, adaptable, and relevant - despite the increased uncertainty of operating within a dynamic business environment. Increasingly, organisations are implementing enterprise risk management (ERM) as a framework of success (Carroll *et al.*, 2014).

The focus of the preliminary literature review was to find evidence from the existing body of literature that will support the notion that an applied and pragmatic ERM implementation model can be the conduit for effective and efficient risk management, as confirmed through the development of an ERM implementation assessment tool.

The researcher investigated the context of the ERM domain (as discussed in Chapter 2). Firstly, examining several different *ERM definitions* presented by academics and industry (Banham, 1999; Miccolis, 2000; D'Arcy & Brogan, 2001; CAS, 2003; Holton, 2004; COSO, 2004; Bowen *et al.*, 2006; Mikes & Kaplan, 2013; Bromiley *et al.*, 2014); *the adoption drivers for ERM implementation* (Banham, 1999; DeLoach, 2000; Dickinson, 2001; Miccolis & Shah, 2001; Standard & Poor, 2008; Hubbard, 2009; Teach, 2013); *the value add propositioned by an ERM implementation program* (Stulz, 1996; Beasley *et al.*, 2005; Beasley *et al.*, 2008; Gordon *et al.*, 2009; Arena *et al.*, 2010; Pagach & Warr, 2010; Arena *et al.*, 2011; Hoyt & Liebenberg, 2011; McShane, Nair & Rustambekov, 2011; Pagach & Warr, 2011; Mikes & Kaplan, 2013; Beasley *et al.*, 2015a); and the different *barriers to ERM implementation* (Tufano, 1996; Nocco & Stulz, 2006; Hamill, 2007; Martin & Power, 2007; Schanfield & Helming, 2008; Burnaby & Hass, 2009; Senior Supervisors Group, 2009; Harner, 2010; Lam, 2010; Prodyot *et al.*, 2013; Hellings, 2014; Kerstin *et al.*, 2014; Van Zyl, 2014; Viscelli *et al.*, 2014).

In order to propose *the conceptual ERM implementation model*, as discussed in Chapter 3, the researcher outlined organisational theory, structure, and design; evaluated several organisational design models (Lewin, 1943; Von Bertalanffy, 1950; Leavitt, 1965; Likert, 1967; Galbraith, 1970; Beckhard, 1972; Weisbord, 1976; Nadler & Tushman, 1980; Waterman & Peters, 1982; Tichy, 1983; Nelson & Burns, 1984; Freedman, 1987; Hanna, 1988; Bolman & Deal, 1991; Burke & Litwin, 1992; Toplis & Randell, 2014), together with the Deming cycle (Deming, 1982), in order to determine the building blocks of the ERM implementation model - which will be aligned with the underlying principles of organisational design. The researcher based the requirements for the ERM implementation model on the ERM best practice guidelines, as described in: ISO 31000: Risk management principles and guidelines (ISO, 2009b); ISO 31010: Risk management - Risk assessment techniques (ISO, 2009c); Guide 73: Risk management vocabulary (ISO, 2009a); and the King Code on Corporate Governance for South Africa (IODSA, 2009).

This phase of the literature study concluded with *the proposed ERM implementation assessment tool* to be utilised in order to determine: (1) the level of ERM implementation within the organisation, and (2) the validated degree of formality achieved, as the foundation for the continual improvement of ERM practices within the organisation (Tersine, 2004).

Also, as part of the literature review, the researcher identified several recommendations made for future research pertaining to ERM implementation (addressed in Chapter 6). These included the fact that there is a *misalignment between the principles of organisational design and ERM implementation program design* (Arena *et al.*, 2010; Bromiley *et al.*, 2014); and that there is limited literature available on *how to implement and assess ERM deployment within an organisation* (Liebenberg & Hoyt, 2003; Beasley *et al.*, 2005; Nocco & Stulz, 2006; Blaskovich & Taylor, 2011; Fox, 2012; Gates *et al.*, 2012; Bromiley *et al.*, 2014; Kerstin *et al.*, 2014; Viscelli *et al.*, 2014). The *concept of practice-based ERM* should also be investigated (Arena *et al.*, 2010; Arena *et al.*, 2011; Mikes & Kaplan, 2013).

1.3 PROBLEM STATEMENT

The role of the risk practitioner (such as the chief executive officer (CEO), chief risk officer (CRO), or another risk custodian) has changed from that of an advisor to a business partner as expectations regarding timely and transparent risk information from external and internal risk stakeholders have escalated (Senior Supervisors Group, 2009). The risk practitioner's ability to keep organisational decision makers informed of existing, new, and emerging risks, and therefore opportunities, is pivotal to the organisation's success - it enables risk-based and timely organisational decisions leading to the creation, protection or enhancement of value within their business.

It stands to reason that a risk practitioner employed by an organisation operating within the ERM domain - with a clear understanding of the concept ERM, the adoption drivers of ERM, the proposed value-add for their organisation, and the barriers to ERM - should be able to develop an ERM implementation model and assessment tool to create, protect or enhance their organisation's value. It is, however, clear from the ambiguity surrounding the common understanding of ERM that it is difficult to implement (Colquitt *et al.*, 1999; Kleffner *et al.*, 2003; Liebenberg & Hoyt, 2003; Aabo *et al.*, 2005; Beasley *et al.*, 2005; Nocco & Stulz, 2006; Pagach & Warr, 2011).

Based on the results of the preliminary literature review and the researcher's own risk management experience of 24 years, an in-depth study has been done on how to translate an overarching strategic ERM approach into a practice-based ERM framework, with an implementation model and assessment tool to enable any organisation, within any industry, to sufficiently implement it. The results of the preliminary literature review highlighted several areas of concern with regards to the discipline known as Enterprise Risk Management (ERM).

After careful consideration, the scope of the study was limited to the following areas of concern as identified by various researchers:

- The misalignment between the principles of organisational design and ERM program design (Martin & Power, 2007; Arena *et al.*, 2010; Bromiley *et al.*, 2014).
- The availability of limited literature on how to implement ERM (Liebenberg & Hoyt, 2003; Beasley, Clune, *et al.*, 2005; Nocco & Stulz, 2006; Blaskovich & Taylor, 2011; Fox, 2012; Gates *et al.*, 2012; Bromiley *et al.*, 2014; Kerstin *et al.*, 2014; Viscelli *et al.*, 2014).
- The ambiguity surrounding the concept practice-based ERM (Arena *et al.*, 2010; Arena *et al.*, 2011; Mikes & Kaplan, 2013).

The purpose of the study was therefore to develop an ERM implementation model and assessment tool that can be used by all risk stakeholders as a guideline for ERM implementation and to assess the level of ERM implementation within South African organisations.

This research project was an attempt to address the aforementioned areas of concern in the existing literature by:

- Proposing an ERM implementation model that will adhere to the principles of continual improvement as described in the Deming cycle: plan-do-check-adjust (Deming, 1982);
- Developing an ERM implementation model that will be aligned with organisational design models — in order to provide the theoretical framework, as well as the key requirements of: ISO 31000: Risk management principles and guidelines (ISO, 2009b); ISO 31010: Risk management – Risk assessment techniques (ISO, 2009c); Guide 73: Risk management vocabulary (ISO, 2009a); and the King Code on Corporate Governance for South Africa (IODSA, 2009); and
- Developing an ERM implementation assessment tool to determine the level with which an organisation's ERM implementation model has been realised within the business.

1.4 OBJECTIVES OF THE STUDY

The following primary, theoretical, and empirical objectives of this study are explained in this section.

1.4.1 Primary objective

The primary objective of this study was to develop and validate a conceptual ERM implementation model as well as an ERM implementation assessment tool.

1.4.2 Theoretical objectives

The researcher identified the following theoretical objectives for this study:

1. Describe the ERM domain in terms of the scope and definition of ERM, ERM adoption drivers, and the perceived value proposition of ERM implementation;
2. Identify and document the barriers to ERM implementation;
3. Explore the use of organisational design models and the principles of continual improvement as the theoretical frameworks for the conceptual ERM implementation model;
4. Develop the conceptual ERM implementation model; and
5. Develop a proposed ERM implementation assessment tool consisting of checklists and dashboards.

1.4.3 Empirical objectives

The researcher identified the following empirical objectives for this study:

1. Obtain information about the South African ERM domain, with specific reference to the industry, the type of organisation, and the position of the risk practitioner within the organisation;
2. Identify and document information about the current ERM programs for a sample of South African organisations and rank the barriers to ERM implementation; and
3. Adjust the conceptualised ERM implementation model and the proposed ERM assessment tool based on the expertise of senior risk stakeholders within South African organisations.

1.5 RESEARCH DESIGN AND METHOD

This study was conducted in accordance with the principles of the pragmatic research paradigm (refer to Section 4.4). The mixed methods research method was used. According to Palinkas *et al* (2011): “in implementation research, quantitative and qualitative methods often play important roles, either simultaneously or sequentially, for the purpose of answering the same question through (a) convergence of results from different sources, (b) answering related questions in a complementary fashion, (c) using one set of methods to expand or explain the results obtained from use of the other set of methods, (d) using one set of methods to develop questionnaires or conceptual models that inform the use of the other set, or (e) using one set of methods to identify the sample for analysis using the other set of methods”.

First, information regarding the context of ERM and the relevant theoretical frameworks was gathered using a systematic literature review (qualitative). Second, general information regarding the South African ERM landscape and specific information regarding the sampled organisations' ERM programs was gathered in the first phase by using a questionnaire in order to confirm elements of the ERM domain for South African organisations and the problem statement (quantitative). Last, the conceptualised ERM implementation model and the proposed assessment tool was validated through the second phase utilising the Delphi technique (qualitative).

1.6 CHAPTER OUTLINE

The chapter outline is as follows:

Chapter 1: Introduction contains an outline of the background to and demarcation of the study, the problem statement, the objectives of the study, an overview of the research design and method, and the chapter outline.

Chapter 2: The Enterprise Risk Management Domain contains a discussion on ERM in terms of the existing literature reviewed for: the different ERM definitions; adoption drivers; the perceived value proposition of the ERM implementation program; and the barriers to ERM implementation.

Chapter 3: Organisational Design Models and Continual Improvement contains the results of the systematic literature review and it consists of three parts: (1) an overview of organisational theory; (2) the evaluation of 14 organisational design models in order to identify the ERM implementation model building blocks; (3) a discussion on the principles of continual improvement as described in the Deming cycle in order to structure the ERM implementation model as a continual improvement cycle.

Chapter 4: Research Design and Method outlines the selection criteria for the research method, participants, and the methods used during the different phases of the research project. It also contains the results of phase 1 of the empirical portion of the study where the objective was to confirm certain elements of the ERM domain for South African organisations and also to confirm the problem statement.

Chapter 5: Conceptual Enterprise Risk Management Implementation Model and Proposed Enterprise Risk Management Implementation Assessment Tool presents and reports on the conceptual model and proposed assessment tool that are based on the data collected during the systematic literature review.

Chapter 6: Validated Enterprise Risk Management Implementation Model and Confirmed Enterprise Risk Management Implementation Assessment Tool presents and reports on the results of the validation of the conceptual ERM implementation model and the confirmation of the ERM implementation assessment tool.

Chapter 7: Summary, Conclusions, Limitations and Recommendations concludes the thesis with a summary of the previous chapters per research objective and by discussing the conclusions, limitations of the study, and recommendations for future research.

CHAPTER 2: THE ENTERPRISE RISK MANAGEMENT DOMAIN

2.1 INTRODUCTION

An evolving understanding of a significantly changed operating landscape is leading to changes in the way organisations determine key risks and the way they go about implementing strategies on an organisation-wide basis beyond those risks to create, protect or enhance value for the organisation. In response, many regulators, standard setting agencies, risk practitioners, professional bodies, and academics have advocated a new approach to risk management: ERM (Mikes & Kaplan; 2013).

At its core, ERM proposes the integrated management of all the risks an organisation faces, irrespective of the industry it functions in, as a comprehensive and coherent approach instead of managing them individually. This inherently requires the alignment of risk management with an organisation's corporate governance and strategy (Bromiley *et al.*, 2014).

Increasingly, organisations are advised to use ERM as a framework for success within the constantly changing economic, business, and regulatory environment. In fact, it is argued that organisations can only succeed if they take a strategic, proactive and holistic approach to risk management (Mikes & Kaplan; 2013). This would entail successfully integrating strategy, processes, business arrangements, resources, systems, and empowered workforces in order to render their core business, mitigate uncertainty, build resilience, and be better poised for opportunities (Carroll *et al.*, 2014).

Understanding the ERM domain; recognising the elements necessary for ERM program development and implementation; and deliberately embedding these aspects within an enterprise, is imperative to its success and sustainability within a dynamic environment (Carroll *et al.*, 2014). The purpose of this chapter is to discuss the aforementioned elements under the umbrella of the ERM domain in order to satisfy the requirements of the first and second theoretical objectives (refer to Section 1.4.2). The chapter commences with identifying the scope and definition of ERM and continues by highlighting the ERM adoption drivers, discussing the proposed value added by the ERM implementation program, and listing the barriers to ERM implementation.

2.2 SCOPE AND DEFINITION OF ENTERPRISE RISK MANAGEMENT

A myriad of stakeholders within the ERM landscape have attempted to postulate the scope and an all-encompassing definition of ERM over the last 20 years. Such articles, however, have been published largely in accounting and finance journals but rarely in management journals (Liebenberg & Hoyt, 2003; Bromiley *et al.*, 2014). Bromiley *et al.* (2014) confirm, however, that ERM offers an important new research domain for management scholars, specifically in contributing to a different focus on ERM than previous management research on risk. Management and strategy literature on risk tried to explain differences in organisations' risk over time and across firms (Liebenberg & Hoyt, 2003; Bromiley *et al.*, 2014).

In order to contribute to the current ERM discussion (refer to the areas of concern as discussed in Section 1.3), management scholars need to take a more prescriptive stance and pay more attention to translating the strategic objectives of ERM into practical management tools, such as an ERM implementation program and assessment tool to be employed within an organisation in any industry (Bromiley *et al.*, 2014). Understandably, however, a one-size-fits-all approach is not applicable to ERM as each organisation will employ such programs and tools in a manner that accommodates differences in mission, vision, corporate governance, strategic direction, and culture. However, core ERM program components will be consistent and relevant to any organisation. Recognising this at the outset will encourage the risk management professional to define and modify basic structural elements in the ERM implementation program to fit their specific organisational needs, particularly as they relate to unique delivery settings (Carroll *et al.*, 2014).

Adopting a definition of ERM that is clear, concise and understandable is one of the significant early steps in developing an ERM implementation program prior to embedding such a program within any organisation in any industry. Without an articulated definition, which the organisation can embrace, the activities associated with ERM development, implementation and assessment can become disjointed and without purpose (Carroll *et al.*, 2014).

The researcher undertook an extensive literature review to identify the scope and an all-encompassing definition of ERM. Table 2.1 lists the ERM definitions obtained from academic journals and textbooks; and Table 2.2 contains ERM definitions sourced from standard setting organisations, industry journals, professional bodies, consulting firms, and rating agencies.

Table 2.1: ERM definitions from academic journals and textbooks

*Publication/ Publisher	Accreditation	Year	Authors	Definition
Financial Times Press	Book	2000	DeLoach	ERM is a structured and disciplined approach [that] aligns strategy, processes, people, technology and knowledge with the purpose of evaluating and managing the uncertainties the enterprise faces as it creates value. It is a truly holistic, integrated, forward looking and process-oriented approach to managing all key business risks and opportunities, not just financial ones, with the intent of maximising shareholder value for the enterprise as a whole.
The Geneva Papers on Risk and Insurance-Issues and Practice	Non- accredited	2001	Dickinson	ERM is a systematic and integrated approach of the management of the total risks a company faces.
Journal of Risk Management of Korea	Non- accredited	2001	D'Arcy & Brogan	ERM is the process by which organisations in all industries assess, control, exploit, finance and monitor risks from all sources for the purpose of increasing the organisation's short and long term value to its stakeholders.
Harvard Business School Division of Research	Book	2002	Meulbroek	Integrated risk management is the identification and assessment of the collective risks that affect firm value, and the implementation of a firm-wide strategy to manage those risks.
Journal of Applied Corporate Finance	Accredited	2002	Harrington, Niehaus & Risko	The idea that a firm should examine all of its risk exposures and deal with them using a consistent framework came to be known as enterprise risk management (ERM). To facilitate communication among different areas within a firm and the adoption of a consistent risk management framework, some firms even established a new position – the chief risk officer.

*Publication/ Publisher	Accreditation	Year	Authors	Definition
Financial Times Press	Book	2002	Barton, Shenkir & Walker	Enterprise-wide risk management shifts risk management from a fragmented, ad hoc, narrow approach to an integrated, continuous, and broadly focused approach.
Journal of Applied Corporate Finance	Accredited	2003	Smith, Niehaus, Briscoe, Coleman, Lawder, Ramamurtie, Verbrugge & Chew	ERM is corporate-wide, as opposed to departmentalized, efforts to manage all the firm's risks, in fact, it is total liability structured in a way that helps management to carry out its goal of maximizing the value of the firm's assets. It amounts to a highly coordinated attempt to use the right-hand side of the balance sheet to support the left-hand side, which, as finance theory tells us, is where most of the value is created.
Long Range Planning	Accredited	2003	Miller & Waller	Integrated risk management is consideration of the full range of uncertain contingencies affecting business performance.
Risk Management and Insurance Review	Non-accredited	2003	Kleffner, Lee, & McGannon	In contrast to the traditional "silo" based approach to managing risk, the ERM approach requires a company-wide approach to be taken in identifying, assessing, and managing risk.
Risk Management and Insurance Review	Non-accredited	2003	Liebenberg & Hoyt	Unlike the traditional "silo-based" approach to corporate risk management, ERM enables firms to benefit from an integrated approach to managing risk that shifts the focus of the risk management function from primarily defensive to increasingly offensive and strategic. ERM enables firms to manage a wide array of risks in an integrated, holistic fashion.

*Publication/ Publisher	Accreditation	Year	Authors	Definition
Management Accounting Quarterly	Non-accredited	2004	Sobel & Reding	ERM is a structured and disciplined approach to help management understand and manage uncertainties and encompasses all business risks using an integrated and holistic approach.
Harvard Business School Division of Research	Accredited	2013	Mikes & Kaplan	Enterprise risk management consists of active and intrusive processes that (1) are capable of challenging existing assumptions about the world within and outside the organisation; (2) communicate risk information with the use of distinct tools (such as risk maps, stress tests, and scenarios); (3) collectively address gaps in the control of risks that other control functions (such as internal audit and other boundary controls) leave unaddressed; and, in doing so, (4) complement—but do not displace—existing management control practices.

Source: Adapted from Bromiley *et al.* (2014:2-3).

Table 2.2: ERM definitions from standard setting organisations, industry journals, professional bodies, consulting firms, and rating agencies

*Publication / Publisher	Source	Year	Authors	Definition
Continuity Analysis Website	Consulting	1996	Holton	ERM is about optimizing the process with which risks are taken.
CFO Magazine	Industry journal	1999	Banham	The goal of ERM is to identify, analyse, quantify, and compare all of a corporation's exposures stemming from operational, financial, and strategic activities.
International Risk Management Institute, Inc. (IRMI)	Professional body	2000	Miccolis	ERM is a rigorous approach to assessing and addressing the risks from all sources that threaten the achievement of an organisation's strategic objectives.

*Publication / Publisher	Source	Year	Authors	Definition
Erisk.com	Industry journal	2000	Deragon	ERM simply seeks to manage interrelationships systemically, in order to minimize variation, reduce inherent risks, and increase positive synergies.
Tillinghast-Towers Perrin	Consulting	2001	Miccolis & Shah	ERM is generally defined as assessing and addressing risks, from all sources, that represent either material threats to business objectives or opportunities to exploit for competitive advantage.
Treasury Board of Canada Secretariat (TBCS)	Professional body	2001	TBCS	Risk management is a systematic approach to setting the best course of action under uncertainty by identifying, assessing, understanding, acting on and communicating risk issues.
Casualty Actuarial Society (CAS)	Professional body	2003	CAS	ERM is the process by which organisations in all industries assess, control, exploit, finance and monitor risks from all sources for the purpose of increasing the organisation's short and long term value to its stakeholders.
Institute of Internal Audit (IIA)	Professional body	2003	Spencer-Pickett	Enterprise risk management is a rigorous and coordinated approach to assessing and responding to all risks that affect the achievement of an organisation's strategic and financial objectives.
Committee of Sponsoring Organisations (COSO)	Standard setting organisation	2004	COSO	ERM is a process, effected by an entity's board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives.
Council of Standards Australia and Council of Standards New Zealand (AUS/NZ)	Standard setting organisation	2004	AUS/NZ	Risk management is the culture, processes and structures directed to the effective management of potential opportunities and adverse effects.

*Publication / Publisher	Source	Year	Authors	Definition
Society of Actuaries (SOA)	Professional body	2006	Bowen	ERM is the process by which organisations in all industries assess, control, exploit, finance and monitor risks from all sources for the purpose of increasing the organisation's short and long term value to its stakeholders.
Standard & Poor's	Rating agency	2008	Standard & Poor's	ERM is an approach to assure the firm is attending to all risks; a set of expectations among management, shareholders, and the board about which risks the firm will and will not take; a set of methods for avoiding situations that might result in losses that would be outside the firm's tolerance; a method to shift focus from "cost/benefit" to "risk/reward"; a way to help fulfil a fundamental responsibility of a company's board and senior management; a toolkit for trimming excess risks and a system for intelligently selecting which risks need trimming; and a language for communicating the firm's efforts to maintain a manageable risk profile.
International Organisation for Standardisation (ISO)	Standard setting organisation	2009a	ISO	Risk management is coordinated activities to direct and control an organisation with regard to risk.
Risk Management Society (RIMS)	Professional body	2011	RIMS	ERM is a strategic business discipline that supports the achievement of an organisation's objectives by addressing the full spectrum of its risks and managing the combined impact of those risks as an interrelated risk portfolio.

Source: Adapted from Bromiley, *et al.* (2014:2-3).

It is evident from the diversity of the definitions (as shown in Tables 2.1 & 2.2), and the difference in emphasis of the included aspects, that there is some ambiguity pertaining to the understanding of ERM even amongst stakeholders within the ERM domain. However, despite this ambiguity it is clear that the level of understanding of the term ERM has evolved significantly over the last 20 years. In its most basic form, ERM is presented as a tool to optimise the process with which risks are taken (Holton, 1996). Several authors have expanded on that definition by stating that ERM is a systematic, continuous and integrated approach to risk management (DeLoach, 2000; Dickinson, 2001; TBCS, 2001; Barton *et al.*, 2002; Meulbroek, 2002; Miller & Waller, 2003; ISO, 2009a).

D'Archy and Brogan (2001) were the first authors to suggest that ERM could be implemented for all organisations within all industries. This was supported by the actuarial professional bodies: Casualty Actuarial Society (CAS, 2003) and the Society of Actuaries (SOA) (Bowen *et al.*, 2006). The fundamentals of an ERM approach and process remains the same irrespective of the type of organisation and industry. The complexity and degree of formalisation of the ERM implementation program and assessment tool will however be different for each organisation and type of industry.

DeLoach (2000), Miccolis (2000), and Spencer-Pickett (2003) highlighted that the ERM approach and process should be aligned with the strategic objectives of the specific organisation in question. Some of the other definitions assigned specific responsibilities for the ERM process to the board of directors, management and even the shareholders (COSO, 2004; Sobel & Reding, 2004; Standard & Poor, 2008). In 2004, the Council of Standards Australia and the Council of Standards New Zealand added organisational culture to the ERM requirements by including it in their AUS/NZ 4360 Risk Management Standard (AUS/NZ, 2004).

After due consideration of the available ERM definitions found in current literature (refer to Tables 2.1 & 2.2), the study supports Mikes and Kaplan's ERM definition that was developed in 2013. It can be argued that the selected ERM definition is rooted in practice and that it is best suited for a pragmatic research study with ERM implementation as its driving force. The definition states that:

Enterprise risk management *consists of a framework of active and intrusive methods and processes that (1) are capable of challenging existing assumptions about the world within and outside the organisation; (2) communicate risk information with the use of distinct tools (such as risk maps, stress tests, and scenarios); (3) collectively address gaps in the control of risks that other control functions (such as internal audit and other boundary controls) leave unaddressed; and, in doing so, (4) complement — but do not displace — existing management control practices.*

For the purpose of this study, it is also necessary to demarcate the terms (1) ERM implementation and (2) ERM implementation program:

ERM implementation includes the execution associated with the ERM framework of plans, processes, critical success factors, people, systems, barriers to implementation, and the assessment of the degree of formality of such an implementation (Liebenberg & Hoyt, 2003; Beasley, Clune, *et al.*, 2005; Nocco & Stulz, 2006; Blaskovich & Taylor, 2011; Fox, 2012; Gates *et al.*, 2012; Bromiley *et al.*, 2014; Kerstin *et al.*, 2014; Viscelli *et al.*, 2014).

Although the term **ERM implementation program** is not specifically defined in the literature reviewed; the researcher deduced, based on the use of the term in the literature, that it means the framework outlining all the activities involved with the design, implementation, ongoing monitoring and assessment of ERM within an organisation which can include, but is not limited to, the people, processes, tasks and systems.

2.3 DRIVERS OF ENTERPRISE RISK MANAGEMENT ADOPTION

Section 2.2 established that the idea of ERM has gained substantial momentum over the last 20 years (Paape & Speklé, 2012). Specifically, the notion that ERM has the potential to provide organisations with substantial competitive advantage when adopting the proactive end-to-end approach, providing a framework of methods and processes which aims to identify and manage risks, as well as exploit opportunities in alignment with the organisation's mission, vision, corporate governance, strategic direction and culture (Thompson Reuters Accelus, 2014). Such competitive advantage can only be created when organisations recognise the importance of ERM to such an extent that they will allocate the necessary resources to the development and implementation of a formalised ERM program.

The importance of clearly and concisely defining ERM specific to an organisation before embedding such an ERM program within the organisation, was discussed in the previous section. A number of additional drivers are converging within the South African, and global, business environments that add up to a powerful business case for an enterprise approach to risk management.

Several benefits as a result of employing an ERM program, and the characteristics of the organisations that adopt an ERM program, have been proposed as adoption drivers influencing the extent to which an ERM program is adopted within any organisation.

