UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Gordon Institute of Business Science
University of Pretoria

Exploring the interplay between corporate innovation, risk management and internal governance

Premal Bhima

Student number: 15388698

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

7 November 2016

Abstract

Business leaders no longer question whether it is necessary to innovate but rather, which activities to pursue. While innovation is an imperative for organisations, it is inextricably linked to risk-taking and is compounded by high levels of innovation failure rates. Therefore, there is a clear requirement to understand the interplay that risk management and governance have in shaping the design of the innovation process.

The aim of this research is to explore the relationship between corporate innovation management, internal governance and risk management, and to understand the dynamics between these constructs. The intention is that this contributes