They include, but are not limited to: the size of the organisation, the type of industry, changes in the regulatory environment, internal organisational factors, ownership structure, the training of the risk managers, the appointment of a chief risk officer (CRO), a broader scope of risks, and operational benefits (Colquitt *et al.*, 1999; Harrington *et al.*, 2002; Liebenberg & Hoyt, 2003; Beasley *et al.*, 2005; Aabo *et al.*, 2002; Pagach & Warr, 2011; Desender, 2011; Paape & Speklé, 2012). The adoption drivers are as follows:

- The level of risk management integration is affected by the *size of the organisation*. An organisation that is larger, more volatile and with greater institutional ownership tends to have more formalised and high quality ERM programs (Colquitt *et al.*, 1999; Pagach & Warr, 2011; Baxter *et al.*, 2013, Acharyya & Mutenga, 2013).
- Another equally important adoption driver is the *changes in the regulatory environment compliance requirements* in the form of revised corporate governance codes, risk management best practice frameworks, regulations and laws (Kleffner *et al.*, 1999; Liebenberg & Hoyt, 2003; Paape & Speklé, 2012; Acharyya & Mutenga, 2013).
- Several studies suggest that there are certain *internal organisational motivations* for adopting an ERM program, such as the maximisation of shareholder wealth (Aabo *et al.*, 2002); a positive relationship between the organisation's value and ERM program implementation (Liebenberg & Hoyt, 2003; Nocco & Stultz, 2006; Hoyt & Liebenberg, 2011); and establishing the tone of the organisation insofar as risk management being accepted as everyone's responsibility (Aabo *et al.*, 2002).
- Desender (2011) found that *the ownership structure* also plays a role: organisations with a separate chairman and CEO favour more elaborate ERM programs and show the highest level of ERM implementation.

- ERM program adoption is also the result of the *broader scope of risks* arising from factors such as globalisation; industry consolidation and deregulation; increased regulatory attention to corporate governance; and technological progress that enables better risk quantification and analysis results in the adoption of a more formalised ERM program (Miller & Waller, 1992; Lam & Kawamoto, 1997; Miccolis & Shah, 2001). The aforementioned also has as a result the evolution of *the role of the risk manager* from adviser to business partner (Colquitt *et al.*, 1999; Mikes & Kaplan; 2013).
- Studies also found the stage of ERM implementation to be positively related to the presence of a *chief risk officer (CRO)*, maintaining board independence, obtaining CEO and CFO support for ERM, employing a Big Four auditor, taking into account entity size, and entities in the banking, education, and insurance industries. (Liebenberg & Hoyt, 2003; Beasley *et al.*, 2005).
- Another adoption driver pertains to understanding *the broader scope of risks and operational benefits* as a result of the information gathered, pertaining to the operations of the organisation, by the implementation of ERM. By providing managers with a better understanding of their business, its risk-appetite and events that can undermine the firm's strategic objectives, ERM can lead to better operating decisions as well as a more efficient approach to risk retention and risk transfer (Harrington *et al.*, 2002; Aabo *et al.*, 2006).

2.4 PERCEIVED VALUE PROPOSITION OF ENTERPRISE RISK MANAGEMENT IMPLEMENTATION

Based on Section 2.2 and 2.3, it stands to reason that management scholars can contribute to the ERM discourse by refocussing ERM from an overarching, strategic approach to a framework of methods and processes which aims to identify and manage risks, as well as exploit opportunities, in alignment with the organisation's mission, vision, corporate governance, strategic direction and culture. However, this will only be achieved when organisations recognise the importance of ERM to such an extent that they will allocate the necessary resources to the development and implementation of a formalised ERM program. Many organisations fail to recognise the contribution that the deployment of an ERM implementation program can make to create, protect or enhance value within their business (Liebenberg & Hoyt, 2003; Nocco & Stultz 2006; Hoyt & Liebenberg, 2011). In support of the ultimate aim of this study, it is important to review the literature dealing with the perceived value proposition from ERM implementation.

Several authors propose that an efficient and effective ERM implementation program and assessment tool will increase shareholder wealth (Aabo *et al.*, 2002), improve the value of the organisation (Liebenberg & Hoyt, 2003; Nocco & Stultz, 2006; Hoyt & Liebenberg, 2011), and also enhance the performance of the organisation (Gordon *et al.*, 2009).

Gordon *et al.* (2009) found that the relationship between ERM and organisational performance is affected by environmental uncertainty, industry competition, organisational size, organisational complexity, and the level of the board of directors' monitoring. It stands to reason that these factors have to be considered when an ERM implementation program and assessment tool is developed.

According to the results of surveys done by the North Carolina University in 2010 on the state of ERM oversight (Beasley *et al.*, 2015a); as well as the Risk & Insurance Management Society (RIMS) in 2013 on ERM, the perceived value added by an ERM program could be to:

- Increase risk awareness;
- Align risk appetite and strategy;
- Avoid and/or mitigate risks;
- Enhance risk-based decisions;
- Reduce operational surprises and losses;
- Eliminate silos, such as identifying and managing risks across the enterprise; and
- Improve resource allocation.

2.5 BARRIERS TO ENTERPRISE RISK MANAGEMENT IMPLEMENTATION

If an organisation proceeds to implement an ERM program and assessment tool in an integrated and coordinated manner company-wide, it has the potential to add substantial value to the organisation. However, this value will only be realised if risk practitioners ensure that ERM is integrated into the strategic and operational processes of their organisations (Arena *et al.*, 2011). As such, the stakeholders deploying the ERM program will need to cross several common barriers hindering the efficient implementation thereof (Tufano, 1996; Nocco & Stultz, 2006; Fraser & Simkins, 2007; Martin & Power, 2007; Burnaby & Hass, 2009; Schanfield & Helming, 2008; Beasley *et al.*, 2009; Lam, 2010; Harner, 2010; Beaumier & DeLoach, 2011; Blaskovich & Taylor, 2011; Merchant, 2012; Prodyot *et al.*, 2013; Van Zyl, 2014; Hellings, 2014; Viscelli *et al.*, 2014; Dornberger *et al.*, 2014).

The researcher reviewed both the scholarly and practice-based discourse to identify 136 barriers to ERM implementation as depicted in Table 2.3. These barriers were then categorised according to different themes. This is reflected in Table 2.4. The aforementioned is summarised based on the frequency with which it occurred and this is outlined in Table 2.5. Figure 2.1 is a graphical representation of the findings in Table 2.5.

Table 2.3: The initial barriers to ERM implementation

Barriers to ERM Implementation	
1	Incorrect or incomplete inventory of risks resulting in risk aggregation problems, incorrect risk reporting and wrongful allocation of resources.
2	The basis for risk quantification is different when using value based management vs. accounting based decision making resulting in ineffective risk treatment decisions.
3	Weak governance of ERM where the organisational decision making structure as well as the roles and responsibilities of risk owners and the risk champions within the organisation are unclear, resulting in a lack of risk ownership.
4	Inherent risk as a workable basis for ERM is impossible to measure resulting in the defective assessment and resultant management of risk.
5	An organisational mind-set that proposes viewing risk management as an end unto itself, emphasising a disconnect between the organisation's strategic objectives and the ERM initiative.
6	The misconception that risk tolerance is the same as risk appetite.
8	ERM is viewed as a set of separate, largely independent departmental undertakings and it is not integrated into key business processes.
9	Many companies, when starting to implement ERM, fail to distinguish clearly enough between greater and lesser risks. As a consequence, "process-driven" ERM systems can result in high scores assigned, and excessive attention paid, to areas of relatively low risk.
10	The value of the ERM program is not quantifiable and unclear.
11	ERM is a compliance initiative and does not add measurable value to the organisation.
12	No mandate from the top to design and implement an ERM program.
13	Lack of a centralised ERM department and low level of buy-in.

Barriers to ERM Implementation	
14	Inappropriate risk control framework.
15	Little or no effort to identify all risks.
16	Risk assessment criteria are not standardised.
17	Misalignment between a business unit's objectives and performance measures.
18	Unclear risk criteria.
19	Monthly ERM reporting system does not exist or is not formalised.
20	Analysis by ERM department not done.
21	Risk owners and the ERM department do not continuously monitor the implementation of the risk management process.
22	Competing priorities between the risk stakeholders' operational and risk management responsibilities in respect of time, attention and budget.
23	Insufficient resources to manage risks effectively and efficiently.
24	Lack of perceived value added by the ERM program.
25	Lack of board-level or senior executive ERM leadership.
26	Perception ERM adds bureaucracy to day-to-day operations.
27	Legal or regulatory barriers.
28	Top-down risk assessment approach is inadequate as the only risk identification tool.
29	Misalignment between organisational design and ERM program design.
30	Lack of a common risk language.
31	Selecting the wrong ERM best practice framework.
32	Badly articulated benefits of the ERM program.
33	Risk identification tools and techniques are not standardised.
34	Inappropriate risk assessment tools and techniques.

Barriers to ERM Implementation	
35	Treating risk: leading management and the board through the exercise of understanding their treatment options is complex. It is often challenging to determine an appropriate response. The organisation may not have the expertise needed to mitigate highly specialised risks.
36	Lack of, or no monitoring of, risk treatment effectiveness.
37	Low level of risk awareness.
38	Risk management technology systems are not based on best practice ERM frameworks and this results in incorrect information for risk reporting and decision making.
39	Disconnect between ERM, strategy formulation and HR management.
40	ERM is seen as a compliance exercise.
41	Little or no board risk oversight.
42	No risk management policy to provide standardised risk management guidelines.
43	ERM is not integrated into key business processes such as strategy formulation, budgeting and performance management.
44	Stress testing and scenario analysis do not form part of risk quantification.
45	Informal assurance and feedback loops.
46	Weak risk culture and absence of change management.
47	Imbalance in the risk-reward relationship. Executives are rewarded for excessive risk-taking.
48	Employees are overconfident that the formalised risk management initiatives will prevent risks and as such they are less diligent.
49	A focus on regulatory compliance may distract attention from emerging risks.
50	A clearly defined risk strategy is in place at most institutions, but significant areas of weakness remain.
51	The traditional silo-based approach to risk management continues to pose problems (a lack of coordination and communication between business lines).
52	Poor data quality and lack of adequate data for risk reporting.

Barriers to ERM Implementation	
53	The presence of cognitive biases in the decision-making process cautions against blind reliance on more internal controls and risk management as the solution.
54	A win-at-all-cost corporate culture results in a lower level of risk awareness and poorly executed risk based decisions.
55	Poorly articulated benefits from ERM program implementation.
56	Poor risk governance and lack of senior executive project sponsorship.
57	Reckless risk-taking during periods of rapid growth.
58	Most efforts to implement ERM are unfocused, severely resource-constrained and pushed down so far into the organisation that it is difficult to establish their relevance at the highest levels of the organisation.
59	Inappropriate risk assessment tools and techniques.
60	Falling prey to a “herd mentality”: while ineffective risk management certainly contributed to the financial crisis, there were other causal factors, such as lax regulation, financial innovation that went awry, non-existent underwriting standards, over-the-top debt and motivations driven by a short-term focus on incentive compensation programs.
61	Misunderstanding the “If You Can’t Measure It, You Can’t Manage It!” mind-set: a prevalent view is that if you can’t measure a risk, you can’t manage it. While this mind-set is largely true, many managers often use it as an excuse to do nothing at all with respect to understanding and addressing a difficult-to-measure risk, particularly strategic uncertainties.
62	Lack of information for decision-making leaves management with little insight as to what is really happening or is likely to happen.
63	Not integrating risk management with strategy formulation and performance management.
64	Ignoring the dysfunctionalities and “blind spots” of the organisation’s culture: an organisation’s culture can have a huge impact on its ability to prevent the occurrence of unacceptable risk events and identify new and emerging risks in a changing business environment.
65	Not involving the board of directors in a timely manner.
66	Inappropriate risk treatment options.
67	Not considering all the factors that have an impact on the level of risk.
68	Lack of risk training.

Barriers to ERM Implementation	
69	The organisation does not have a formalised early warning system to assist with risk identification.
70	Disconnect between ERM, strategy formulation and HR management.
71	Risk-reward incentive guidelines are unclear.
72	Competing priorities between the risk stakeholders' operational and risk management responsibilities in respect of time, attention and budget.
73	Lack of resources for proper risk management.
74	Weak risk culture.
75	Low level of risk awareness.
76	Key risk indicators are not defined.
77	Not linking risk information to strategic decision-making.
78	Not embedding a risk-aware culture at all levels.
79	Not embedding risk management practices and responsibilities within strategy and operations.
80	Not ensuring that all decisions remain within the organisation's risk tolerance.
81	Not driving risk mitigation activities.
82	Not proactively identifying current and emerging risks.
83	Risk management activities being managed by those who operate independently of those who drive the business, for instance, an independent risk function isolated from the business and decision makers.
84	Risk processes that are too focused on looking backwards and using lagging indicators, as opposed to looking forward to emerging risks and using leading indicators.
85	Incentive systems that reward managers for short-term profit generation rather than realising longer term strategic goals through the identification and management of emerging risks.
86	People are unaware of what they need to do concerning risk.
87	Cost and budgetary constraints.
88	Incentives do not reward making risk-based decisions.
89	Inadequate information to make risk-based decisions.
90	Lack of clarity of risk roles in the organisation.
91	Misalignment of the risk and business operating models.
92	Organisation is too complex to manage risk.

Barriers to ERM Implementation	
93	Risk management not seen as a priority by top management.
94	Lack of vision/inability to focus on most critical risks.
95	Weakness in risk culture.
96	Reporting mechanisms, templates and systems are not standardised nor clearly communicated.
97	Inappropriate risk assessment tools and techniques.
98	Ignoring internal politics and sensitivities when communicating with risk stakeholders.
99	Previous unsuccessful attempts at ERM create resistance.
100	The belief that risk is intuitively managed and a formalised ERM program is unnecessary.
101	The ERM system itself can be inappropriate.
102	Human errors: not everyone is "on the same page", disagree on a common risk language, effective monitoring is not important, a risk aware culture does not exist and proper communication is not defined.
103	Complexity of the business and organisational environment.
104	Inappropriate risk assessment tools and techniques.
105	Inappropriate risk metrics e.g. identification of KRI, scoring model.
106	Difficult to identify executive sponsors for ERM.
107	Lack of a common risk language or glossary.
108	Unclear risk appetite (such as risks it will and will not take).
109	Not identifying and describing the risks in a "risk inventory".
110	Not implementing a risk-ranking methodology to prioritize risks within and across functions.
111	Not establishing a risk committee and or Chief Risk Officer (CRO) to coordinate certain activities of the risk functions.
112	Difficulty in establishing ownership for particular risks and responses.
113	Difficulty demonstrating the cost-benefit of the risk management effort.
114	Not developing action plans to ensure the risks are appropriately managed.
115	Not developing consolidated reporting for various stakeholders.
116	Not monitoring the results of actions taken to mitigate risk.
117	Not ensuring efficient risk coverage by internal auditors, consulting teams, and other evaluating entities.
118	Not developing a technical ERM framework that enables secure participation by 3rd parties and remote employees.
119	Bottom-up focus that drives the capture and documentation of a huge volume of risks that are poorly defined and not well understood.

Barriers to ERM Implementation	
120	A culture that becomes fixated on the process of capturing and recording risks rather than the actual management of key risks.
121	Allocating responsibility to a risk manager with limited authority within the business.
122	Inability to engage effectively with the board and to provide them with succinct and tailored risk reporting.
123	An inability to break out of a silo mentality, such that risk management processes are inconsistent across the business and are not aligned.
124	Lack of board or senior executive ERM leadership.
125	Risk appetite is not articulated.
126	Lack of formalised incentive guidelines.
127	Organisations are constrained in their ability to effectively aggregate and monitor exposures across counterparties, businesses, risk strands, and other dimensions because of ineffective information technology and supporting infrastructure.
128	Difficulties with risk aggregation and concentration identification.
129	Lack of support from the top: to successfully manage risk an ERM initiative must be enterprise-wide and viewed as an important and strategic effort.
130	Badly designed ERM program: one perceived barrier to launching ERM is the perception that ERM is overly complex and requires a major and costly effort to implement.
131	Lack of focus: for an organisation just starting out with ERM, it might make sense to first identify a small number of critical risks that can be managed and then evolve from this starting point.
132	Insufficient resources: another possible barrier to initiating an ERM process may be the view that significant resources including investments or outside expertise are needed to undertake an ERM project.
133	Ignoring existing risk management activities: any organisation with current operations has some form of risk management activities or risk-related activities already in place.
134	Little or no risk integration — embed ERM into the business fabric of the organisation: as articulated in COSO's ERM definition, enterprise risk management is a process that is applied across the organisation. It is a management process, ultimately owned by the chief executive officer, and involves people at every level of the organisation.
135	Lack of risk training: provide ongoing ERM updates and continuing education for directors and senior management. ERM practices, processes and information continue to evolve.
136	ERM is viewed as a set of separate, largely independent departmental undertakings and it is not integrated into key business processes.

Source: Nocco & Stultz (2006), Fraser & Simkins (2007), Hamill (2007), SSG (2009), Burnaby & Hass (2009), Beasley *et al* (2009), Martin & Power (2007), Schanfield & Helming (2008), Lam (2010), Bates (2010), Harner (2010), Beaumier & DeLoach (2011), Merchant (2012), Prodyot *et al* (2013), Boulwood & Dominus (2014), Hellings (2014), Dornberger *et al* (2014), and Frigo & Richard (2011).

Table 2.4: The barriers to ERM implementation categorised according to theme

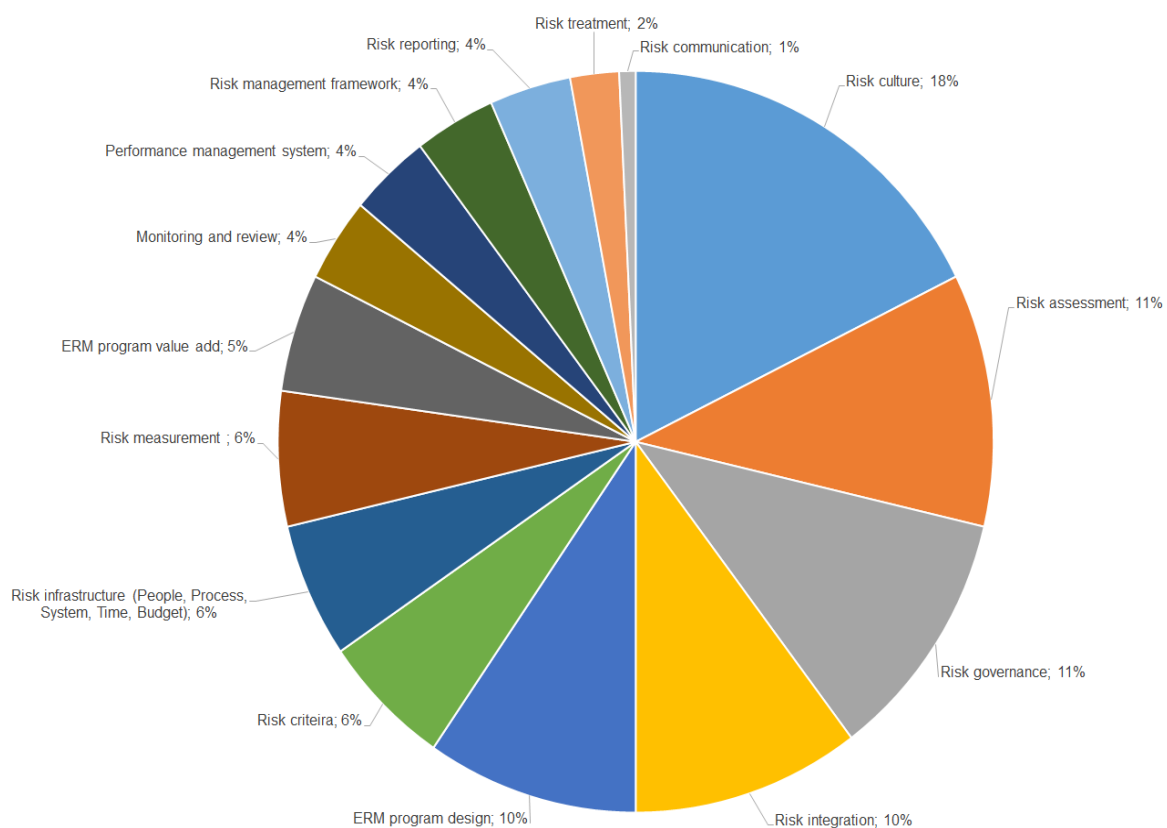
Barrier category	Total	% of Total	References
Risk culture	24	18%	Hamill (2006) Schanfield & Helming (2008) Burnaby & Hass (2009) Beasley <i>et al</i> (2009) Lam (2010) Bates (2010) Harner (2010) Beaumier & DeLoach (2011) Frigo & Richard (2011) Merchant (2012) Prodyot <i>et al</i> (2013) Boulwood & Dominus (2014) Hellings (2014)
Risk assessment	15	11%	Nocco & Stulz (2006) Hamill (2006) Martin & Power (2007) Fraser & Simkins (2007) Hamill (2007) Schanfield & Helming (2008) Burnaby & Hass (2009) Frigo & Anderson (2011) Beaumier & DeLoach (2011) Merchant (2012) Hellings (2014) Dornberger <i>et al</i> (2014)
Risk governance	15	11%	Nocco & Stulz (2006) Hamill (2006) Fraser & Simkins (2007) Hamill (2007) Senior Supervisors Group (2009) Beasley, Branson & Hancock (2009) Lam (2010) Beaumier & DeLoach (2011) Boulwood & Dominus (2014) Hellings (2014)
Risk integration	14	10%	Fraser & Simkins (2007) Hamill (2007) Schanfield & Helming (2008) Beasley <i>et al</i> (2009) Lam (2010) Bates (2010) Beaumier & DeLoach (2011) Frigo & Richard (2011) Prodyot <i>et al</i> (2013) Hellings (2014)

Barrier category	Total	% of Total	References
ERM program design	13	10%	Hamill (2006) Beaumier & DeLoach (2011) Frigo & Anderson (2011) Boultonwood & Dominus (2014) Hellings (2014) Kerstin <i>et al</i> (2014)
Risk criteria	8	6%	Fraser & Simkins (2007) Schanfield & Helming (2008) Burnaby & Hass (2009) Hellings (2014) Dornberger <i>et al</i> (2014)
Risk infrastructure (People, Process, System, Time, Budget)	8	6%	Fraser & Simkins (2007) Schanfield & Helming (2008) Beasley <i>et al</i> (2009) Senior Supervisors Group (2009) Frigo & Richard (2011) Prodyot <i>et al</i> (2013) Hellings (2014) Dornberger <i>et al</i> (2014)
Risk measurement	8	6%	Nocco & Stulz (2006) Senior Supervisors Group (2009) Burnaby & Hass (2009) Lam (2010) Beaumier & DeLoach (2011) Merchant (2012) Dornberger <i>et al</i> (2014)
ERM program value added	7	5%	Hamill (2006) Hamill (2007) Fraser & Simkins (2007) Schanfield & Helming (2008) Harner (2010) Hellings (2014)
Monitoring and review	5	4%	Hamill (2006) Burnaby & Hass (2009) Schanfield & Helming (2008) Bates (2010) Hellings (2014)
Performance management system	5	4%	Senior Supervisors Group (2009) Lam (2010) Prodyot <i>et al</i> (2013) Hellings (2014)
Risk management framework	5	4%	Hamill (2006) Fraser & Simkins (2007) Senior Supervisors Group (2009) Lam (2010) Bates (2010)

Barrier category	Total	% of Total	References
Risk reporting	5	4%	Hamill (2006) Burnaby & Hass (2009) Bates (2010) Hellings (2014)
Risk treatment	3	2%	Hamill (2006) Schanfield & Helming (2008) Hellings (2014)
Risk communication	1	1%	Hamill (2007)
Total	136	100%	

Source: Researcher's own compilation.

Figure 2.1: Thematic representation of the barriers to ERM implementation



Source: Researcher's own compilation.

Table 2.5: The top 10 barriers to ERM implementation and the affected deliverables

Barriers	Affected Deliverables
Lack of board, C-level, or senior executive leadership.	Risk awareness program
Difficult to identify risk owners for particular risks and responses.	Risk governance framework
Role confusion: lack of clarity with regard to risk roles and responsibilities in the organisation.	Risk governance framework
Insufficient resources (i.e. people, technology, budget) to manage risks.	Risk management plan
Lack of perceived value added by the enterprise risk management program.	Risk management framework
Badly designed ERM program, e.g.: - Misalignment between the ERM program design and the design of the organisation. - A common view from management is that risk is intuitively managed and therefore there is no need to deploy a formal approach. - Ignoring existing risk management activities. - Inadequate information to make risk-based decisions.	Risk management framework Risk management process
Incentives do not reward making risk-based decisions.	Risk management framework
Risk management criteria is not standardised throughout the organisation.	Common risk language
Competing priorities between the risk owners' operational (day-to-day) and risk responsibilities.	Risk integration
Little or no monitoring regarding risk management plan execution.	Monitoring

Source: Researcher's own compilation.

These barriers partially exist due to the lack of literature on how to implement and assess ERM (Liebenberg & Hoyt, 2003; Beasley *et al.*, 2005; Nocco & Stultz, 2006; Blaskovich & Taylor, 2011; Gates *et al.*, 2012; Mikes & Kaplan, 2013; Bromiley *et al.*, 2014; Viscelli *et al.*, 2014).

In order for organisations to realise the proposed value added from the successful deployment of ERM implementation and assessment within any organisation within any industry, there are certain homogenous requirements which have to be met:

- Composing a clear, concise and understandable definition should be the starting block for developing an ERM implementation program and assessment tool prior to embedding such a program within any organisation in any industry to ensure that all aspects associated with ERM development, implementation and assessment do not become disjointed and without purpose;
- Clarifying organisation-specific adoption drivers that influence the degree of formality with which the ERM implementation program and assessment tool needs to be adopted within any organisation (such as the size of the organisation, the type of industry, changes in the regulatory environment, internal organisational factors, ownership structure, the training of the risk managers, the appointment of a chief risk officer (CRO), and a broader scope of risks and operational benefits);
- A carefully designed ERM implementation model should then be planned, based on the design of the organisation, identifying risks and exploiting opportunities based on adequate information to make risk-based decisions;
- With incentives in place to reward the stakeholders making risk-based decisions weighing up competing priorities between the risk owner's operational and risk responsibilities;
- Monitoring and assessing the ERM implementation program through an appropriately designed assessment tool;
- Top management support, including the appointment of specific risk owners with a clearly defined outline of their roles and responsibilities within the organisation;
- The potential for value add to the organisation by implementing an ERM program should be clearly outlined and understood; and
- Sufficient resources (such as people, technology and budget) should be allocated to the risk initiative.

2.6 SUMMARY

Chapter 2 described the ERM domain in terms of the scope and definition of ERM, ERM adoption drivers, perceived value proposition of ERM implementation, as well as carefully identifying and documenting the barriers to ERM implementation which need to be overcome in order to enable the successful deployment of an ERM implementation model and assessment tool within any organisation.

For the purpose of this study, it is important to reiterate that management scholars should be poised to refocus ERM from a strategic management approach to a framework of tools, methods and processes. This is supported by the results of the strategic literature review, as well as the researcher's own risk management experience of 24 years.

The primary aim of this study remains to develop an ERM implementation model that can be used as a framework by all risk stakeholders for ERM implementation and to create an assessment tool to determine the level of implementation and the degree of formality with which such an ERM implementation program is utilised within their respective organisations.

Chapter 3 will explore different organisational design models, together with the underlying principles of continual improvement as a deliberate effort to develop a prescriptive conceptual ERM implementation model and assessment tool.

CHAPTER 3: ORGANISATIONAL DESIGN MODELS AND CONTINUAL IMPROVEMENT

3.1 INTRODUCTION

This study centres on the design of an ERM implementation solution (model and assessment tool) that will address the following areas of concern as identified by various researchers:

- The misalignment between the principles of organisational design and ERM program design (Martin & Power, 2007; Arena *et al.*, 2010; Bromiley *et al.*, 2014).
- The availability of limited literature on how to implement ERM (Liebenberg & Hoyt, 2003; Beasley, Clune, *et al.*, 2005; Nocco & Stulz, 2006; Blaskovich & Taylor, 2011; Fox, 2012; Gates *et al.*, 2012; Bromiley *et al.*, 2014; Kerstin *et al.*, 2014; Viscelli *et al.*, 2014).
- The ambiguity surrounding the concept practice-based ERM (Arena *et al.*, 2010; Arena *et al.*, 2011; Mikes & Kaplan, 2013).

The purpose of the study remains to develop an ERM implementation model and assessment tool that can be used by all risk stakeholders as a guideline for ERM program implementation and to assess the level of ERM implementation within South African organisations. For that reason, Chapter 3 contains the results of the systematic literature review (SLR) (refer to Section 4.6.1), consisting of three key parts:

1. An overview of organisational theory (Pfeffer, 1997), structure (Galbraith, 1987; Greenberg, 2011) and design (Stanford, 2007);
2. The evaluation of 14 **organisational design models** to identify the best suited model with which to align the conceptual ERM implementation model (Leavitt, 1965; Galbraith, 1970; Weisbord, 1976; Nadler & Tushman, 1980; Waterman & Peters, 1982; Tichy, 1983; Kilmann, 1984; Freedman, 1987; Harrison, 1987; Burke & Litwin, 1992; Nadler & Tushman, 1999; Wilber, 2003; McMillan, 2004; Ulieru & Unland, 2004); and
3. A discussion of the principles of **continual improvement**, as described within the Deming cycle (Deming, 1982).

3.2 UNDERSTANDING ORGANISATIONAL THEORY, STRUCTURE AND DESIGN

It was established in Chapter 2 that organisations are advised to use ERM as a framework for a strategic, proactive and holistic approach to risk management in order to successfully integrate strategy, processes, operations, resources, systems and to empower employees to render their core business, mitigate uncertainty, build resilience, and be better poised for

opportunities (Carroll *et al.*, 2014). To achieve these objectives, it stands to reason that the design of such an ERM implementation model needs to be aligned with the underlying principles associated with organisational design. It is consequently important to pause and reflect on the following terms before continuing with the ERM implementation model conceptualisation: *organisation*, *organisational theory*, *organisational structure*, and *organisational design*.

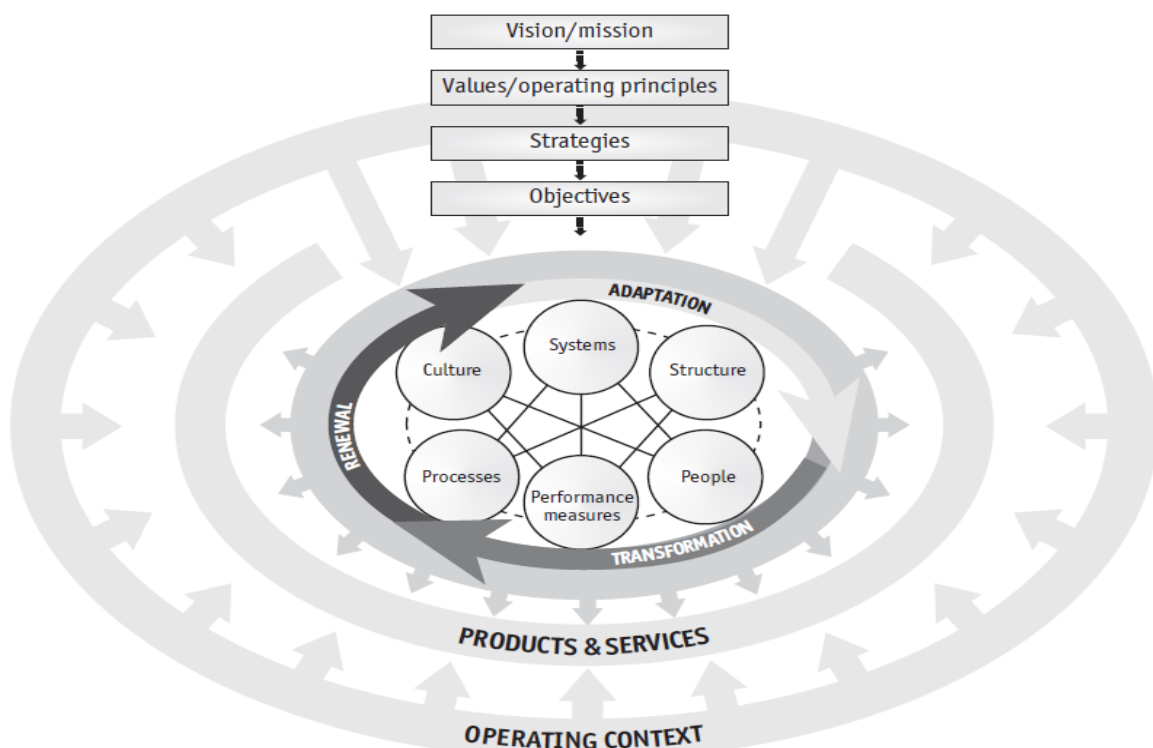
This section of the study will provide universally accepted definitions for the aforementioned terms.

- According to Robbins and Barnwell (2006), an **organisation** is a social entity that has a distinguishable boundary. An organisation's different components are intentionally managed and coordinated. It functions on a relatively continuous basis to achieve a common goal or set of goals. This implies that there is a formalised decision-making structure; there are individuals and groups of people that interact; there is a boundary that differentiates the internal environment and the external environment of the organisation; and there is a reason for the organisation's existence with a common goal to be achieved.
- **Organisational theory** manifests the study of organisations in order to identify the patterns and structures used to solve problems, maximise efficiency and productivity, and meet the expectations of stakeholders. Scholars of organisational theory use these patterns to formulate normative theories reflecting how organisations function best. Pfeffer (1997) supports this by stating that "organisational theory studies provide an interdisciplinary focus on (a) the effect of social organisations on the behaviour and attitudes of individuals within them, (b) the effects of individual characteristics and action on organisation, (c) the performance, success, and survival of organisations, (d) the mutual effects of environments, including resource and task, political, and cultural environments on organisations and vice versa, and (e) concerns with both the epistemology and methodology that undergird research on each of these topics". Essentially, organisational theory is the foundational discourse pertaining to the structure and design of organisations.
- The term **organisational structure** refers to the formal configuration between individuals and groups regarding the allocation of tasks, responsibilities, and authority within the organisation (Galbraith, 1987; Greenberg, 2011). The aforementioned determines the division and coordination of roles, power and responsibilities, together with the flow of relevant information between the different levels of management. The organisational structure will be determined by the organisational strategy and the associated strategic

objectives. The six primary dimensions of organisational structure are: (1) *specialisation*: concerned with the division of labour within the organisation, the distribution of official duties among a number of positions; (2) *standardisation*: the formulation, publication, and implementation of guidelines, rules, and specifications for common and repeated use, aimed at achieving an optimum degree of order or uniformity in a given context, discipline, or field; (3) *formalisation*: the extent to which rules, procedures, instructions, and communications are written; (4) *centralisation*: the locus of authority to make decisions affecting the organisation, (5) *configuration*: the shape of the role structure, which is vertical, horizontal and lateral span of control; and (6) *flexibility*: the ability of a system, such as a manufacturing process, to effectively vary the system's output within a certain range and given timeframe (Pugh *et al.*, 1968).

- **Organisational design** refers to the arrangement and alignment of components that will allow the organisation to achieve its strategy and associated strategic objectives. (Stanford, 2007). The most commonly used organisational components are captured in Figure 3.1 as the vision/mission, values/operating principles, strategies, objectives, culture, systems, structure, people, performance measures, processes, products, services, and the operating context.

Figure 3.1: Organisational design components



Source: Stanford (2007).

Stanford (2007) confirms that organisational leaders that believe in the importance of organisational design subscribes to various principles. These leaders believe that organisational design:

- Is driven by the operating context and the business strategy;
- Is a fundamentally proactive, and not a reactive, process;
- Means approaching all aspects of the organisation from the manner in which the whole organisation operates in its external environment, to the organisation's internal systems, structures, people, performance measures, processes and culture;
- Is not to be undertaken lightly as it is resource intensive even when it is done properly; and
- Is based on the future of the organisation, rather than focussing on the status quo.

Understanding organisational design therefore confirms the importance of using organisational design as a foundation for any conceptual ERM implementation model. Both organisational design and ERM are strategic, proactive and holistic approaches requiring the deployment of a vast number of resources to ensure the future success of the operations within the organisation and its positioning in its external environment.

In order to initiate the architecture of the conceptual ERM implementation model, 14 organisational design models were evaluated to find the model best suited to underpin a conceptual ERM implementation model. This was done in order to identify the most appropriate building blocks to serve as cornerstones on which the ERM implementation model will be built. The next section thus includes a discussion of the organisational design models that were evaluated, together with a detailed evaluation of the shortlisted models.

3.3 OVERVIEW OF ORGANISATIONAL DESIGN MODELS

Organisational design proposes that all the components of the organisation should be aligned towards the achievement of an agreed/common goal. As previously stated, despite the similarities between organisational design and ERM implementation approaches, several stakeholders have identified the misalignment between the principles of organisational design and previous attempts to design a useful conceptual ERM program (Arena *et al.*, 2010; Bromiley *et al.*, 2014).

The proposed conceptual ERM implementation model presented in this study is based directly on the organisational design principles as discussed in Section 3.2. These principles have been used to create various organisational design models widely used in an academic context. This section addresses 14 of these organisational design models in order to identify the model

best suited to ascertain the specific building blocks on which the conceptual ERM implementation model will be built.

Table 3.1 lists these organisational models according to name of the organisational design model, the name of the developer, the year in which it was first published, and the underlying theoretical framework if it is known, starting with Leavitt's diamond model from 1965 and ending with Ulieru and Unland's "Holonc Enterprise model" developed in 2004. It is interesting that: (1) most of the models recommend interaction or interrelationships among all the components; (2) similar components are included in most of the organisational design models, albeit not necessarily in the same way or with the same emphasis, and (3) that the fewest number of model components are contained in Leavitt's "Diamond model" (four components) and the greatest number of components are in the "Burke-Litwin model" (twelve components).

Table 3.1: List of organisational design models

Organisational design model	Developer	Date	Theoretical framework
Leavitt's diamond model	Harold Leavitt	1965	Systems theory
Galbraith's star model	Jay Galbraith	1970	Systems theory
Weisbord's six-box model	Marvin Weisbord	1976	Systems theory
Nadler & Tushman's congruence model	David Nadler Michael Tushman	1980	Systems theory
McKinsey's 7-s model	Robert Waterman Jr. Tom Peters	1981	Systems theory
Technical political cultural (TPC) model	Noel M. Tichy	1983	Systems theory
Five track model	Ralph Kilmann	1984	Complexity theory
Socio-technical systems - swamp model	Arthur Freedman	1987	Systems theory
Individual and group behaviour model	Michael Harrison	1987	Systems theory
Burke-Litwin model	Warner Burke George Litwin	1992	Systems theory
Updated congruence model	David Nadler Michael Tushman	1999	Complexity theory

Organisational design model	Developer	Date	Theoretical framework
Aqal model	Ken Wilber	2003	Complexity theory
Fractal Web model	Elizabeth McMillan	2004	Complexity theory
Holonic Enterprise model	Mihaela Ulieru Rainer Unland	2004	Complexity theory

Source: Adapted from Stanford (2007) and Janićijević (2010).

As seen from Table 3.1, organisational design models are either based on *complexity theory* or *systems theory* (Stanford, 2007). **Complexity theory** is the study of nonlinear dynamic systems. With regard to organisations, Daft (1992) equates complexity with the number of activities or subsystems within the organisation, noting that it can be measured along three dimensions: (1) *Vertical complexity* is the number of levels in the organisational hierarchy; (2) *horizontal complexity* is the number of job titles or departments across the organisation, and (3) *spatial complexity* is the number of geographical locations. With respect to environments, complexity is equated with the number of different items or elements that must be dealt with simultaneously by the organisation (Scott & Warren, 1994). Organisational design models based on this theory essentially try to match the complexity of the organisation's structure with the complexity of its environment and technology (Galbraith, 1982).

Systems theory is the interdisciplinary study of systems in general with the goal of noticing patterns and clarifying principles that can be distinguished from, and applied to, all types of systems at all levels in all fields of research (Von Bertalanffy, 1950; Boulding, 1956). According to Nadler and Tushman (1980), organisations are seen as systems as (1) changes in one component of the organisation frequently have consequences for other components (**interdependence**); (2) the system can be controlled and/or influenced by the output of the organisation (**capacity for feedback**), (3) the system has the ability to self-correct when an event causes an imbalance within the organisation by changing itself to restore balance (**equilibrium**); (4) different organisational arrangements can lead to the same end or to the same type of input–output conversion (**equi-finality**); and (5) the organisational system must maintain a beneficial balance of input–output dealings with the environment or it will not survive (**adaptation**). Organisational design models founded in systems theory all have this central theme: they offer interdependent, self-regulating systems aimed at self-correction to maintain equilibrium through feedback, adapting in order to maintain a positive input–output conversion.

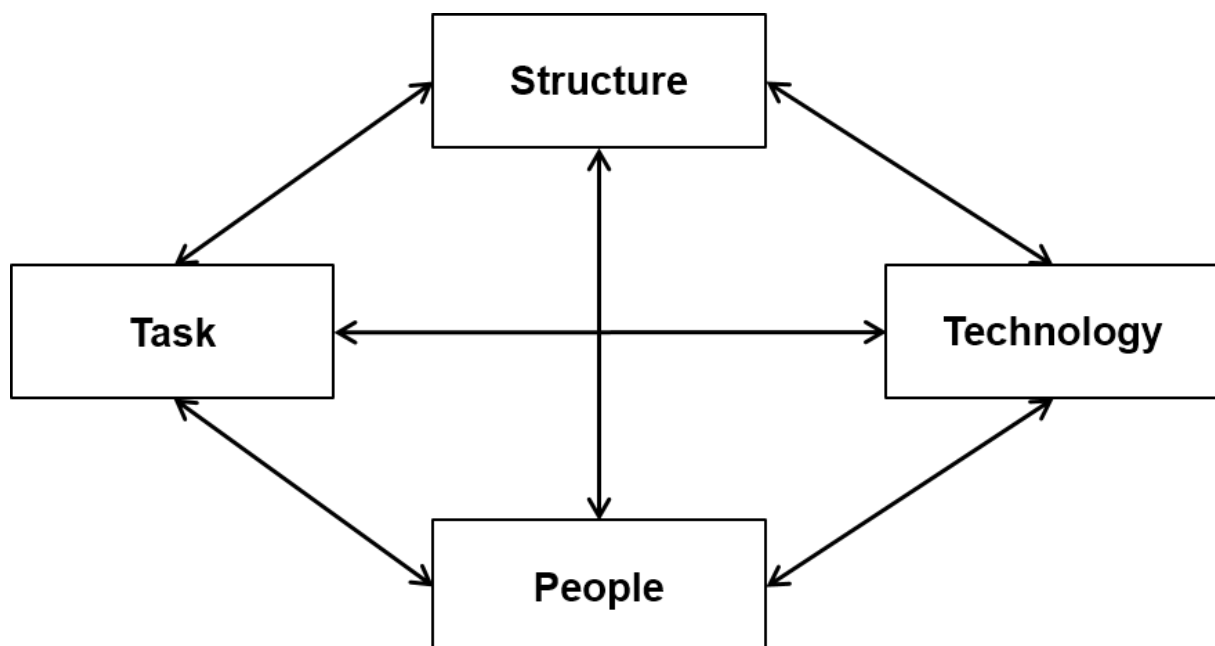
It was established in Chapter 2, that ERM implementation is an initiative spanning the organisation and utilising vast resources to ensure that the organisation renders its core business, mitigates uncertainty, builds resilience, and is better poised for opportunities.

It stands to reason that it would be beneficial to develop a simple ERM implementation model, restricting the level of complexity in order to be understood and implemented by all employees within the organisation. The organisational design models founded in systems theory are therefore best suited for a conceptual ERM implementation model. These are discussed in the sections to follow.

3.1.1 Leavitt's diamond model

In 1965, Harold Leavitt's diamond shaped organisational design model (as depicted in Figure 3.2) contributed to the school of thought that viewed organisations as interdependent systems. The four major systems/components in organisations are: *task*, *people*, *technology*, and *structure*. **Task** is the reason for the organisations existence (to provide a product and/or service). **People** are the employees who execute the task. **Technology** is the application of scientific knowledge for practical purposes. This can be through machinery, equipment or computers. **Structure** is the flow of work, information, communication and decisions. (Leavitt, 1965). According to Leavitt's model the four major components all interacted to cause change and they were interdependent to one another.

Figure 3.2: Leavitt's diamond model



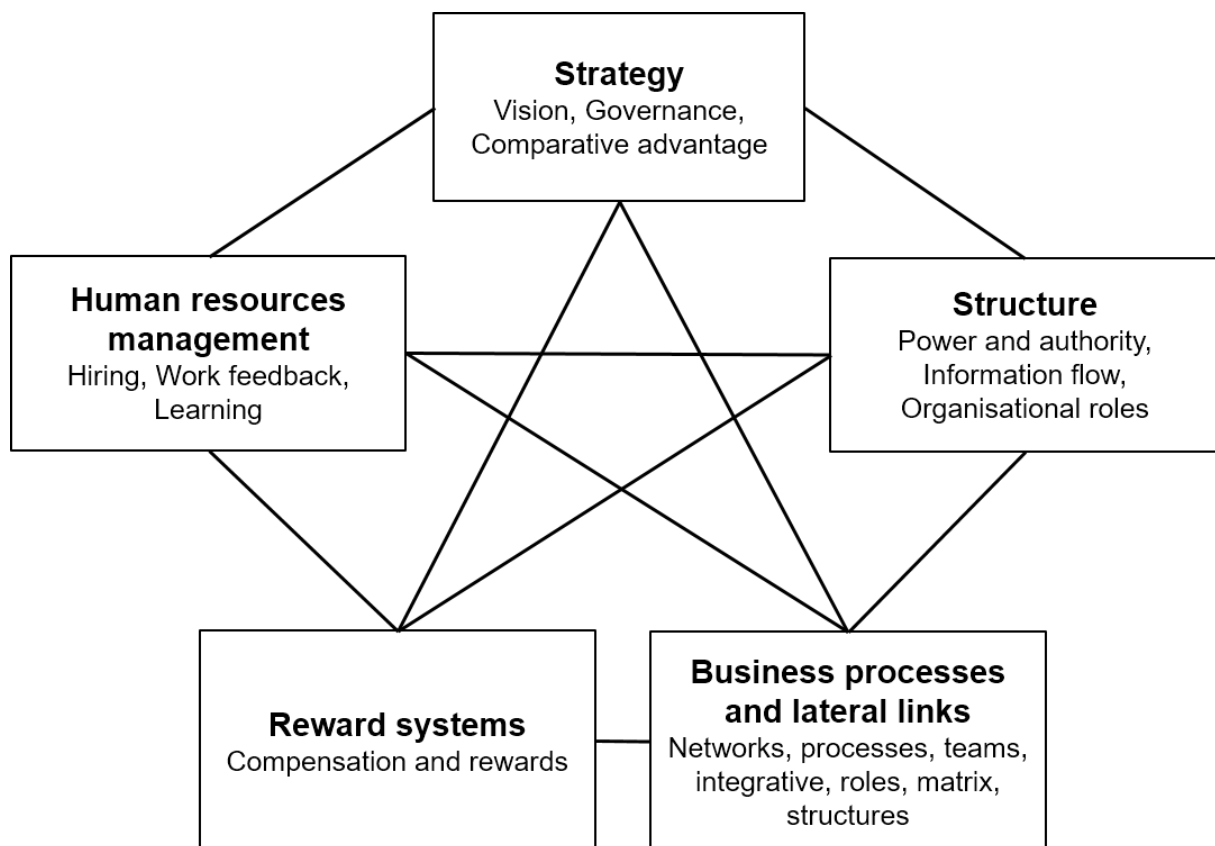
Source: Leavitt (1965).

3.1.2 Galbraith's star model

According to Galbraith (1970) there are five components that form the foundation for organisational design (as represented in Figure 3.3). These components are tools that can be used by management to shape the decisions and behaviour within the organisation to ensure organisational effectiveness.

The five organisational design components are: (1) **strategy**, which determines the direction of the organisation by formalising the vision, governance structure and comparative advantage description; (2) **structure**, which determines power and authority frameworks, information flow principles and defined organisational roles; (3) **business processes and lateral links**, which have to do with the flow of information; (4) **rewards and reward systems**, which influence the motivation of people to perform and address organisational goals and it manifests as the performance management system; and (5) **human resource management**, which includes the recruitment, evaluation, training and promotion of employees; which in turn influences and defines the employees' mind-sets and skills (Galbraith, 1970).

Figure 3.3: Galbraith's star model

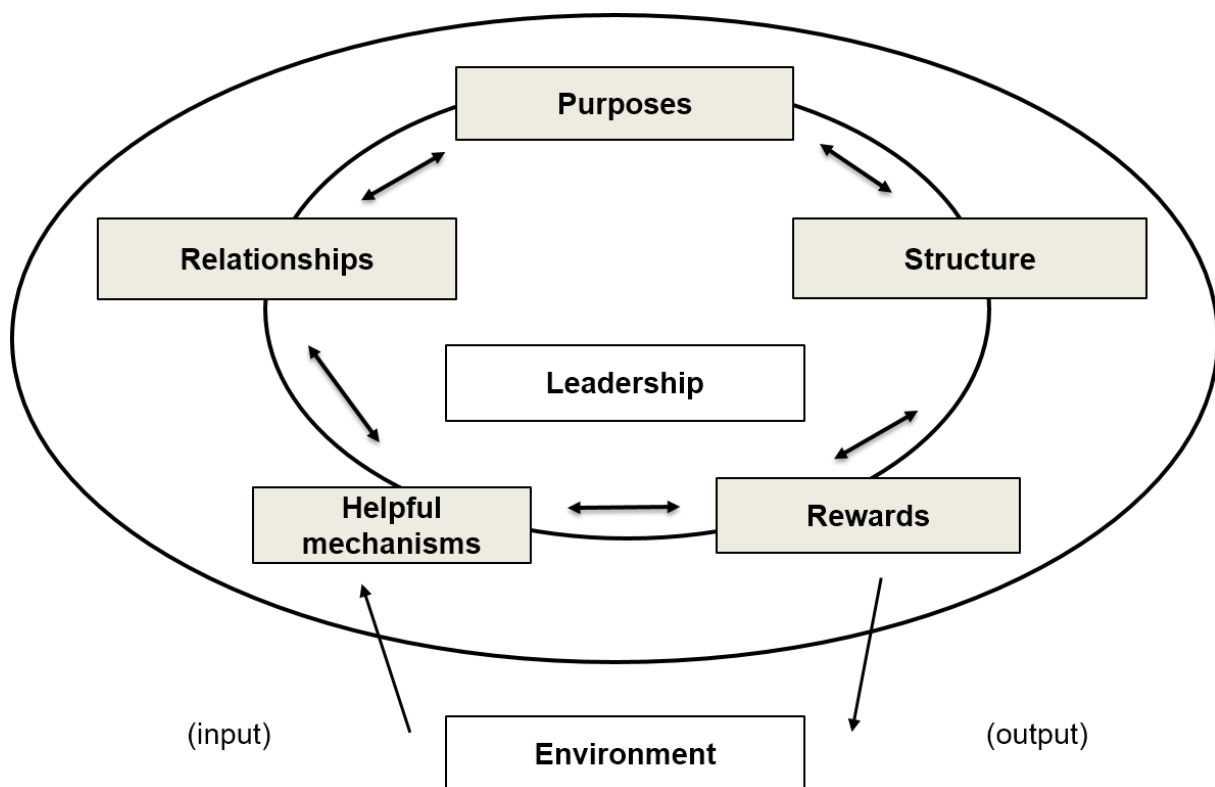


Source: Galbraith (1970).

3.1.3 Weisbord's six-box model

Marvin Weisbord developed the six-box model in 1976 as a framework to assess the effectiveness of the organisation's structure and design. This model (as illustrated in Figure 3.4) is grounded in the field of organisational development and systems theory. The six boxes are: (1) **purposes**: it is embodied by goal clarity, the extent to which organisation members are clear about the organisation's mission and purpose, and goal agreements, people's support of the organisation's purpose; (2) **structure**: it must create a platform whereby the purpose of the organisation can be fulfilled; (3) **relationships**: this box represents the types of relationships that are most important: individual relationships, inter-group and inter-departmental relationships, and between the people and the nature and requirements of their jobs; (4) **rewards**: assess the similarities and differences between the organisation's formal rewards and the employees perception with regards to rewards or punishments; (5) **leadership**: focuses on the quality of leadership and the extent to which it is embedded in defining the purposes, integrating purposes in programs, ensuring that the organisations reputation is managed, and dealing effectively with internal conflict (Selznick,1957); and (6) **helpful mechanisms**: processes associated with planning, control, budgeting, and other information systems (Weisbord, 1976).

Figure 3.4: Weisbord's six-box model



Source: Weisbord (1976).

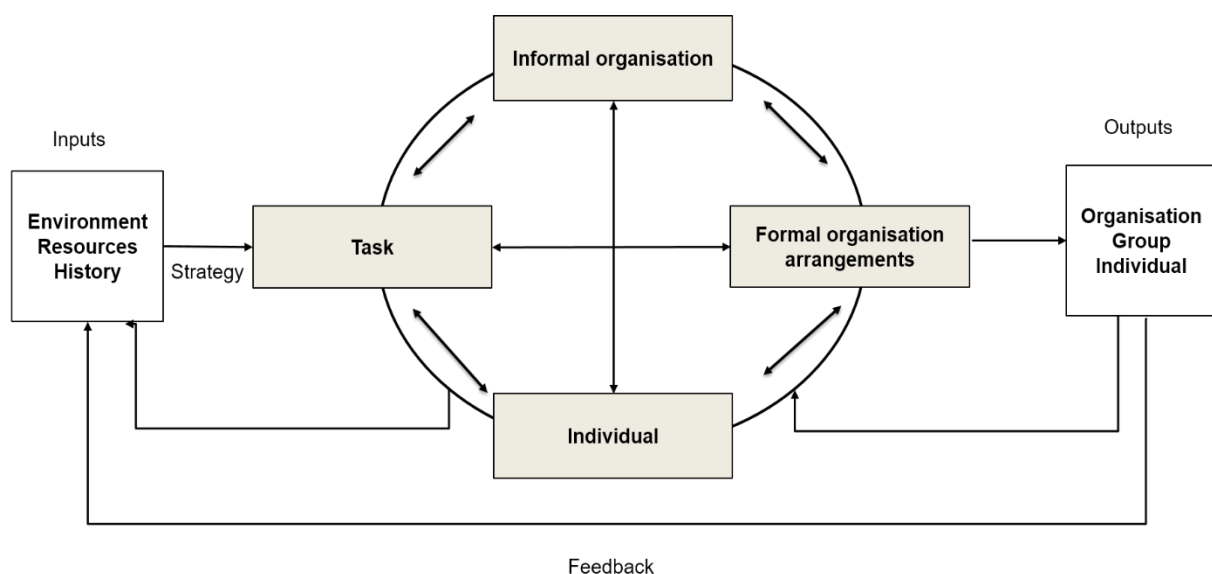
3.1.4 Nadler & Tushman's congruence model

Nadler and Tushman (1980) propose in their congruence model (as depicted in Figure 3.5) that in order to fully understand the organisation's performance, one must first understand the organisation as a system consisting of some basic elements:

- **Input phase:** (1) *Environment*: every organisation has an internal and external environment. (2) *Resources*: the second source of input is the organisation's employees, technology, capital, and information history. (3) *Strategy*: target market, organisation's value proposition, strategic objectives and scope of impact.
- **Transformation phase:** (1) *Informal organisation*: the aggregate of, customs, personal and professional connections through which work gets done and relationships are built among people who share a common organisational goal. (2) *Formal organisation*: the formal structures, processes, and systems that enable individuals to perform tasks. (3) *Work*: the physical or mental activity required to achieve the purpose of the organisation. (4) *People*: the individuals/teams needed to do the work.
- **Output phase:** (1) *Total system*: the output measured in terms of goods and services produced, revenues, profits, shareholder return, job creation, community impact, policy or service outcomes, and so forth. (2) *Units within the system*: relates to the various divisions, departments, and teams that make up the organisation. (3) *Individuals*: the behaviour, tasks, and performance of the people within the organisation.

The real challenge is found within the dynamics of the interactions of these components as it results in some level of organisational performance.

Figure 3.5: Nadler & Tushman's congruence model



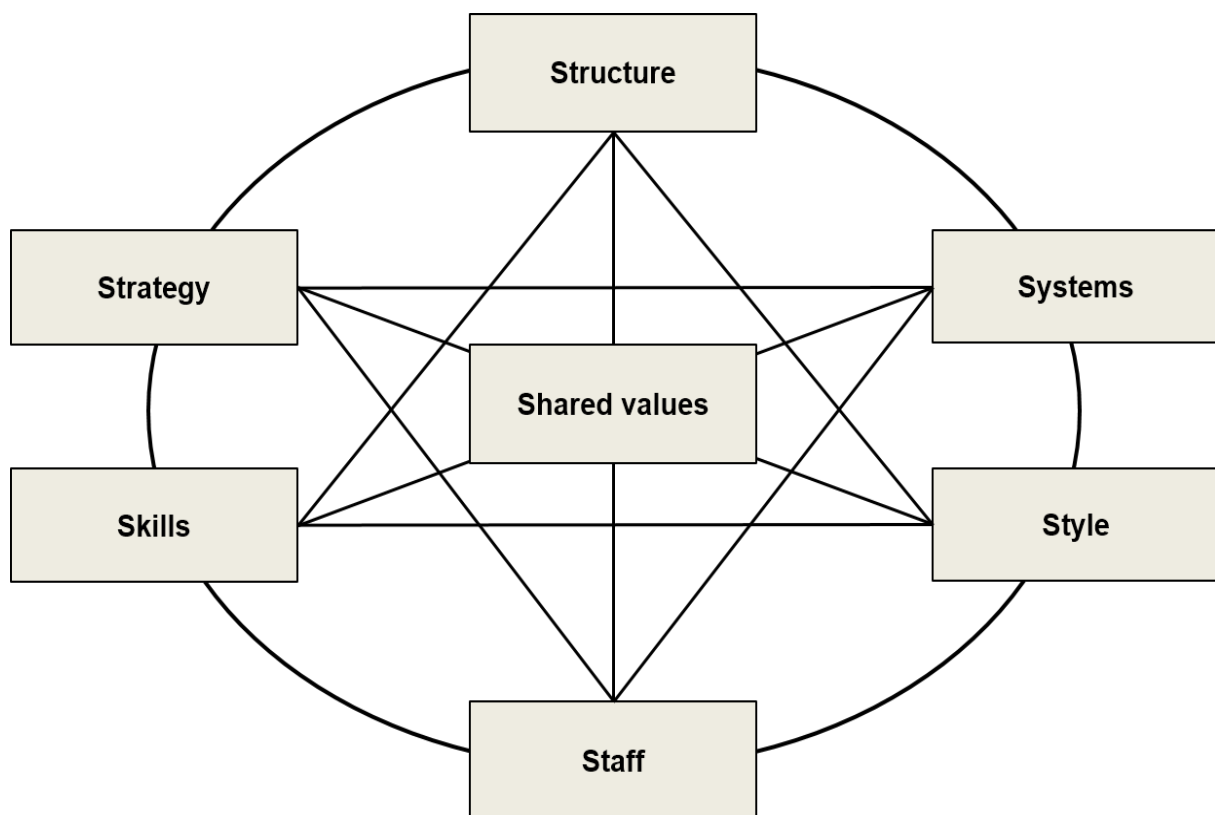
Source: Nadler & Tushman (1980)

3.1.5 McKinsey's 7-s model

The main objective of McKinsey's 7-s model is to balance staff and structures with the objectives of the organisation. Tichy's model (1983) and that of Nadler and Tushman (1980) also have the same objective. The 7-s model was developed in the early 1980s by Robert Waterman and Tom Peters. The conceptual basis of the model is that there are seven internal elements of the organisation that need to be aligned for it to be successful (Waterman & Peters, 1982).

These internal elements are split into *hard* and *soft elements*. **Hard elements** are tangible and it can thus be effortlessly defined and identified. Management can directly influence these elements. Examples of hard elements include, but are not limited to, strategy statements, organisation charts and reporting lines, as well as formal processes and IT systems. **Soft elements**, on the other hand, are less tangible and more influenced by culture. The hard and soft elements must be aligned in order for the organisation to be successful. The way the model is presented in Figure 3.6, illustrates the connection and correlation between the elements and indicates how a change in one affects all the others.

Figure 3.6: McKinsey 7-s model



Source: Waterman & Peters (1982).

The 7 elements are explained as follows (Waterman & Peters, 1982):

- **Hard elements:**
 - *Strategy*: the action plan devised to bring about the desired future for the organisation and to establish competitive advantage.
 - *Structure*: refers to the way in which the components of the organisation is organised, the reporting lines and the communication channels.
 - *Systems*: the processes and procedures to enable task execution.
- **Soft elements:**
 - *Shared values*: represent the core values of the organisation and this is reflected in the organisational culture and the work ethic of the staff.
 - *Style*: refers to the tone at the top and the example set by leaders within the organisation.
 - *Staff*: the staff and their required proficiencies.
 - *Skills*: the actual knowledge, skills and competencies of the staff.

3.1.6 Tichy's technical political cultural framework

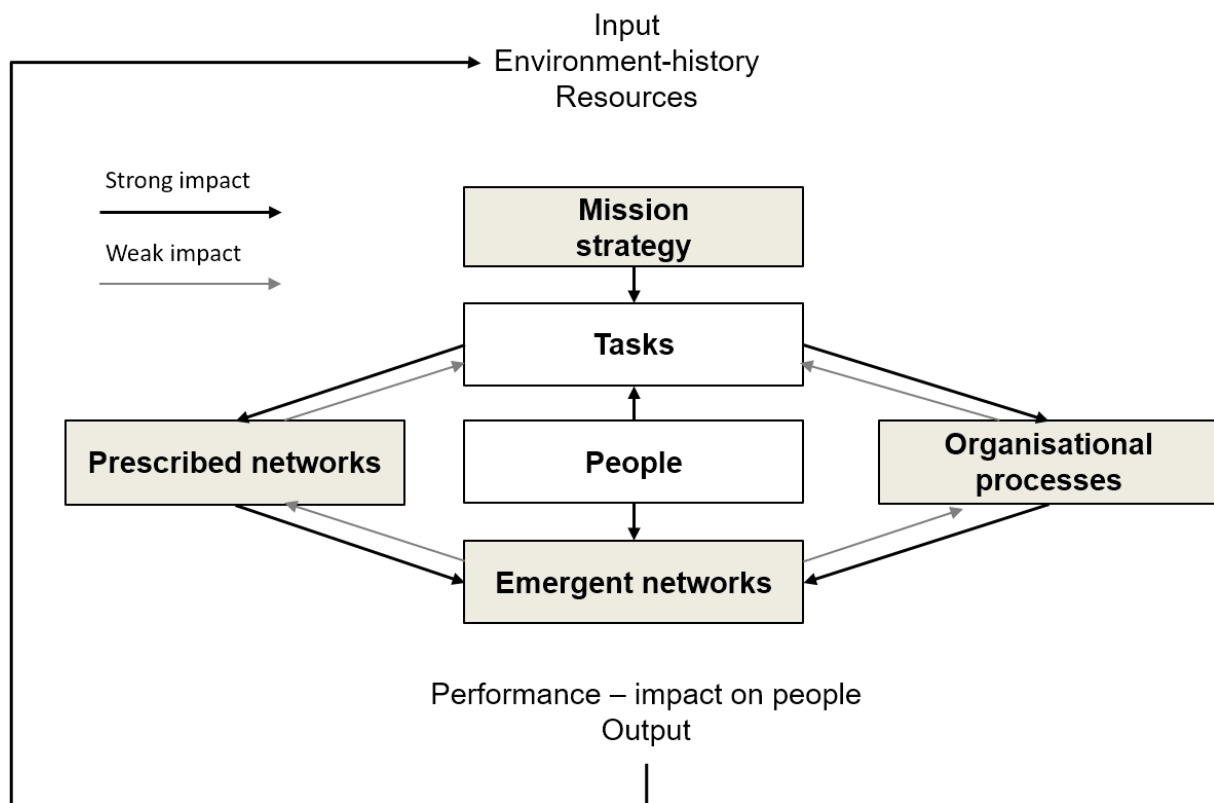
Noel M. Tichy (1983) developed a model (as shown in Figure 3.7) that illustrated that technical, political and cultural (TPC) organisational design decisions have an impact on the strategy of the organisation. Tichy claimed that an effective organisation requires strategic alignment between the mission, the structures, and the subsequent HR policies and procedures which support people in achieving the goals of the organisation.

The components of the model are as follows:

- **Technical:**
 - *Mission*: The needs of the customers informs the organisation's mission and required resources.
 - *Structure*: Related to the division of roles and responsibilities that will enable the execution of the organisational strategy.
 - *HRM procedure*: Assess whether existing staff are able to fulfil their roles, rewards and reward management system and development plans.
- **Political:**
 - *Mission*: The degree to which key staff members can influence the organisation's mission and strategy.
 - *Structures*: The level of staff empowerment.
 - *HRM Procedure*: Existing and new staff induction and reward programs.

- **Cultural:**
 - *Mission:* Purposefully develop the organisational culture in line with mission and strategy.
 - *Structures:* Align the management style and corporate identity with the organisation's culture.
 - *HRM Procedure:* Recruit staff that will fit with the organisation's culture and reward them accordingly. Also consider their training and development needs.

Figure 3.7: Tichy's TPC model



Source: Tichy (1983).

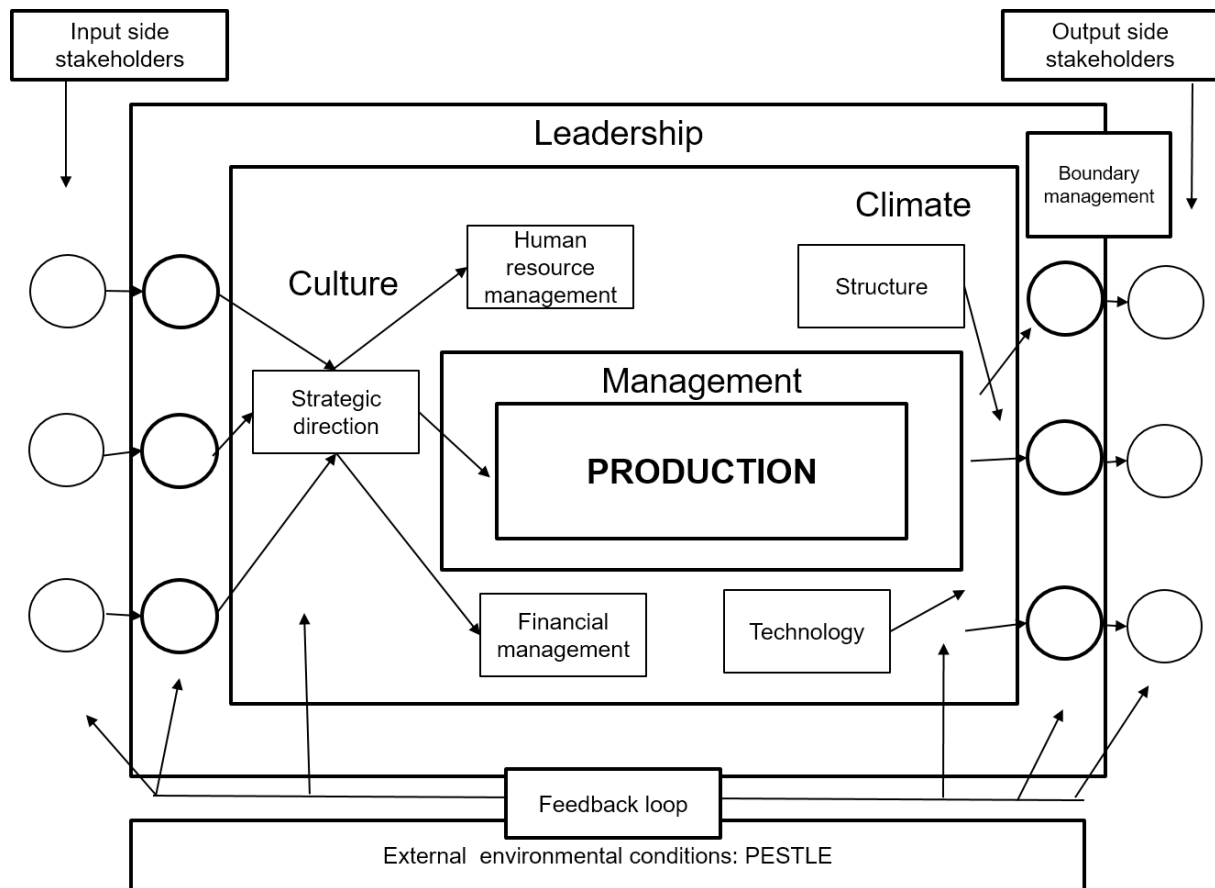
3.1.7 Freedman's socio-technical systems (SWAMP) model

A *socio-technical system* is the term usually given when social and technical elements work together to result in goal focused behaviour. The theoretical foundation for socio-technical systems is a mixture of socio-technical theory, joint optimisation and general systems theory.

Freedman (1987) incorporates social elements such as culture, climate, strategy, talent-management, structure, and finance, as well as its technological elements and their interactions, in his SWAMP model as represented in Figure 3.8. He shows how each element and the interactions among them, collects pockets of data that can be analysed in terms of both their functionality and their flexibility or adaptability in order to improve the effectiveness

of the organisation's design. This allows for focused change management and optimisation efforts to move from the current state of affairs to a more optimal state of affairs (Freedman, 1987).

Figure 3.8: Freedman's SWAMP model



Source: Freedman (1987).

3.1.8 Harrison's individual and group behaviour model

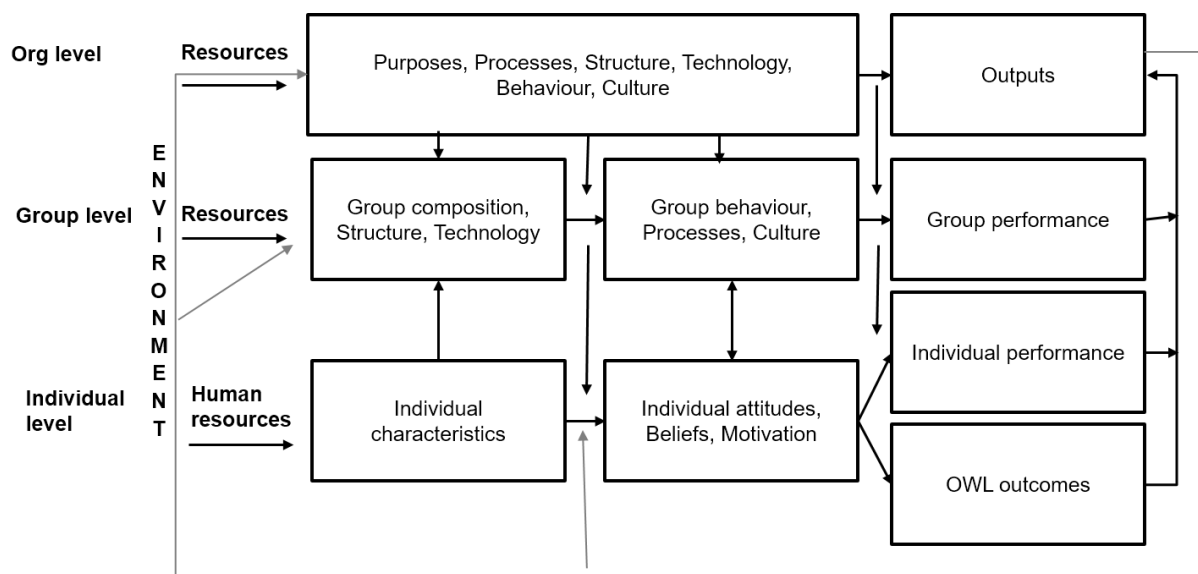
Michael Harrison (Harrison, 1987) developed the organisational behavioural analysis model (as represented in Figure 3.9) which analyses organisational behaviour on 3 levels: *individual*, *group*, and *organisational level*.

At the **individual level** of analysis, organisational behaviour consists of: (1) *characteristics*, i.e. the individual's physical and mental state, social background and behaviours, training and education, individual needs; and (2) *attitudes, beliefs, motivation*.

The **group level** components are: (1) *group composition, structure, technology* which is embedded in the social and occupational composition, structure and technology; (2) *group behaviour, processes, culture* which relates to the relationships among group members, communication, decision making and problem solving processes), leadership/management behaviour and the overall organisational culture.

The **organisational level** components are *purpose, process, structure, technology, and culture*.

Figure 3.9: Harrison's individual and group behaviour model



Legend:
 • Main lines of influence ———→
 • Feedback loops - - - - ->

Source: Harrison (1987).

3.1.9 Burke-Litwin model

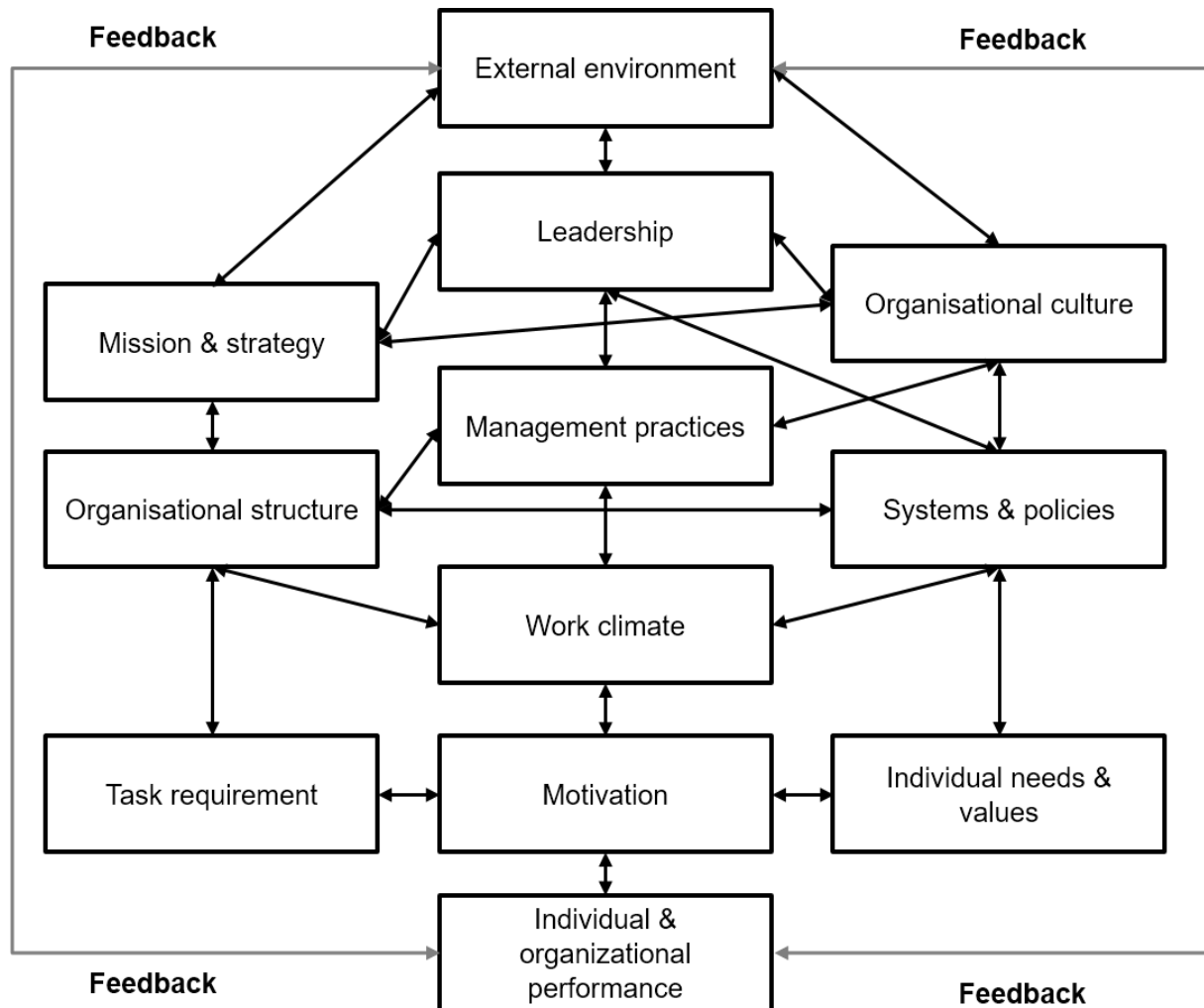
Warner Burke and Charles H. Litwin (1992) developed the organisational development model depicted in Figure 3.10 that revolves around defining and establishing a cause-and-effect relationship between 12 organisational dimensions that are regarded as key to organisational change.

The 12 organisational dimensions are:

- **Transformational factors:** (1) external environment, (2) mission and strategy, (3) leadership, (4) organisational culture, (5) individual and organisational performance.

- **Transactional factors:** (6) structure, (7) management practices, (8) systems, (9) work unit climate, (10) task and individual skills, (11) individual needs and values, (12) motivation level.

Figure 3.10: Burke-Litwin model



Source: Burke & Litwin (1992).

Five of the models were shortlisted for this particular study after due consideration was given to the purpose and elements of each of the above-mentioned organisational design models embedded in systems theory. The researcher expanded the literature review surrounding these models to further include the benefits and limitations of each. This is outlined in Table 3.2.

Table 3.2: Shortlisted systems theory based organisational design models

Organisational design model	Developer	Date	Benefits	Limitations
Galbraith's star model	Jay R. Galbraith	1970	Describes the key organisational elements. Recognises the interface between these.	Inputs/outputs/culture not explicit.
Weisbord's six-box model	Marvin R. Weisbord	1976	Diagnostic questions are included in each box. The purpose must be stated.	Too much attention given to some elements may lead to not paying attention to others.
Nadler & Tuschman's congruence model	David Nadler Michael Tushman	1980	Easy to follow. Elements of the "informal" and "formal" organisation are discussed. Boxes must be congruent with each other.	Focus on only a few named elements may result in the overlooking of crucial aspects.
McKinsey's 7-s model	Robert H. Waterman Jr. Tom Peters	1981	Describes the key organisational elements. Recognises the interface between these.	No external environment element. No feedback loops. No performance variables.
Burke-Litwin model	W. Warner Burke George H. Litwin	1992	Completes the system by including feedback loops. Qualitative aspects are included.	Too much detail will cause difficulty to implement. Difficult to grasp at a quick glance.

Source: Based on Stanford (2007).

The researcher further scrutinised the shortlisted organisational design models in terms of the characteristics of effective organisational design: *simplicity, flexibility, reliability, economy and acceptability* (Johnson *et al.* 1973). Simplicity, flexibility and reliability tend to be a function of design, whereas economy and acceptability pertain to both design and operations. The characteristics are explained in more detail (Johnson *et al.* 1973):

- **Simplicity:** Simplicity is the key to an effective organisational system. It is imperative to use clear and precise definitions and to outline and link exact tasks for each sub-system in the organisation.

- **Flexibility:** The operating landscape of the organisation changes frequently in response to events in its internal and external environment. Managers should be prepared to adjust operations accordingly. Management can respond in two ways: (1) they can design new systems or (2) they can modify existing operating systems. Every system should be sufficiently flexible to integrate changes that may occur either in the environment or in the nature of the inputs.
- **Reliability:** An effective organisational design will yield consistent output. The typical system operates somewhere between the zero output and the constant/predictable output zones. Reliability can be designed into a system by carefully selecting and arranging the operating components.
- **Economy:** An effective system is not necessarily an economical (efficient) system. There is always a trade-off between effectiveness and efficiency.
- **Acceptability:** Any system, despite its design, can only function properly if it is accepted by the people who has to implement it. If a system is not accepted, two things can happen: (1) the system will be modified gradually by the people who are using it, or (2) the system will be used ineffectively and will ultimately fail.

The extensive evaluation of the systems based models of organisational design, as discussed above, identified the theory base, benefits and limitations of each model. If the identified aspects of each model is measured against the characteristics of effective organisational design (*simplicity, flexibility, reliability, economy and acceptability*) as explained above, Marvin Weisbord's Six-box model (1976) offers the most practice-based synthesis of knowledge and experience into a model (simplicity) pinpointing **leadership** as the central mechanism tasked with the management (*acceptability*) of the interaction (*economy*) between **purpose, structure, relationships, rewards and helpful mechanisms**. The model offers a *simple*, yet interdependent, self-regulating (*flexible* and *reliable*) system and was selected as the best suited foundation for identifying the building blocks of the conceptual ERM implementation model.

A system, such as Weisbord's Six-box model, aimed at self-correction through feedback in order to maintain a positive input-output conversion is embedded in the notion of continual improvement. Before the conceptual building blocks of the ERM implementation model can be established, it is imperative to gain a better understanding of the principles promoting a culture of continual improvement (Deming, 1982).

3.4 PRINCIPLES OF CONTINUAL IMPROVEMENT

The pressure for continual improvement is severe and relentless. This burden is experienced by organisations worldwide. There is not only internal pressure demanding constantly increasing contributions within organisations, such as cost reduction, effective asset management, and revenue generation; there are also constantly changing external forces at play, such as global competition, increased governmental regulation, technology advances, supplier, channel and customer dynamics, increased product/service variety and shorter life cycles, as well as social and environmental responsibilities. In order to be well positioned to deal with this demanding internal and external operating environment, most organisations are attempting to achieve *continual improvement* in all aspects of their business, and as such provide increasing competitive advantage in the future (Handfield *et al.*, 2009).

Continual improvement is an approach that enables stakeholders to (CQI, 2016):

- Understand the importance of the correct execution of ongoing processes within the organisation;
- Create a learning organisation where continual improvement initiatives are the result of data collection and analysis;
- Develop and implement incremental process changes that will have an organisation wide effect;
- Formalise change management in terms of testing and validating proposed changes;
- Adjust the existing standard operating procedures with accepted improvements; and
- Embed a culture of sharing solutions within the organisation.

Continual improvement leads to benefits which at the point of implementation often look insignificant. Collectively, however, it may result in profound improvements. Granted, it is expensive and time consuming to develop the capability for continual improvement across the whole organisation and it demands persistence over many years from top management, but the alternative is much more expensive and has a negative impact on all relationships within an organisation (CQI, 2016).

The Deming cycle (Deming, 1982), is a generally accepted platform for continual improvement regarding the efficiency and effectiveness with which a product or service is delivered to a customer. In order to achieve performance excellence, Deming proposed, as early as the 1950s, that business processes should be analysed and measured to identify sources of variations that cause products/services to deviate from customer requirements and thus fail to satisfy their needs. Part of this recommendation was that business processes be placed in a continuous feedback loop so that managers can identify and change the parts of the process that need improvements.

Deming created a diagram to illustrate this continuous process. The steps of this process is graphically represented in Figure 3.11, and commonly known as the *Plan, Do, Check and Adjust* (PDCA) cycle:

- **Plan:** design or revise business process components to improve results.
- **Do:** implement the plan and measure its performance.
- **Check:** assess the measurements and report the results to decision makers.
- **Adjust:** decide on changes needed to improve the process.

Figure 3.11: The Deming cycle



Source: Deming (1982).

The Deming cycle was taken into account during the design phase of the conceptual ERM implementation model to serve as a platform for structuring the model and ensuring a logical flow from one building block to another as part of a continuous feedback loop, as will be explained in Section 5.2. It further served as foundation for the last building block of the conceptual ERM implementation model to ensure a focus on continual feedback with regards to the quality of delivery of the different elements of the ERM program.

3.5 SUMMARY

Chapter 3 contains the results of the systematic literature review (pertaining to organisational theory, design and structure; organisational design models and the principles of continuous improvement) that was launched with the design of a prescriptive conceptual ERM implementation model and assessment tool in mind.

Chapter 4 will address the research design and methods employed within this research project, together with the results of phase 1 of the empirical portion of the study where the objective was to confirm certain elements of the ERM domain for South African organisations and also to confirm the problem statement. The chapter starts by revisiting the problem statement and research objectives. This is then followed by a discussion of the research design and method for the study as a whole. The results of phase 1 of the empirical portion of the study follows in the section thereafter.

CHAPTER 4: RESEARCH DESIGN AND METHOD

4.1 INTRODUCTION

Before the research design and method utilised within this research project are explained, it is important to reiterate that by understanding the ERM domain's intricacies, management scholars are poised to refocus ERM from a strategic management approach to a framework of tools, methods and processes that (1) are capable of challenging existing assumptions about the world within and outside the organisation; (2) communicate risk information with the use of distinct tools (such as risk maps, stress tests, and scenarios); (3) collectively address gaps in the control of risks that other control functions (such as internal audit and other boundary controls) leave unaddressed; and, in doing so, (4) complement, but do not displace, existing management control practices. This is supported by the results of the systematic literature review.

The primary aim of this study remains to develop and validate the conceptual ERM implementation model as well as the ERM implementation assessment tool. The goal of this chapter is to outline the research design and method used to achieve this aim. The chapter starts by revisiting the problem statement and research objectives. A detailed discussion of the research design and method makes up the bulk of the chapter. This reflects an overview of the systematic literature review and the empirical study. The empirical study will be discussed according to the different phases of the study, by addressing the target population, sampling method, sampling size, statistical analysis and the research techniques utilised in each phase.

4.2 PROBLEM STATEMENT

The role of the risk practitioner (such as the chief executive officer, chief risk officer, or another risk custodian) has changed from that of an advisor to a business partner as expectations regarding timely and transparent risk information from external and internal risk stakeholders have escalated (Senior Supervisors Group, 2009). The risk practitioner's ability to keep organisational decision makers informed of existing, new, and emerging risks, and therefore opportunities, is pivotal to the organisation's success as it enables risk-based and timely organisational decisions leading to the creation, protection or enhancement of value within their business.

It stands to reason that a risk practitioner employed by an organisation operating within the ERM domain - with a clear understanding of the concept ERM, the adoption drivers of ERM, the proposed value-add for their organisation, and the barriers to ERM - should be able to develop an ERM implementation program and assessment tool to create, protect or enhance

their organisation's value. It is, however, clear from the ambiguity surrounding the common understanding of ERM that it is difficult to implement (Colquitt *et al.*, 1999; Kleffner *et al.*, 2003; Liebenberg & Hoyt, 2003; Aabo *et al.*, 2005; Beasley *et al.*, 2005; Nocco & Stulz, 2006; Pagach & Warr, 2011).

Based on the results of the preliminary literature review, an in-depth study has been done on how to translate an overarching, strategic ERM approach into a practice-based ERM framework, with specific tools to enable any organisation, within any industry, to sufficiently implement ERM. The purpose of the study was to develop an ERM implementation model and assessment tool that can be used by all risk stakeholders as a guideline for ERM program implementation and to assess the status on ERM implementation and the degree of formality of ERM implementation within South African organisations. This study was an attempt to:

- Develop an ERM implementation model that will be aligned with an organisational design model (Weisbord's Six-box model) and the principles of continual improvement (the Deming cycle) in order to provide the theoretical frameworks for the building blocks on which the model will be constructed. The model will be populated with requirements, deliverables, and the purpose of these deliverables from Guide 73: Risk management vocabulary (ISO, 2009a), ISO 31000: Risk management principles and guidelines (ISO, 2009b), ISO 31010: Risk Management – risk assessment techniques (ISO, 2009c), and the King III Code on Governance (IODSA, 2009). This will culminate in a clear blueprint for the risk stakeholder to utilise for successful ERM implementation within any context.
- Develop an ERM implementation assessment tool (consisting of checklists and dashboards as illustrated in Addenda B and C) to determine the ERM implementation status and the degree of formality of ERM implementation within South African organisations.

4.3 RESEARCH OBJECTIVES

To reiterate, the primary objective of this study is to develop and validate an ERM implementation model and assessment tool. The derived theoretical objectives for this study are:

1. Describe the ERM domain in terms of the scope and definition of ERM, ERM adoption drivers, and the perceived value proposition of ERM implementation;
2. Identify and document the barriers to ERM implementation;
3. Explore the use of organisational design models and the principles of continual improvement as the theoretical frameworks for the conceptual ERM implementation model;
4. Develop the conceptual ERM implementation model; and

5. Develop a proposed ERM implementation assessment tool consisting of checklists and dashboards.

The researcher identified the following empirical objectives for this study:

1. Obtain information about the South African ERM domain; with specific reference to the industry, the type of organisation, and the position of the risk practitioner within the organisation;
2. Identify and document information about the current ERM programs for a sample of South African organisations and rank the barriers to ERM implementation; and
3. Adjust the conceptualised ERM implementation model and the proposed ERM assessment tool based on the expertise of senior risk stakeholders within South African organisations.

4.4 RESEARCH PARADIGM

Jonker and Pennink (2010) defines a research paradigm as a set of essential assumptions and beliefs as to how the world is perceived and this serves as a thinking framework that guides the behaviour of the researcher. Several research paradigms were considered for this study: 1) positivism; 2) post-positivism; 3) interpretivism, and 4) pragmatism.

Table 4.1 provides an overview of the fundamental beliefs of the aforementioned research paradigms. It is explained in terms of the ontology, epistemology, axiology and research method.

Table 4.1: Fundamental beliefs of research paradigms

Research paradigm	Ontology	Epistemology	Axiology	Research method
	<i>Position on the nature of reality.</i>	<i>View on what constitutes acceptable knowledge.</i>	<i>Role of values in research and the researcher's point of view.</i>	<i>The model behind the research process.</i>
Positivism (Naïve realism)	External, objective and independent of social actors.	Only observable phenomena can provide credible data, facts. Focus on causality and law-like generalisations, reducing phenomena to simplest elements.	Value-free and etic. Research is undertaken in a value-free way, the researcher is independent of the data and maintains an objective stance.	Quantitative
Post-positivism (Critical realism)	Objective. Exist independently of human thoughts and beliefs or knowledge of their existence, but is interpreted through social conditioning (critical realist).	Only observable phenomena can provide credible data, facts. Focus on explaining within a context or contexts.	Value-laden and etic. Research is value laden; the researcher is biased by world views, cultural experiences and upbringing.	Quantitative or qualitative

Research paradigm	Ontology	Epistemology	Axiology	Research method
Interpretivism (Constructivism)	Socially constructed, subjective, may change, multiple	Subjective meanings and social phenomena. Focus upon the details of situation, the reality behind these details, subjective meanings and motivating actions.	Value-bond and emic. Research is value bond, the researcher is part of what is being researched, cannot be separated and so will be subjective.	Qualitative
Pragmatism	External, multiple, view chosen to best achieve an answer to the research question	Either or both observable phenomena and subjective meanings can provide acceptable knowledge dependent upon the research question. Focus on practical applied research, integrating different perspectives to help interpret the data.	Value-bond and etic-emic. Values play a large role in interpreting the results, the researcher adopting both objective and subjective points of view.	Quantitative and qualitative (mixed or multimethod design).

Source: Saunders *et al* (2009), Guba & Lincoln (2005), and Hallebone & Priest (2009)

This study was conducted in accordance with the principles of the pragmatic research paradigm due to the fact that the research problem stems from a real-world phenomenon (Saunders *et al.*, 2009, Guba & Lincoln, 2005, and Hallebone & Priest, 2009). There are several barriers that prevent ERM practitioners from the successful implementation of their ERM programs. The main objective of the study is also the development of an ERM implementation model and assessment tool for risk stakeholders in practice. The associated research design and research method will be discussed in the following sections.

4.5 RESEARCH DESIGN

Palinkas *et al* (2011) suggested that “in implementation research, quantitative and qualitative methods often play important roles, either simultaneously or sequentially, for the purpose of answering the same question through (a) convergence of results from different sources, (b) answering related questions in a complementary fashion, (c) using one set of methods to expand or explain the results obtained from use of the other set of methods, (d) using one set of methods to develop questionnaires or conceptual models that inform the use of the other set, or (e) using one set of methods to identify the sample for analysis using the other set of methods.” The mixed methods research approach was used to identify and confirm the problem and to gather evidence to support the proposed solution.

4.6 RESEARCH METHOD

Information regarding the context of ERM and the relevant theoretical frameworks for this study were gathered with a systematic literature review (qualitative). Information regarding the South African ERM domain, specific information regarding the aforementioned organisations' ERM programs, and the most applicable barriers to ERM implementation were gathered in the first phase of the empirical study by using a questionnaire (quantitative). The conceptualised ERM implementation model and the proposed ERM implementation assessment tool was validated through the second phase of the empirical study utilising the Delphi technique (qualitative). The aforementioned research methods will be discussed in more detail as part of the systematic literature review (refer to Section 4.6.1) and the empirical study (refer to Section 4.6.2).

4.6.1 The systematic literature review

4.6.1.1 Scoping

4.6.1.1.1 Background

Goodwin and Geddes (2004) explain that a systematic literature review (SLR) is a data collection strategy to identify, collect, evaluate, and synthesise relevant issues on a specific topic. This study centres on the design of an ERM implementation solution (model and assessment tool) that will address the following areas of concern as identified by various researchers:

- The misalignment between the principles of organisational design and ERM program design (Martin & Power, 2007; Arena *et al.*, 2010; Bromiley *et al.*, 2014).
- The availability of limited literature on how to implement ERM (Liebenberg & Hoyt, 2003; Beasley *et al.*, 2005; Nocco & Stulz, 2006; Blaskovich & Taylor, 2011; Fox, 2012; Gates *et al.*, 2012; Bromiley *et al.*, 2014; Kerstin *et al.*, 2014; Viscelli *et al.*, 2014).
- The ambiguity surrounding the concept practice-based ERM (Arena *et al.*, 2010; Arena *et al.*, 2011; Mikes & Kaplan, 2013).

4.6.1.1.2 The research questions

As previously stated, the SLR is a data collection strategy. Table 4.2 therefore lists the research questions per theoretical objective that had to be answered by the SLR.

Table 4.2: Systematic literature review: research questions

Theoretical objectives	Research questions	Chapters
1. Describe the ERM domain in terms of the scope and definition of ERM, ERM adoption drivers, and the perceived value proposition of ERM implementation.	- What is the scope of enterprise risk management? - What is the definition of ERM? - What are the adoption drivers for ERM? - What is the value-add proposition through ERM implementation?	2
2. Identify and document the barriers to ERM implementation.	What are the barriers to ERM implementation?	2
3. Explore the use of organisational design models and the principles of continual improvement as the theoretical frameworks for the conceptual ERM implementation model.	- What does organisational theory, structure and design entail? - Which organisational design model can be used as the theoretical framework for an ERM implementation model? - How can the conceptual ERM implementation model be aligned with the principles of continuous improvement?	3
4. Develop the conceptual ERM implementation model. 5. Develop a proposed ERM implementation assessment tool consisting of checklists and dashboards.	- What are the components of the conceptual ERM implementation model? - What are the best practice requirements for each component of the ERM implementation model? - What are the requirements, deliverables and the purpose of the deliverables needed to populate the conceptual ERM implementation model? - How can the level of implementation of the ERM implementation model be assessed?	5

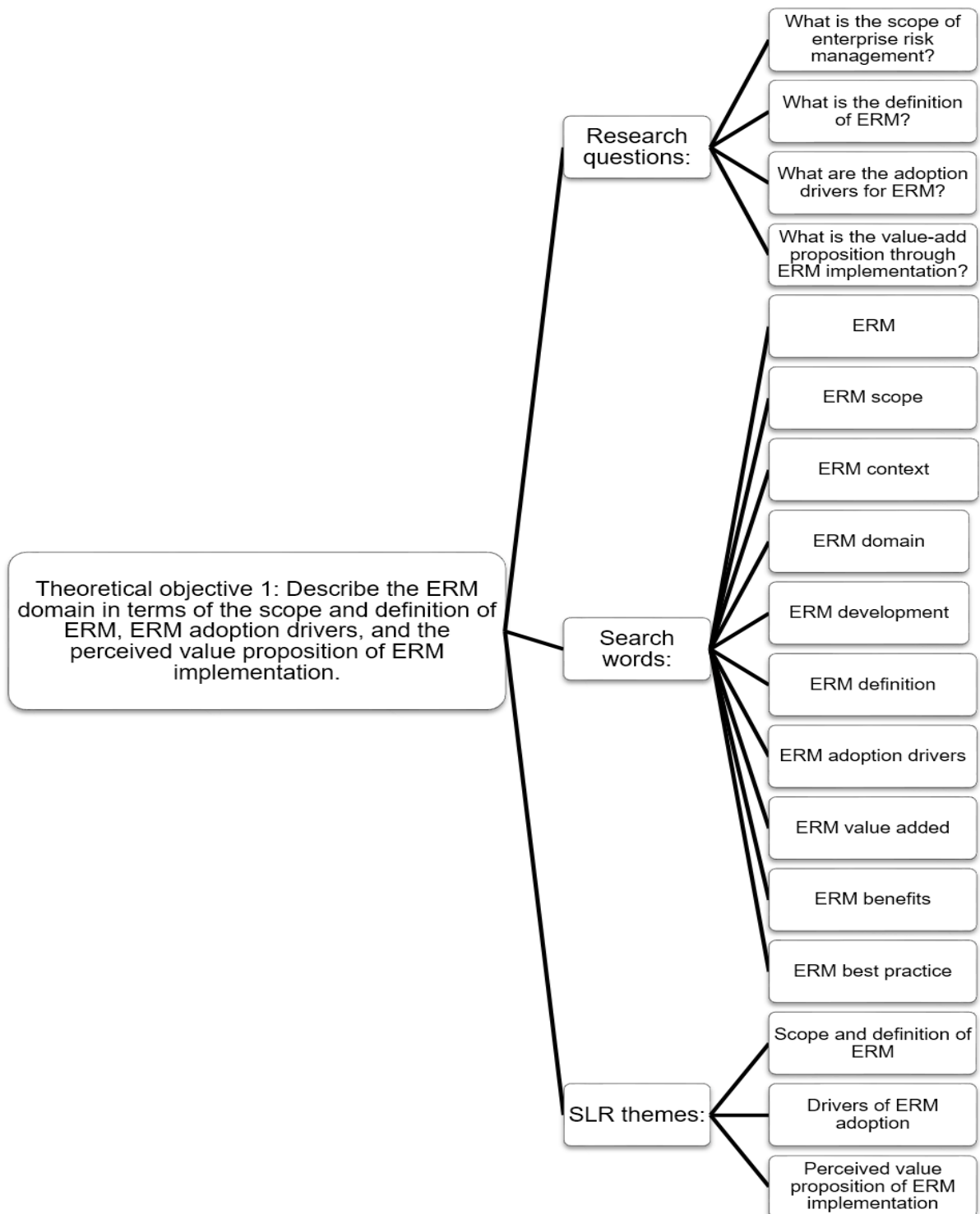
Source: Researcher's own compilation.

4.6.1.2 Planning

4.6.1.2.1 Search words to create systematic literature review themes

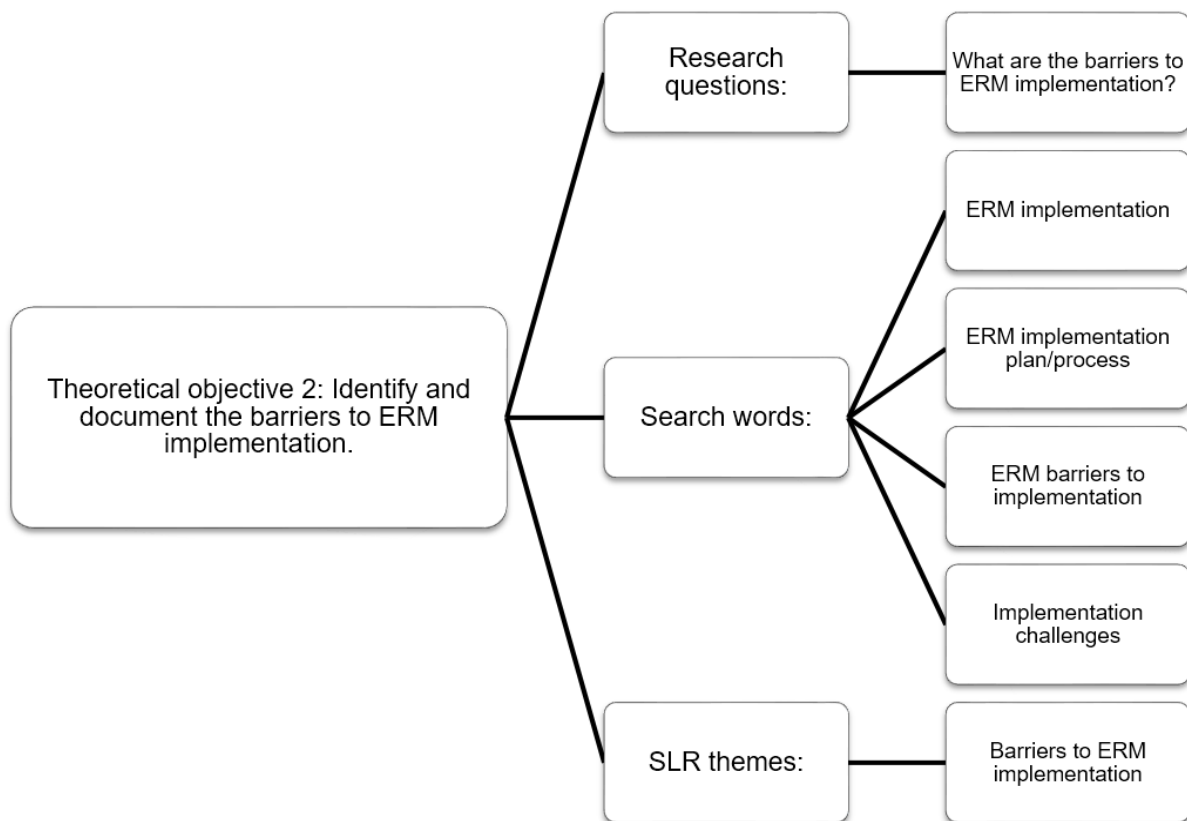
Figures 4.1 to 4.4 is a graphical illustration of the link between the theoretical objectives, the associated research questions, the search words and the themes that were used in the SLR.

Figure 4.1: Theoretical objective 1: Research questions, search words, SLR themes



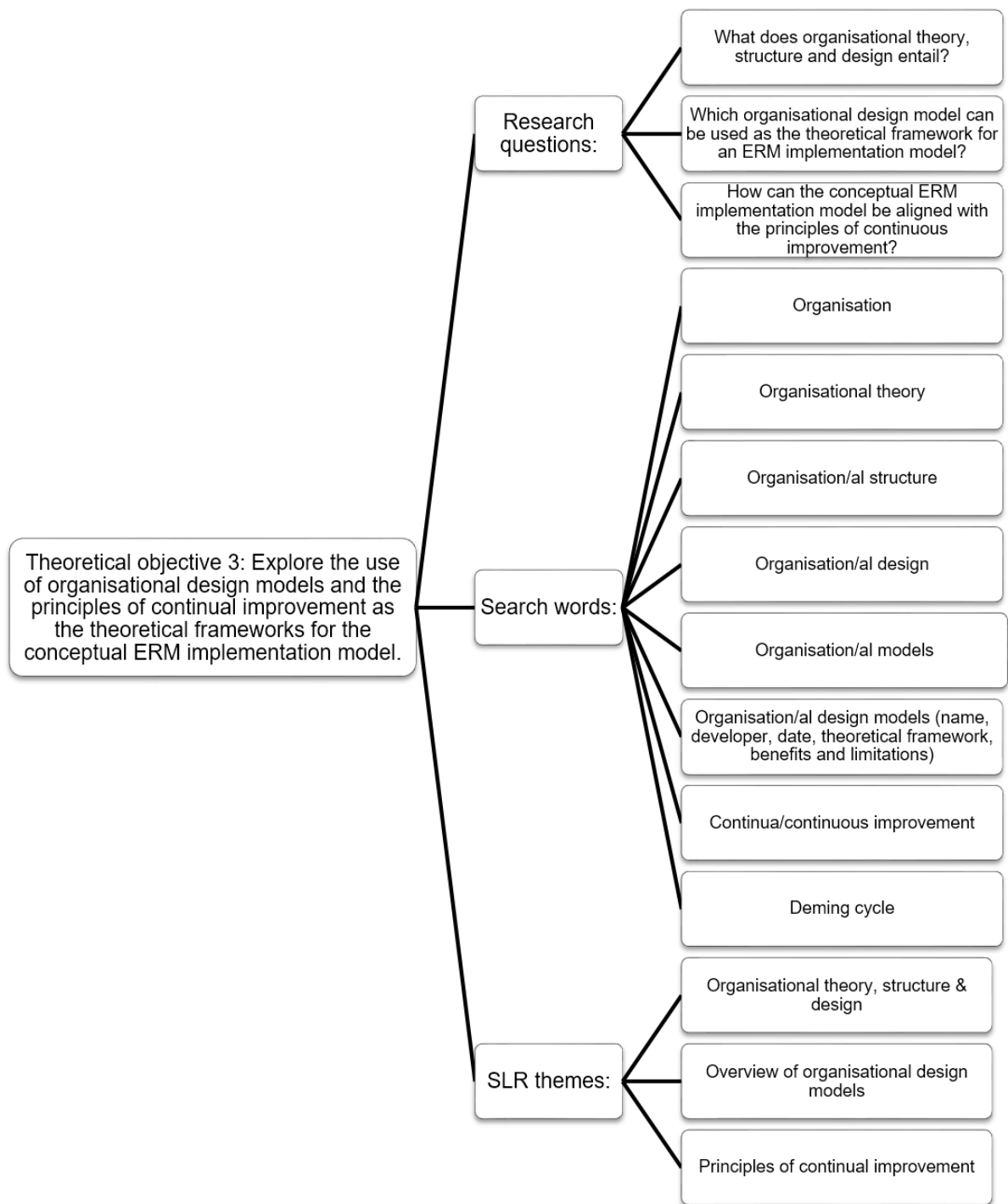
Source: Researcher's own compilation.

Figure 4.2: Theoretical objective 2: Research questions, search words, SLR themes



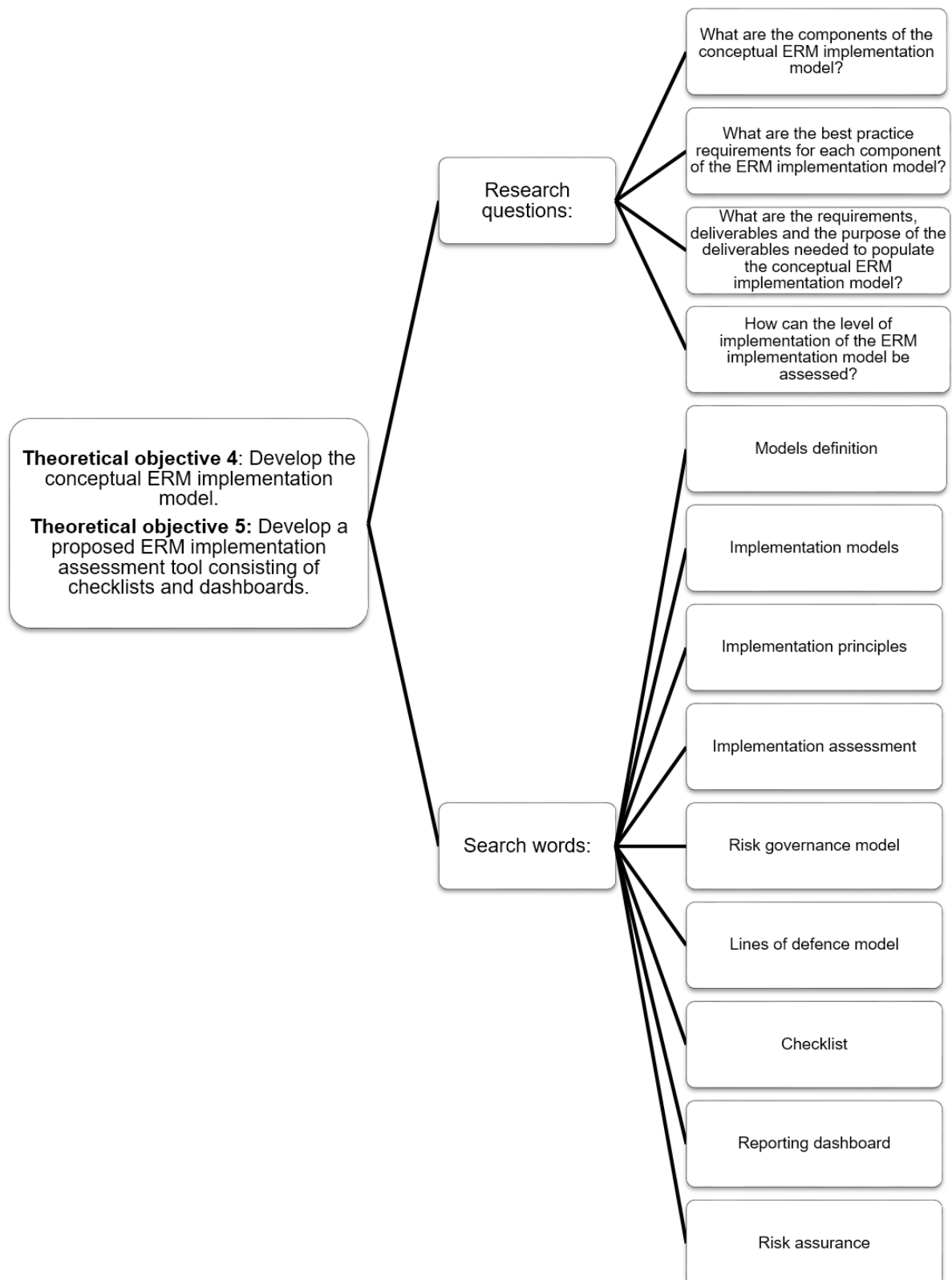
Source: Researcher's own compilation.

Figure 4.3: Theoretical objective 3: Research questions, search words, SLR themes



Source: Researcher's own compilation.

Figure 4.4: Theoretical objective 4 and 5: Research questions, search words, SLR themes



Source: Researcher's own compilation.

4.6.1.2.2 Basic search strategy

Manual searches were performed for the following periods:

- 1994 – 2016: the period was chosen as the first formalised risk management framework was first published in 1994; and
- 1950 – 2016: Ludwig von Bertalanffy (1950) introduced general systems theory in 1950. The organisational design models that were evaluated as the theoretical framework for the conceptual ERM implementation model are based on systems theory.

4.6.1.2.3 Resources to be searched

Electronic databases: LexisNexis, EBSCOhost, Emerald Insight Journals, Google Scholar, JSTOR, Juta, EBSCO Discovery Service (EDS), Sabinet Online, SAePublications and others.

Journals: Management studies, accounting, audit and risk management DHET, IBSS and IS accredited journals and non-accredited journals.

Other: Books, theses, dissertations, standards, white papers and practice notes from standards setting organisations, industry publications, professional bodies, consulting firms, and rating agencies.

4.6.1.2.4 Selection criteria

This section describes the inclusion and exclusion criteria that will be used during the selection of relevant literature.

- **Inclusion criteria:**
 - Published work: scholarly literature, i.e. articles published in accredited (accredited by the social sciences citation index of the ISI, the arts and humanities citation index of the ISI, the international bibliography of social sciences (IBSS) and the department of education (DHET)) and other journals, books, theses, and dissertations; and grey literature, i.e. white papers and practice notes from standards setting organisations, industry publications, professional bodies, consulting firms, and rating agencies will be accepted if relevant;
 - Unpublished work: working papers written by key authors as identified from the published work; and
 - Where several papers reported the same study only the most recent paper will be included.

- **Exclusion criteria:**
 - Published work will be excluded where only the abstract, but not the full text is available;
 - Publications that fall outside of the indicated time frame Refer to Section 4.6.1.2.2) are not included; and
 - Letters and editorials will be excluded.

4.6.1.2.5 Selection process

The selection process will be performed by the researcher and a sample of the results will be verified by the promotor. The selection process is divided into two phases:

- **Preliminary literature review:** published and unpublished work found during the initial search are assessed based on their title and the abstract. Unsuitable literature is excluded.
- **Selected literature review:** the suitable results from the preliminary literature review are then subjected to further evaluation to ensure that it contributes to answering the research questions in Section 4.6.1.1.2.

4.6.1.3 Screening

4.6.1.3.1 Data extraction form

Table 4.3 described the data extraction form that was used for each of the knowledge clusters. The code was assigned by the researcher in order to simplify the navigation of the search results and to remove duplication. The publication/publisher column contains information on the publication or the publisher. The purpose of the accredited column is as quality assessment criteria and to indicate whether the literature was published in an accredited journal or not. The table also includes the year of publication, authors, type of source, the title of the source and the reference of the source. The results of the screening process were included in the Endnote X7.5 citation manager.

Table 4.3: Data extraction form: Data collection detail

Data collection							
Code	Publication / Publisher	Accredited	Year	Authors	Type	Title	Reference
Assigned by researcher	Publication = name of the journal, position papers, standards, surveys Publisher = of books, journals, position papers, standards, surveys	DHET / IBSS / IS	1950 - 2016	Can be people or institutions	Book Case study Conference paper Journal article Position paper Report Standard Survey Working paper	Of the: Book Case study Conference paper Journal article Position paper Report Standard Survey Working paper	Harvard style for NWU

Source: Researcher's own compilation.

4.6.1.3.2 Data analysis

The main purpose of the data analysis part of the data extraction form is to assess the content of each data source in terms of the research problem addressed, the research method used, the research questions, the findings, research gaps identified. Table 4.4 gives an outline of the information requirements for this part of the data extraction.

Table 4.4: Data extraction form: Data analysis detail

Data analysis						
Abstract / Introduction	Research Problem (What?)	Research Method	Research Questions / Hypotheses	Findings	Research Gaps	Main Author

Source: Researcher's own compilation.

4.6.1.4 Eligibility

4.6.1.4.1 Quality assurance process

Each document in the final set of literature was assessed for its quality against the following criteria:

- Is there an abstract?
- Is there a clear statement of the research problem?
- Is the research method clearly described?
- Are the research questions/hypotheses explicitly defined?
- Is there a clear statement of findings?

4.6.1.5 Search results

Tables 4.5 to 4.8 includes the number of records per SLR phase. The final literature was used to write the review on the ERM domain (refer to Chapter 2), to evaluate organisational design models and the principles of continual improvement (refer to Chapter 3) and to identify the best practice requirements for the conceptual ERM implementation model and assessment tool (refer to Chapter 5).

Table 4.5: Theoretical objective 1: search results per SLR phase

Search theme	Number of records per SLR phase			
	Identification	Screening*	Eligibility	Included**
ERM domain & related terms	123 400	18 510	926	72

* Reasons for exclusions: Irrelevant, not an original study, duplication.

** Reasons for inclusion: explain element of ERM domain.

Source: Researcher's own compilation.

Table 4.6: Theoretical objective 2: search results per SLR phase

Search theme	Number of records per SLR phase			
	Identification	Screening*	Eligibility	Included**
ERM implementation & related terms	44 760	6 701	336	33

* Reasons for exclusions: Irrelevant, not an original study, duplication.

** Reasons for inclusion: explain ERM implementation barriers/challenges, plans and process.

Source: Researcher's own compilation.

Table 4.7: Theoretical objective 3: search results per SLR phase

Search theme	Number of records per SLR phase			
	Identification	Screening*	Eligibility	Included**
Organisational design & continual improvement	661 865	99 295	1 408	45

* Reasons for exclusions: Irrelevant, not an original study, duplication.

** Reasons for inclusion: explain organisational landscape its theory, structure and design.

Source: Researcher's own compilation.

Table 4.8: Theoretical objective 4 and 5: search results per SLR phase

Search theme	Number of records per SLR phase			
	Identification	Screening*	Eligibility	Included**
Conceptual ERM implementation model & proposed ERM implementation assessment tool	260 044	39 007	1 990	53

* Reasons for exclusions: Irrelevant, not an original study, duplication.

** Reasons for inclusion: explain conceptual model design and assessment tools.

Source: Researcher's own compilation.

4.6.2 The empirical study

The empirical part of the study comprised of a two-phased approach.

The purpose of *phase 1* was to (1) obtain information about the South African ERM domain with specific reference to the industry, the type of organisation, and the position of the risk practitioner within the organisation, (2) identify and document specific information about the current ERM programs for the selected South African organisations, and (3) to rank the barriers to ERM implementation within a South African context (In other words, to confirm the problem statement). This was done with a questionnaire (refer to Addendum D).

Phase 2 was conducted using the Delphi technique where the detailed conceptual ERM implementation model (including the seven building blocks, requirements, derived deliverables and the purpose of each deliverable) and the proposed ERM implementation assessment tool were discussed and validated during:

- A first round of semi-structured interviews with senior risk experts within the selected South African organisations;
- A second round of e-mail communication in which the researcher presented the adjusted ERM implementation model to the same senior risk experts for their final affirmation; and
- A final round of e-mail communication to the same senior risk experts where they confirmed the proposed ERM implementation assessment tool.

The sample frame and the sampling method were the same for phase one and two of the empirical part of the study and it will be discussed in the next section.

4.6.2.1 Sampling method

The primary objective of this study is the development of a validated ERM implementation model and assessment tool that can be used by all risk stakeholders within any organisation and industry. The sample for both phases of the study (the questionnaire and the Delphi

technique, respectively) was selected in accordance with the guidelines for *non-probability purposive sampling*. Purposive sampling is widely used in qualitative research for the identification and selection of information-rich cases related to the phenomenon of interest. Although there are several different purposive sampling strategies, non-probability criterion sampling appears to be used most commonly in implementation research (Palinkas *et al.*, 2015). Non-probability sampling is a sampling technique where the samples are gathered in a process that does not give all the individuals in the population equal chances of being selected (Palinkas *et al.*, 2015).

4.6.2.2 Sample frame

ERM is not limited to specific industries and, as such, the study was conducted using employees of organisations operating within different industries, but within South Africa. The industries were selected in accordance with the industrial classifications as described in the Standard Industrial Classification of all Economic Activities report published by Statistics South Africa (2012).

For phase 1 (the questionnaire) the target population per industry reflected 46% from the financial and insurance industry and 54% from the non-financial industry (namely, public administration and defence, compulsory social security: 19%; manufacturing: 6%; and information and communication: 3%).

The purposively selected senior risk experts come from 11 different industries in South Africa. Accommodation and food service activities: 5%; agriculture, forestry and fishing: 11%; construction: 5%; electricity, gas, steam and air conditioning supply: 5%; financial and insurance activities: 11%; information and communication: 11%; manufacturing: 11%; mining and quarrying: 16%; public administration and defence: 11%; transportation and storage: 5%; and wholesale and retail trade; repair of motor vehicles and motorcycles: 11%.

The next section will be used to give an overview of phase one and two of the empirical study in terms of the target population, the sampling method, the sample size, the statistical analysis, and the questionnaire used.

4.6.2.3 Phase 1: Enterprise risk management domain questionnaire

A questionnaire (refer to Addendum D) was developed to gather information pertaining to the ERM domain and ERM program within South African organisations and to rank the barriers to ERM implementation.

The questionnaire was structured as follows:

- Part 1: General information regarding your industry, your organisation and your position in the organisation;
- Part 2: Information on your enterprise risk management (ERM) program
 - Section 1: General information;
 - Section 2: Importance of ERM; and
 - Section 3: Barriers to ERM program implementation

4.6.2.3.1 Target population

The questionnaire was sent to *primary and secondary risk stakeholders* at all management levels, employed at organisations within any industry within South Africa. In this instance, a primary risk stakeholder's main responsibility is risk management and a secondary risk stakeholder's main responsibility is either financial or operational, with the added secondary responsibility of risk management. A list of the target population for the questionnaire was compiled from LinkedIn members with the word "risk" in their job title and the Institute of Risk Management of South Africa's (IRMSA) list of members. Table 4.9 describes the percentage of total split between the primary and secondary risk stakeholders in the target population.

Table 4.9: Percentage of primary vs. secondary risk stakeholders in the target population

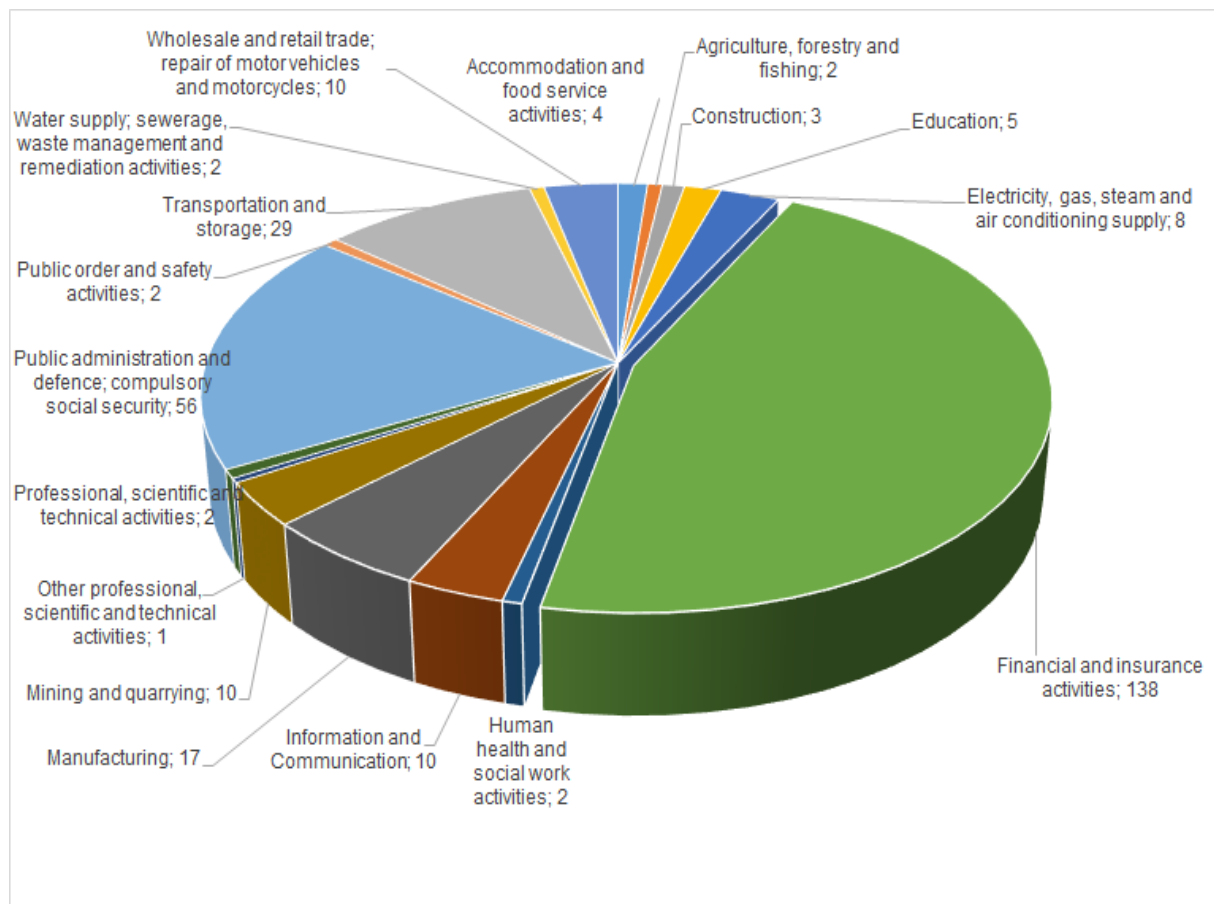
Risk stakeholder	% of Total
Primary risk stakeholder	72%
Secondary risk stakeholder	28%

Source: Researcher's own compilation

4.6.2.3.2 Sample size

It has been established that phase 1 of the study (the questionnaire to gather information pertaining to the South African ERM landscape and specific information regarding South African ERM programs) was sent to *primary and secondary risk stakeholders* at all management levels employed at organisations within any industry within South Africa. The sample size was 300. The primary and secondary risk stakeholders came from 16 different industries in South Africa. 138 participants came from financial and insurance activities; 56 from public administration and defence compulsory social security; 29 from transportation and storage; and 17 from manufacturing. Agriculture, forestry and fishing; information and communication; human health and social work activities; professional, scientific and technical activities; public order and safety activities; and water supply, sewerage water management and remediation only had 2 participants each. The sample distribution across industries is illustrated in Figure 4.5.

Figure 4.5: Sample size - distribution across industries (number)



Source: Researcher's own compilation.

4.6.2.3.3 Statistical analysis

For the first phase of this study, the captured data for the quantitative questionnaire, collecting data on the ERM domain and ERM programs in South African organisations and confirming the problem statement, was analysed using Microsoft Office Excel 2016.

4.6.2.4 Phase 2: Validation of the enterprise risk management implementation model and assessment tool via the Delphi technique

The second phase of the study utilised the Delphi technique. The Delphi technique is a group facilitation technique, which is an iterative multistage process, designed to transform opinion into group consensus (Hasson *et al.*, 2000). The focus of this stage of the research study was to gain consensus on (1) the elements of the conceptual ERM implementation model, (2) the revised elements (with the results from round one) of the adjusted ERM implementation model, and (3) the proposed ERM implementation assessment tool from the selected senior risk experts.

The target population, sampling method, and the sample size are the same for all three rounds of the Delphi technique.

4.6.2.4.1 Target population

According to Adler and Ziglio (1996) there are four requirements for expertise: (1) knowledge and experience with the issues under investigation; (2) capacity and willingness to participate; (3) sufficient time to participate in the Delphi studies, and (4) effective communication skills.

Senior risk experts must, therefore:

- Have knowledge and experience regarding the design, development and/or implementation of an ERM program;
- Hold a senior level risk management position within their organisation, and
- Give written informed consent stating their capacity and willingness to participate in the study.

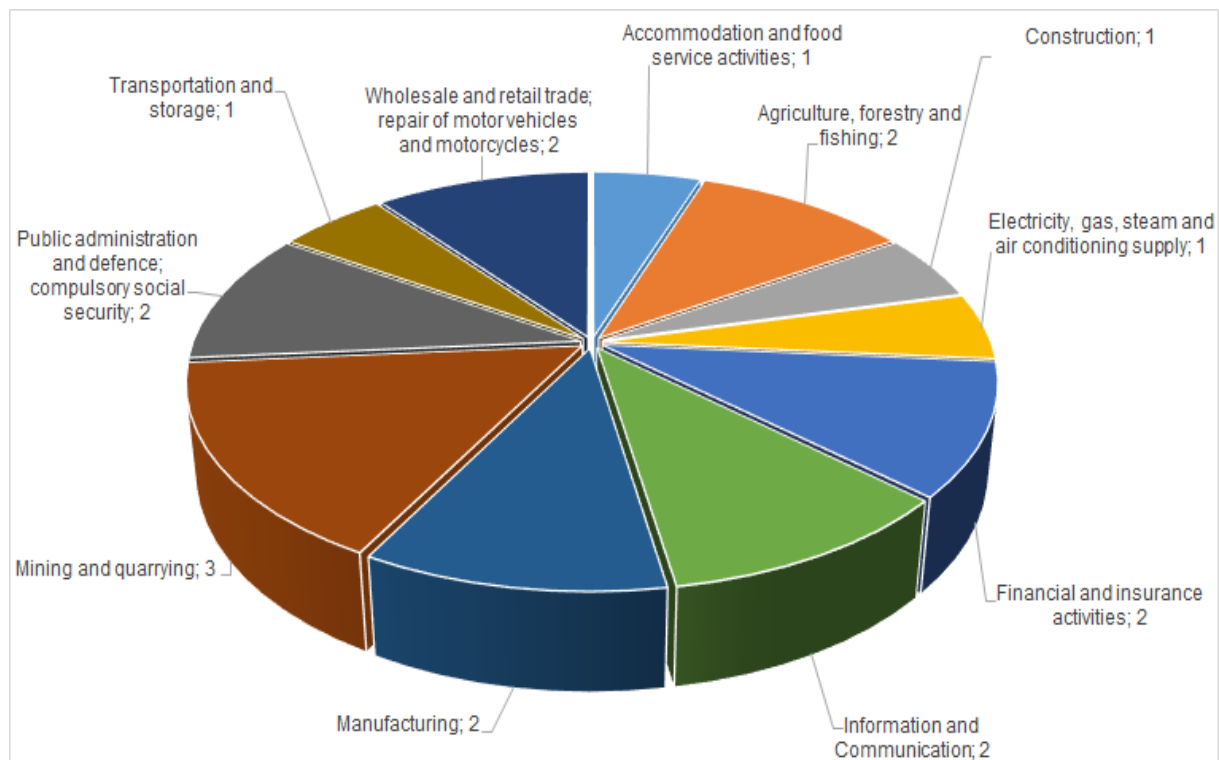
4.6.2.4.2 Sampling method

For this portion of the study, senior risk experts were purposively selected from the target population utilised in phase 1 according to the criteria for senior risk experts as stated in the previous section.

4.6.2.4.3 Sample size

For the second phase of the study (utilising the Delphi technique), senior risk experts' opinions were sought for their ability to insightfully answer the research questions (Fink, 2016). The sample size for round 1 of the Delphi-technique, consisting of face-to-face meetings using semi-structured interviews, round 2 and round 3 (e-mail communication), depended on the target population, which is the number of senior risk experts from different organisations within various industries within the South African risk management context. Nineteen senior risk experts (refer to Figure 4.6) were invited to partake in this research study of which eleven (refer to Figure 6.4) accepted the invitation given the level of involvement in terms of time and attention.

Figure 4.6: Sample: invited senior risk experts per industry (number)



Source: Researcher's own compilation.

All the purposively selected risk experts have been involved in the design, development and implementation of several ERM programs in several industries, they are involved in IRMSA (the Institute of Risk Management South Africa), either as executive committee members or subject matter experts, hold Chief Risk Officer or equivalent positions in their organisations, and they have more than 7 years of risk management experience.

4.6.2.4.4 Round 1: Validate the conceptual enterprise risk management implementation model

The purpose of the first round was to confirm the conceptual ERM implementation model with the selected target population. This was done with semi-structured interviews.

- **Research process:** The conceptual ERM implementation model and all its elements were discussed with the senior risk experts in individual face-to-face semi-structured interviews. The duration of each interview varied between 60 and 90 minutes. Each participant completed and signed an informed consent form that complied with the ethical guidelines of the North-West University (Ethical clearance number = ECONIT-2016-038).

Refer to Addendum E for the questionnaire that was presented to the senior risk experts (participants) at the interviews. The suggestions for improvements were documented and recorded by the researcher during the interviews.

- **Statistical analysis:** The data analysis for the first round of the Delphi phase of this research study, confirming the adjustments to be made to the ERM implementation model, was done according to the frequency with which a change is suggested by the senior risk experts. The results of the analysis were documented in Microsoft Office Excel 2016.

4.6.2.4.5 Round 2: E-mail confirmation of the adjusted enterprise risk management implementation model

The second round of the Delphi technique, validating the adjusted ERM implementation model, aimed to reach consensus on the seven building blocks, allocated best practises, derived deliverables, and the purpose of each deliverable. A questionnaire was sent via e-mail to all the senior risk experts from the first round.

- **Research process:** An e-mail containing the adjusted ERM implementation model was sent to the senior risk stakeholders. The recipients were given two weeks to respond to the request. The validation template, that was included in the e-mail communication, is included in Addendum F.
- **Statistical analysis:** The results were based on the frequency with which a change was suggested by the senior risk experts; this was documented in Microsoft Office Excel 2016.

4.6.2.4.6 Round 3: Validate the proposed enterprise risk management implementation assessment tool

Round three of the Delphi technique contained an e-mail that was sent to the same senior risk experts. The purpose was to validate the proposed ERM implementation assessment tool, consisting of an ERM implementation status checklist, an ERM implementation status reporting dashboard, a degree of formality assessment, and a degree of formality reporting dashboard with reporting lines and feedback loops to and from the relevant risk committees.

- **Research process:** An e-mail was sent to the senior risk experts to ask for confirmation of the proposed ERM implementation assessment tool. Refer to Addendum G for the questionnaire.

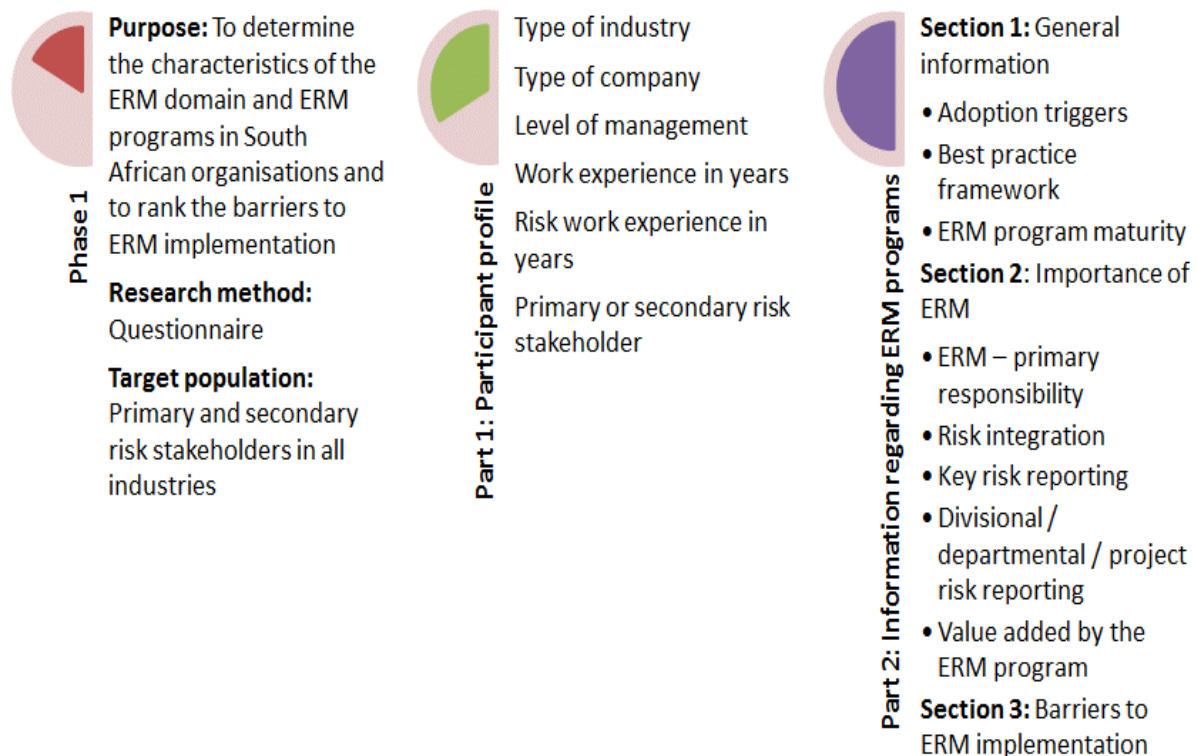
- **Statistical analysis:** The third round of the Delphi technique attempted to reach agreement pertaining to the ERM implementation assessments tool considering the implementation of the variables contained within the adjusted ERM implementation model. The suggestions for improvements and changes were incorporated into the adjusted assessment tool based on the frequency with which it was suggested. This was documented in Microsoft Office Excel 2016.

4.7 CONFIRMATION OF THE PROBLEM STATEMENT

4.7.1 Purpose of the phase

The main objectives of phase 1 were to: (1) obtain information about the South African ERM domain with specific reference to the industry, the type of organisation and the position of the risk practitioner within the organisation, (2) identify and document specific information about the current ERM programs for a sample of South African organisations, and (3) to rank the barriers to ERM implementation within a South African context. The purpose of the aforementioned is to satisfy the requirements for empirical objectives 1 and 2 (refer to Section 1.4.3). Figure 4.7 gives an overview of this part of the study summarising the purpose of the phase, the research method, the target population and the data collected.

Figure 4.7: Overview of phase 1 of the empirical study



Source: Researcher's own compilation.

4.7.2 Data collection

The target population consisted of primary and secondary risk stakeholders at all management levels and employed at any type of organisation and various industries within South Africa. The researcher used non-probability purposive sampling to select a relevant sample from the target population. Consequently, the purposefully selected sample had the following characteristics: (1) A primary or a secondary risk stakeholder from (2) various industries at (3) any management level (4) within a South African organisation.

A questionnaire was sent to the aforementioned sample in order to collect empirical data for this part of the study. The process to improve the validity of the questionnaire and the reliability of the results were as follows: (1) The questionnaire was initially sent to a pilot group, requesting feedback with regards to the appropriateness of the questions, room for misinterpretation and the ease with which it could be completed. (2) The original questionnaire was subsequently adjusted with the suggestions received from the members of the pilot group. (3) The revised questionnaire was then captured in Google Forms and (4) the link to access the questionnaire, was e-mailed to the sample of primary and secondary risk stakeholders (excluding the members of the pilot group). The results of this part of the empirical study will be discussed in the following section.

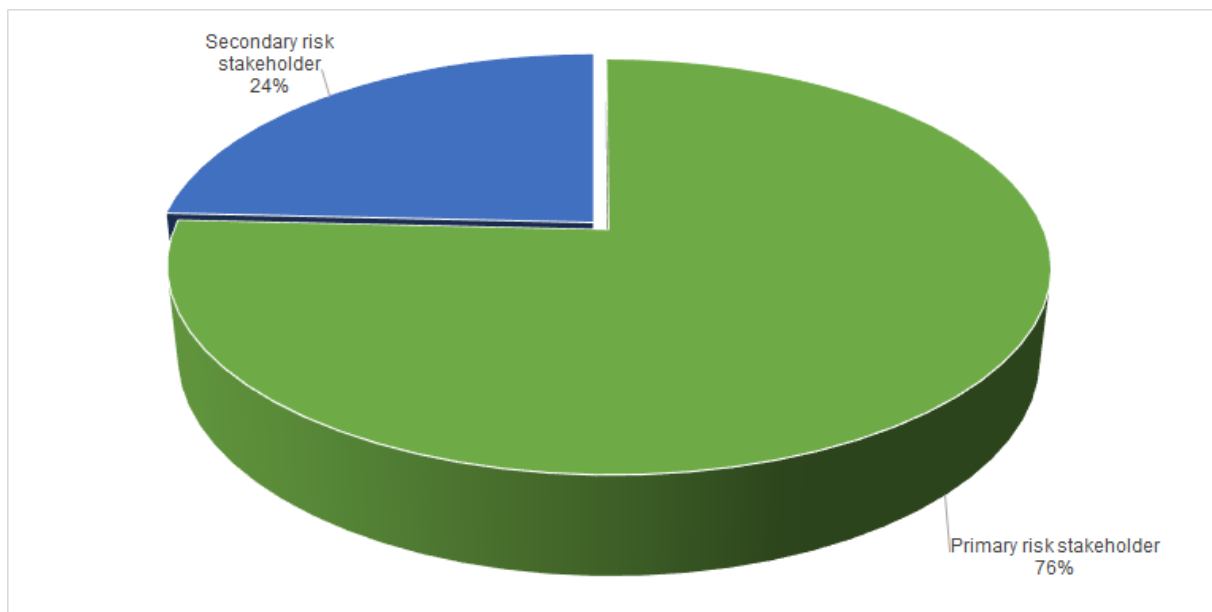
4.7.3 Results

The questionnaire was divided into two parts: (1) the purpose of part one was to gather information concerning the participant, namely the type of industry, type of company, job title, level of management, work experience, risk-related work experience, and primary or secondary risk stakeholder; (2) part two focused on gathering information on the ERM domain and ERM programs in South African organisations and also on ranking the barriers to ERM implementation. This part of the results is included in Chapter 4 as its objective was to confirm the problem statement as it is described in Section 1.3 and also to confirm the motivation for the study as being the fact that several barriers exist to ERM implementation. The outcomes will be discussed in the subsequent sections.

4.7.3.1 Part 1: The participants' profiles

The participants' profiles were evaluated in terms of the criteria for the non-probability purposive sampling and other criteria such as the type of company (refer to Figure 4.11), number of years of work experience (refer to Figure 4.12), and the number of years of risk-related work experience (refer to Figure 4.13). The detailed results pertaining to the figures will be discussed in the following paragraphs.

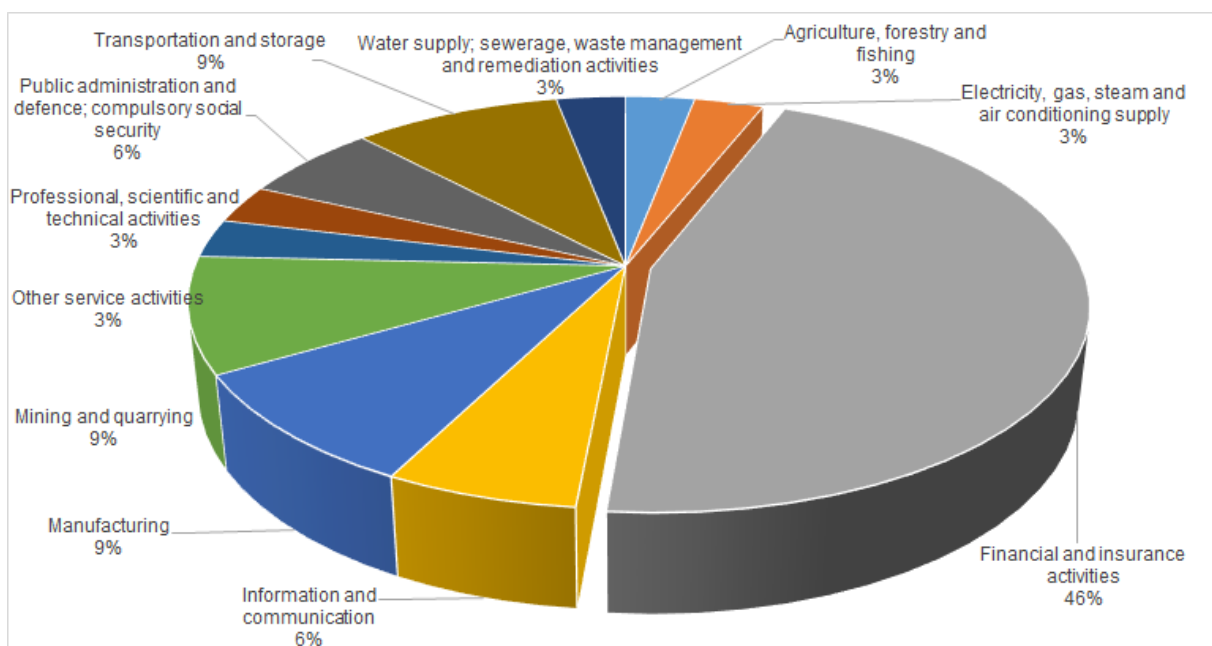
Figure 4.8: Primary or secondary risk stakeholder



Source: Researcher's own compilation.

Figure 4.8 shows that 76% of the participants fulfil a primary risk stakeholder role and 24% a secondary risk stakeholder role. This means that the majority of the participants fulfil a core risk management role and it stands to reason that they, in fact, should have first-hand knowledge and experience with regards to the design, development and the implementation of the ERM programs and barriers to ERM implementation in their organisations.

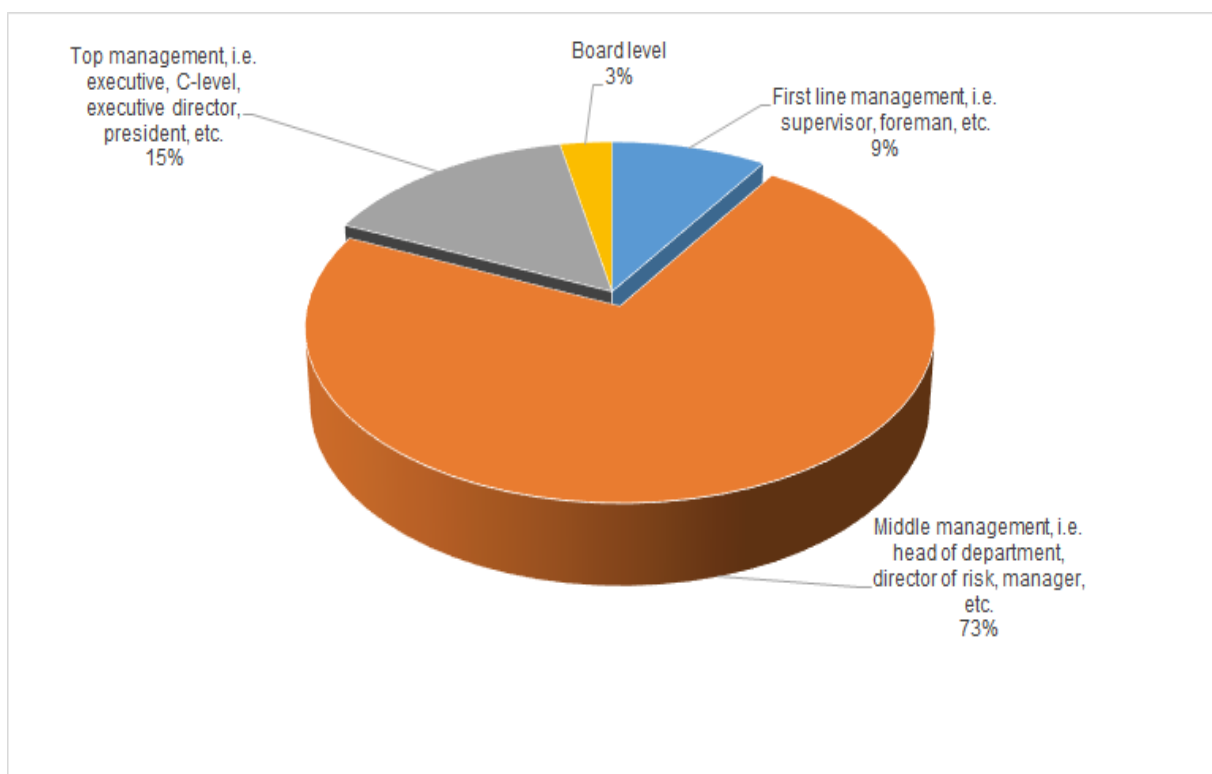
Figure 4.9: Distribution across industries



Source: Researcher's own compilation.

Figure 4.9 illustrates that the participants are employed within 11 different industries in South Africa. The financial and insurance activities industry accounts for 46% of the participants, the transportation and storage industry, the manufacturing industry and the mining and quarrying industry for 9% each, and the public administration and defence, compulsory social security industry and the information and communication industry for 6% each. Agriculture, forestry and fishing; electricity, gas, steam and air conditioning supply; professional, scientific and technical activities; public order and safety activities; and water supply, sewerage water management and remediation industries only contributed 3% each. This translated to 46% participation from the financial sector and 54% participation from the non-financial sector.

Figure 4.10: Level of management

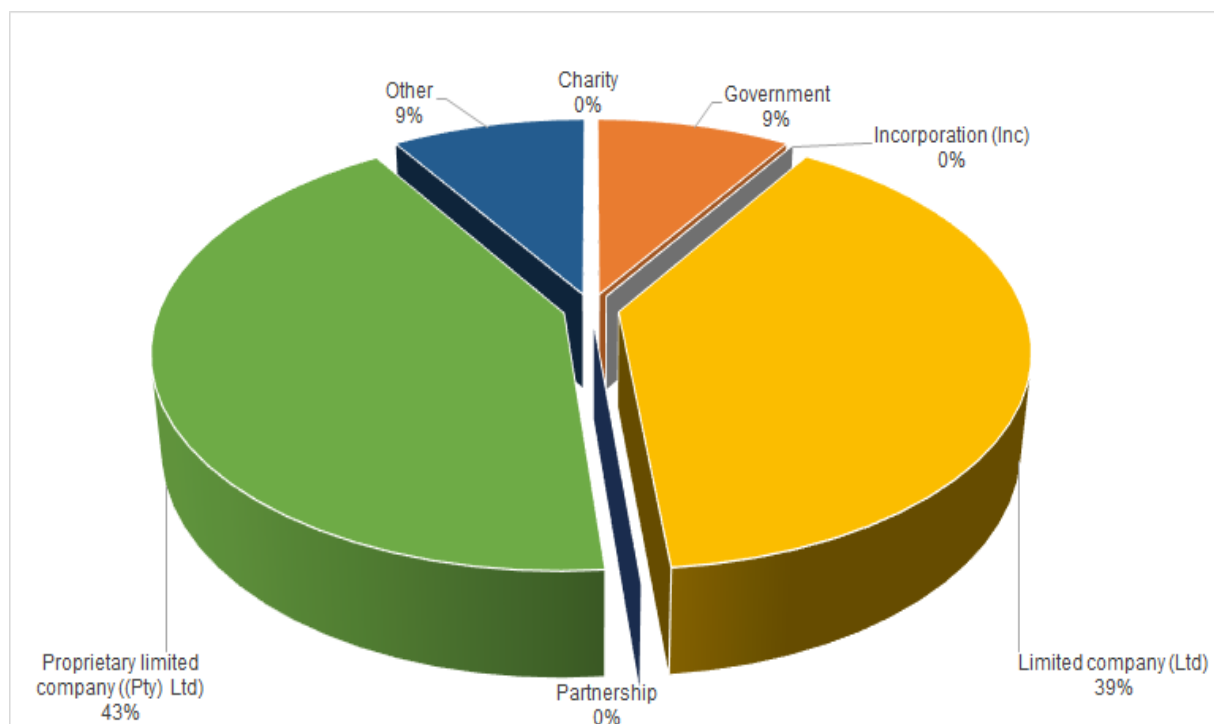


Source: Researcher's own compilation.

Figure 4.10 displays the distribution of participants based on the level of management. 73% form part of middle management (heads of departments, directors of risk or on a manager level); 15% are top management (executives, C-levels, executive directors and presidents); 9% are involved in first line management; and 3% are at board level.

Table 5.5 in Chapter 5 describes Protiviti’s “five lines of defence” risk governance model (Protiviti, 2013). The third line of defence depicts the roles and responsibilities of the independent risk management and compliance functions, which could involve e.g. the ERM department and compliance department. In the context of this study’s validated ERM implementation model, the ERM department is responsible for all or some of the deliverables for the following building blocks: (1) Building block I: Formalise the instruction and get permission; (2) Building block II: Establish the tone of the organisation; (3) Building block III: Design the rules of the game; (4) Building block IV: Develop the risk infrastructure; (5) Building block V: Monitor and review the ERM program; and (6) Building block VI: Continual improvement. The majority of the questionnaire participants (88%) represents the third line of defence (middle- and top management) which underscores the relevance of their opinion.

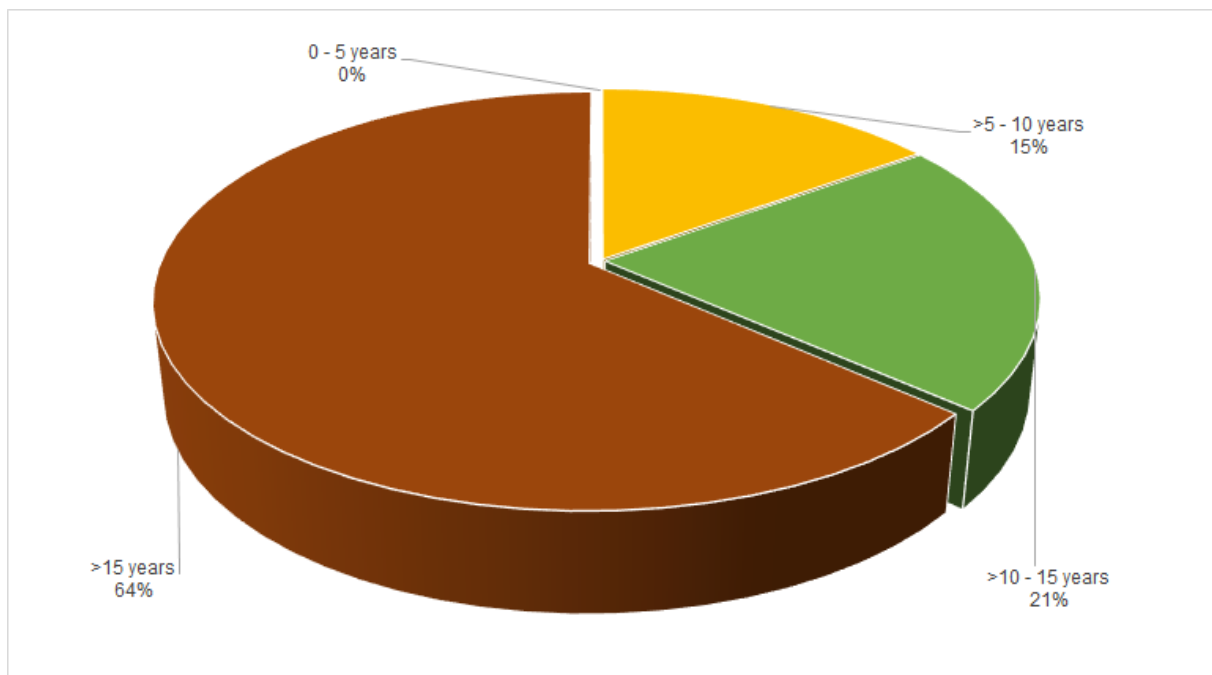
Figure 4.11: Type of company



Source: Researcher’s own compilation.

The biggest portion of the participants (43%) are employed by private companies, 39% by public companies, 9% by government and 9% by other types of organisations. This is reflected in Figure 4.11.

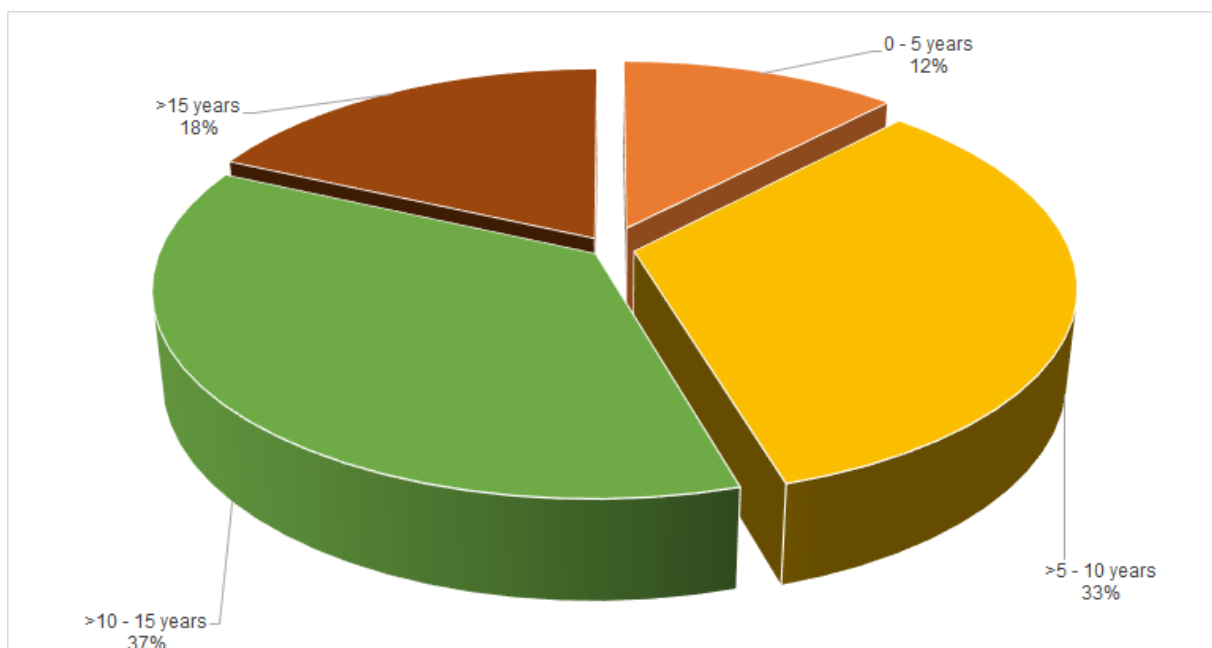
Figure 4.12: Work experience (years)



Source: Researcher's own compilation.

The majority of the participants (64%) have more than 15 years' work experience, 21% have 10–15 years' work experience, and 15% fall in the 5–10-year category as is reflected in Figure 4.12.

Figure 4.13: Risk-related work experience (years)



Source: Researcher's own compilation.

18% of the participants have more than 15 years' risk-related work experience, with 37% falling within the 10–15 year time frame. The number for the 5–10 year category is 33% and 12% in the 0–5 year category. This is illustrated in Figure 4.13.

It can be deduced from the results of part 1 of the questionnaire that the majority of the participants are well versed in the intricacies involved with the design, development and implementation of an ERM program and that they have significant business acumen due to the number of years work experience (refer to Figure 4.12) and risk related experience (refer to Figure 4.13).

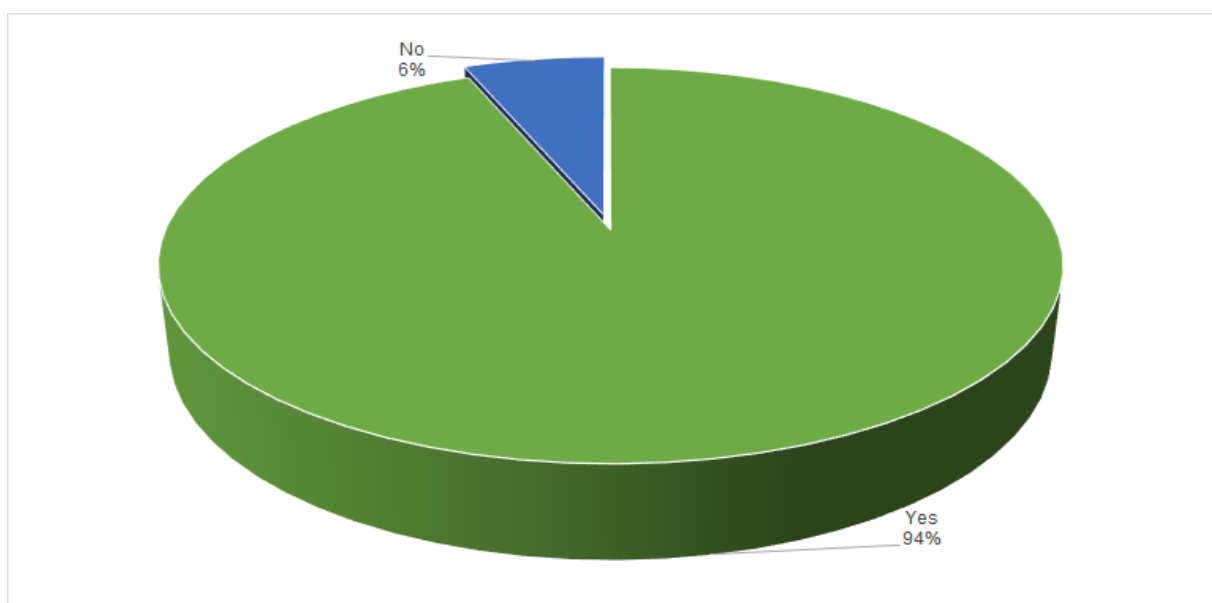
4.7.3.2 Part 2: Enterprise risk management domain and enterprise risk management programs in South African organisations and barriers to enterprise risk management implementation

As stated before, the aim of part two of the questionnaire was to gather information pertaining to the ERM domain (Section 1), the importance of ERM programs in South African organisations (Section 2) and also to rank the barriers to ERM implementation (Section 3).

4.7.3.2.1 Section 1: General information on the enterprise risk management programs

This section collected information about the formalisation of the ERM programs (refer to Figure 4.14), the ERM adoption drivers (refer to Figure 4.15), the best practice frameworks used for ERM program design, development and implementation (refer to Figure 4.16) and the maturity of the ERM program (refer to Figure 4.17).

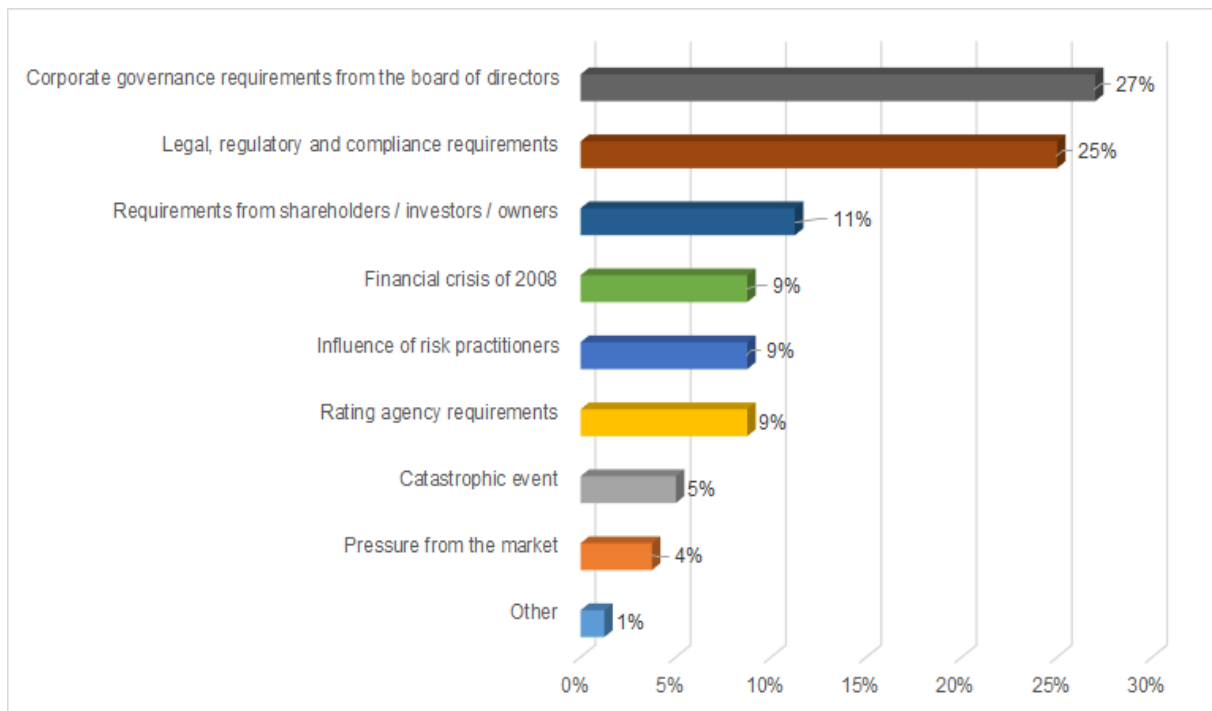
Figure 4.14: Formalised ERM program



Source: Researcher's own compilation.

The main indication by the participants (94%) was that their organisations have implemented a formalised ERM program (refer to Figure 4.14). This affirms the notion that the participants have been involved with some or all elements of the design, development and implementation of their organisation's ERM program.

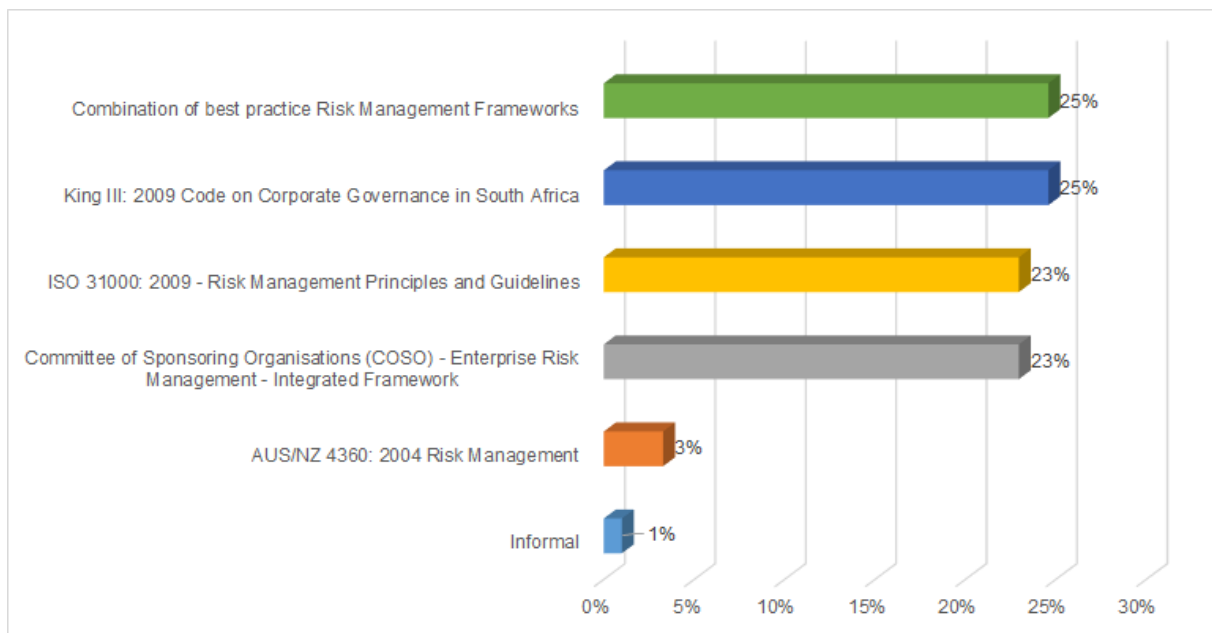
Figure 4.15: ERM adoption drivers



Source: Researcher's own compilation.

In South African organisations, the most important adoption driver is corporate governance requirements from the board of directors (27%), with legal and regulatory compliance requirements as the second highest adoption driver (25%). This is followed by requirements from shareholders/investors/owners (11%), financial crisis of 2008 (9%), influence by risk practitioners (9%), rating agency requirements (9%), catastrophic events (5%), and pressure from the market (4%) as illustrated in Figure 4.15. The first two adoption drivers indicate that the design, development, and implementation of an ERM program is motivated by a compliance mind-set rather than a business value-add mind-set. As such, it can be argued that this contributes to the barriers to ERM implementation.

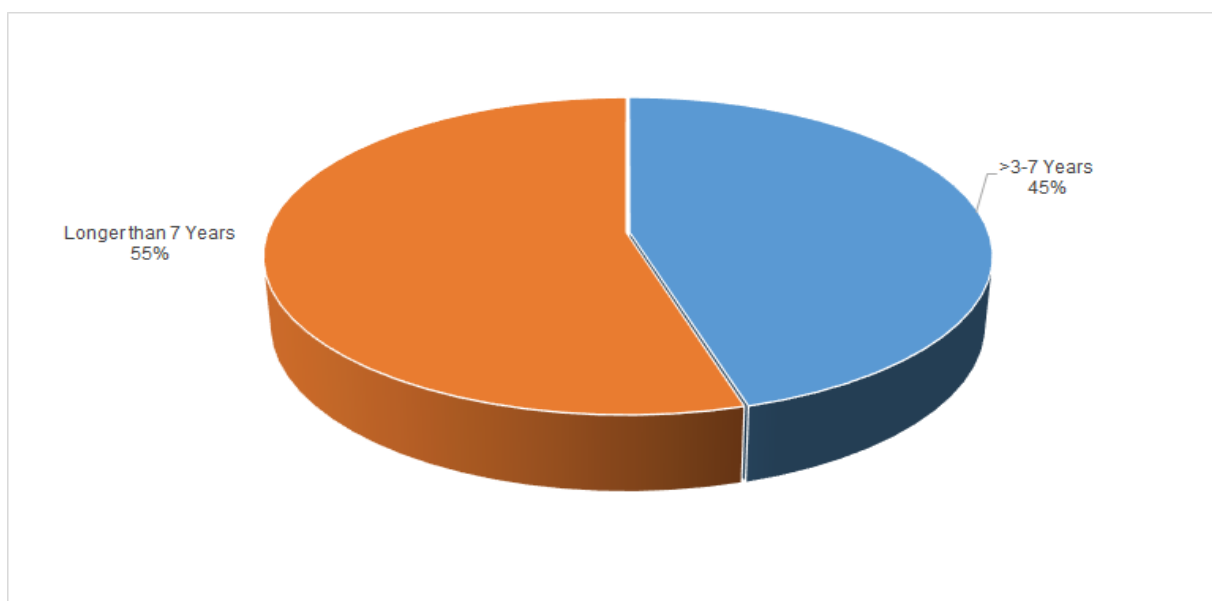
Figure 4.16: ERM program: best practice framework



Source: Researcher's own compilation.

The majority of the participants indicated that their organisations' ERM programs are based on a combination of best practice risk management frameworks (25%), whereas an equal percentage of 23% is based on ISO 31000 and the COSO risk management best practice frameworks. 24% is based on the King III code of governance. See Figure 4.16 for a graphic representation. The decision by the researcher to use ISO 31000 and King III as the basis for the best practise requirements in the conceptual ERM implementation model is supported by the results of this part of the questionnaire.

Figure 4.17: Maturity of ERM program



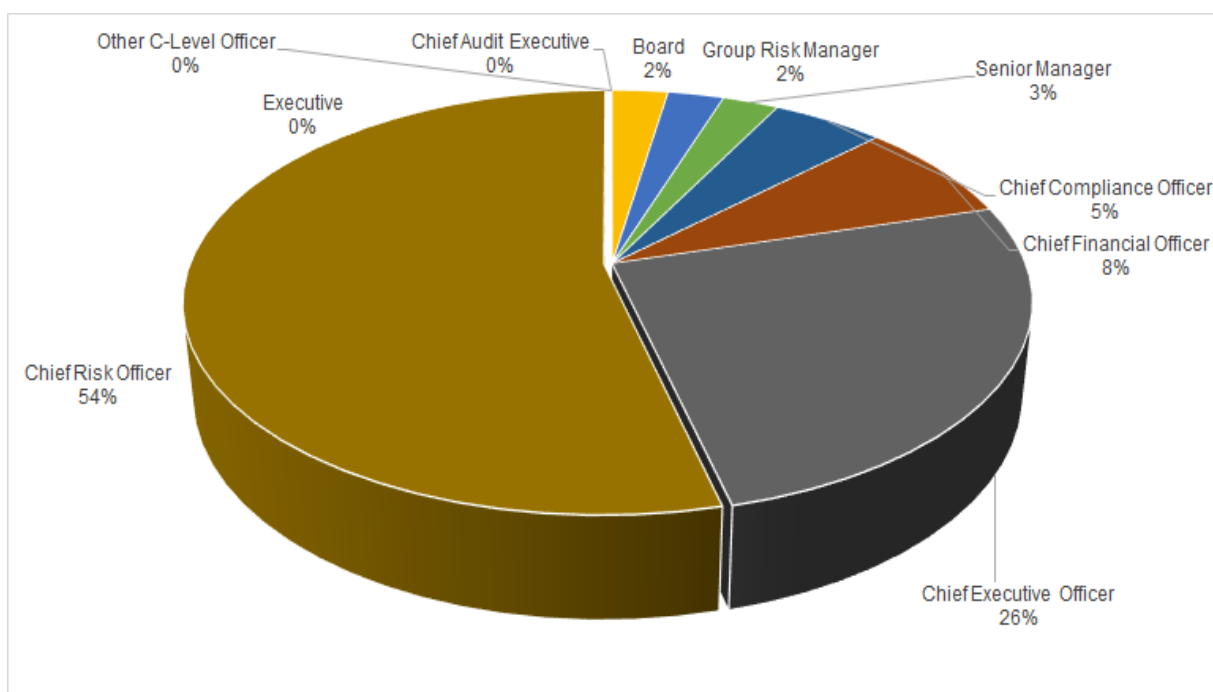
Source: Researcher's own compilation.

The biggest part of the ERM programs (55%) have been implemented for more than 7 years and 45% for 3–7 years (refer to Figure 4.17). This underscores the relevance and the validity of the results gathered by the questionnaire.

4.7.3.2.2 Section 2: Importance of enterprise risk management in the organisation

The purpose of section two was to establish the importance of ERM in South African organisations by considering the ERM program sponsor (refer to Figure 4.18), the level of risk integration into operations (refer to Figure 4.19), the reporting committees for key risks (refer to Figure 4.20) and divisional/departmental/project risks (refer to Figure 4.21), and the perceived value-added from the ERM program (refer to Table 4.10).

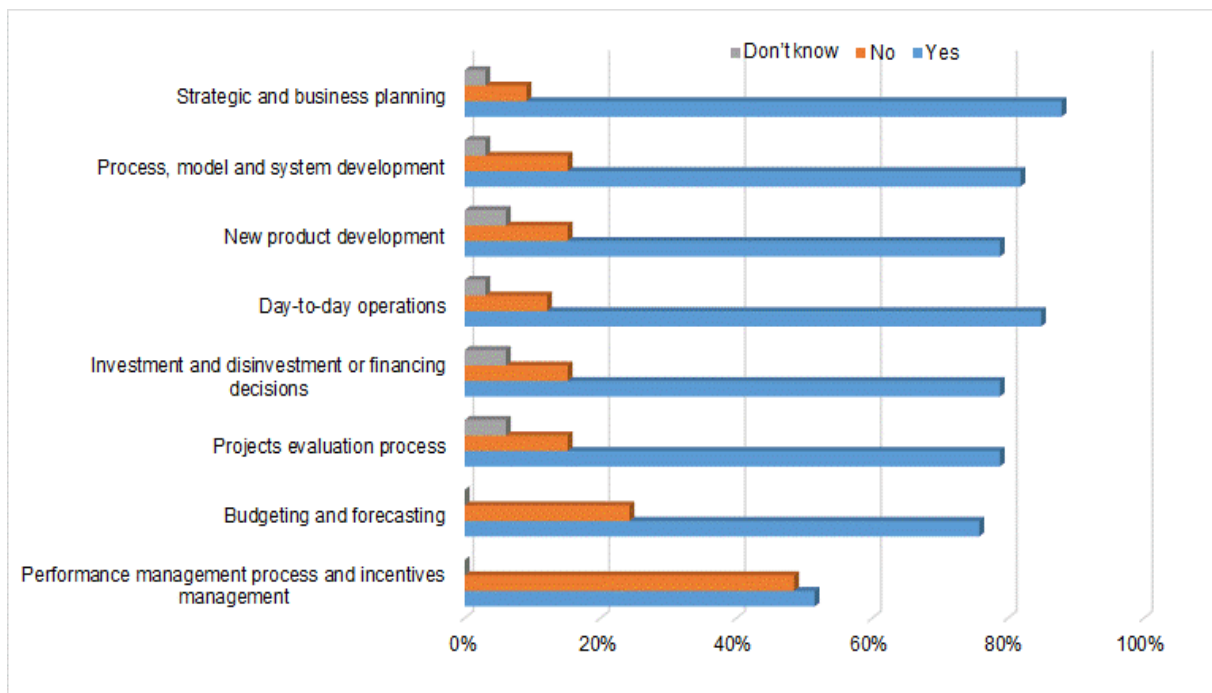
Figure 4.18: ERM program sponsor



Source: Researcher's own compilation.

The chief risk officer (CRO) is the ERM program sponsor for 54% of the participants' organisations and the chief executive officer for 26% (refer to Figure 4.18). Section 4.4.3 of the King III Code on Governance (IODSA, 2009) describes the attributes of the chief risk officer (CRO) for any type of organisation within all industries. It states that the CRO should be a suitably experienced person who should have access and interact regularly on strategic matters with the board and/or appropriate board committees and executive management. Arguably, this result indicates compliance with the King III requirements and the elevation of risk management to a strategic level within South African organisations.

Figure 4.19: ERM integration into the organisation



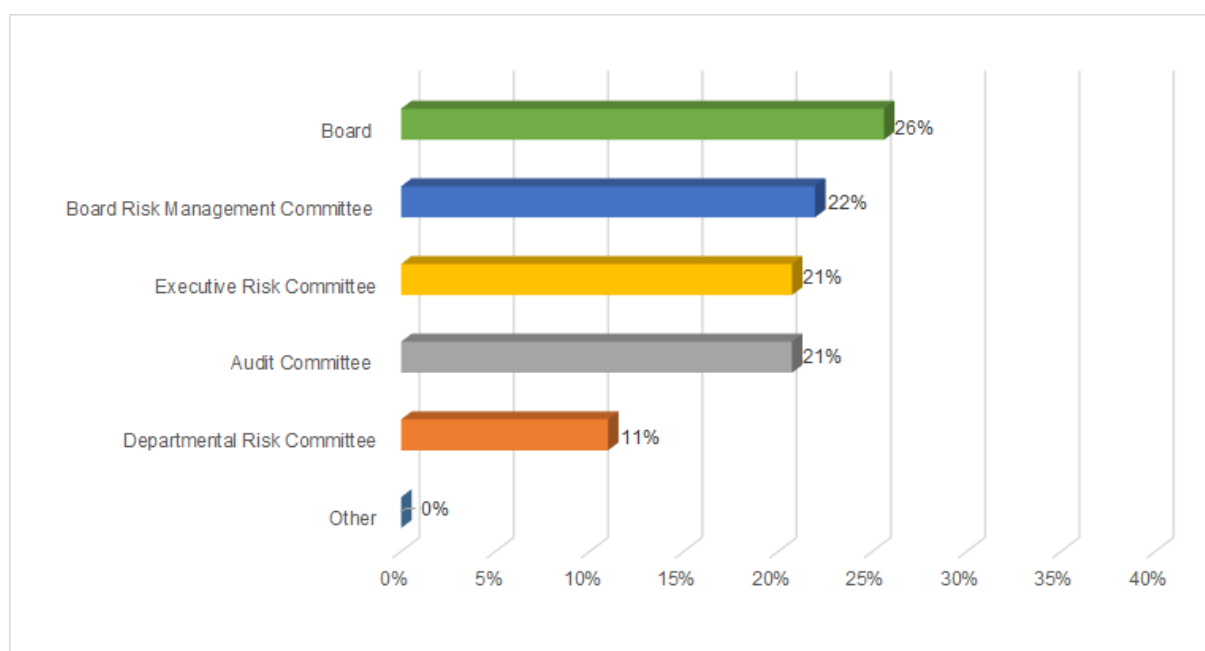
Source: Researcher's own compilation.

The majority of the participants indicated according to a 'yes', 'no', 'I don't know' measurement scale that risk management is integrated into the following operational processes (refer to Figure 4.19):

- Budgeting and forecasting;
- Projects evaluation process;
- Investment and disinvestment or financing decisions;
- Day-to-day operations;
- New product development;
- Process, model and system development; and
- Strategic and business planning.

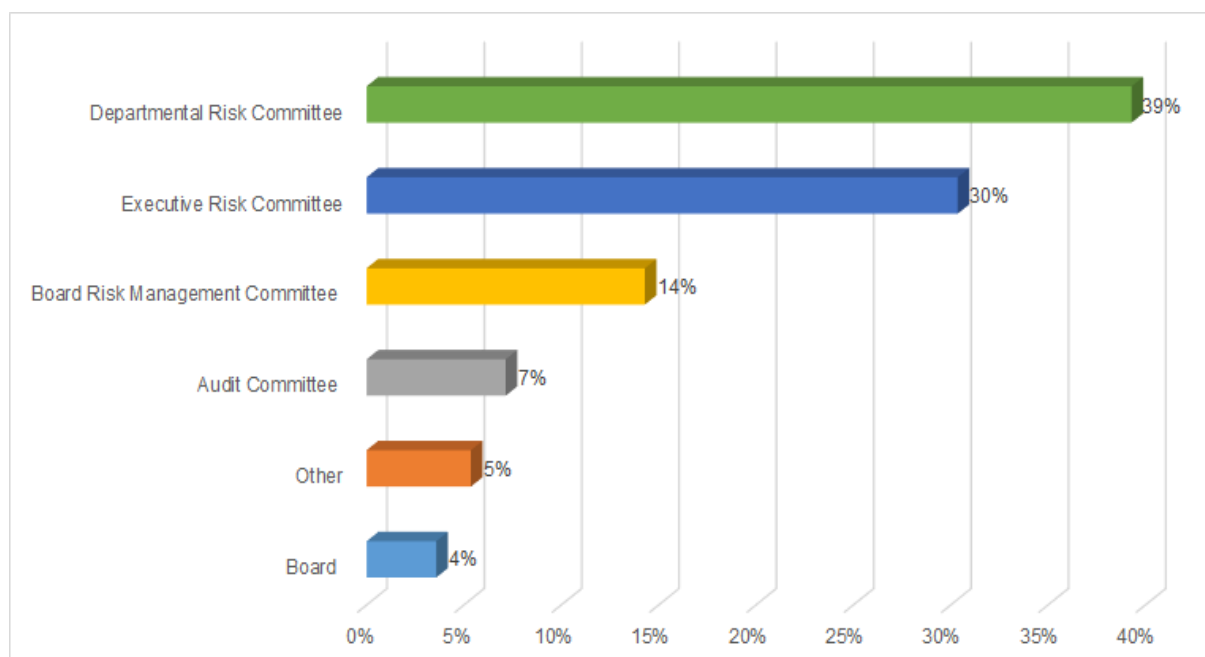
This is a risk awareness indicator that could reflect the consideration of risk at all levels of the decision making process.

Figure 4.20: Key risk reporting



Source: Researcher's own compilation.

Figure 4.21: Bottom-up risk reporting



Source: Researcher's own compilation.

According to Figure 4.20, the key risks are reported to either the board (26%), the board risk management committee (22%), the executive risk committee (21%), or the departmental risk committee (21%). Both ISO 31000 (ISO, 2009b) and King III (IODSA, 2009) recommend that for a risk management system to be effective the board has to accept responsibility for risk oversight and management should be responsible for risk management. Risk oversight represents the practices used by the board to determine that the organisation has a robust process for identifying, prioritising, managing, and monitoring its key risks. In contrast, risk management represents management's role in the identification, assessment, and prioritisation of risks followed by coordinated and economical application of resources to minimise, monitor and control the probability and/or impact of unfortunate events (Hubbard, 2009). Risk oversight and risk management involves reporting of key risks to the relevant committees. The results communicate that the board and management in South African organisations accepts this responsibility.

The divisional/departmental/project risks are reported to the departmental risk committee (39%), executive risk committee (30%), or the board risk management committee (14%) (refer to Figure 4.21). The perceived value added by an ERM program is illustrated in Table 4.10.

Table 4.10: ERM program: perceived value added

Value added	Distribution (%)
To enhance risk-based decisions	18%
To align risk appetite and strategy	18%
To avoid and/or mitigate risks	17%
To reduce operational surprises and losses	16%
To increase risk awareness	16%
To eliminate silos, i.e. identifying and managing risks across the enterprise	10%
To improve resource allocation	6%

Source: Researcher's own compilation.

The participants indicated that the most important perceived benefits from their ERM programs are (1) to enhance risk-based decisions (18%) and (2) to align risk appetite and strategy (18%). These results may reflect that ERM has become more important to the board and senior management in South African organisations.

4.7.3.2.3 Section 3: Barriers to enterprise risk management implementation

The purpose of Section 3 of the phase 1 questionnaire was to prioritise the barriers to ERM implementation that were identified during the systematic literature review, in order to guide the researcher during the development of the conceptual ERM implementation model.

Figure 4.22: Barriers to ERM implementation



Source: Researcher's own compilation.

According to Figure 4.22, the most important barrier is lack of board or C-level senior executive leadership. This is followed by role confusion and little or no risk monitoring. Insufficient resources, lack of perceived value added by the ERM program and competing priorities between the risk owner's operational- (day-to-day) and risk responsibilities were ranked at number three. The fourth barrier was that risk management criteria are not standardised. Difficult to identify risk owners, badly designed ERM programs, and incentives do not reward making risk-based decisions were ranked at number 5.

The researcher considered the elimination or reduction of these barriers to ERM implementation during the conceptualisation of the ERM implementation model and assessment tool.

4.8 SUMMARY

The aim of Chapter 4 was to outline the research design and method used to support the problem statement, describe the ERM domain in a South African context, and to validate this conceptual ERM implementation model as well as the ERM implementation assessment tool. The chapter started with a review of the problem statement and research objectives. A detailed discussion of the research design and method included an overview of the systematic literature review and the empirical study. The most important aspects of the empirical study were discussed according to the different phases of the study, through addressing the target population, sampling method, sampling size, statistical analysis, and the research techniques utilised in each phase. The chapter concluded with the results of phase 1 of the empirical portion of the study because data was collected via a questionnaire to represent the different elements of the ERM domain in a South African context and it also confirmed the problem statement by ranking the barriers to ERM implementation.

Chapter 5 will focus on the different elements of the conceptual ERM implementation models and the proposed ERM implementation assessment tool.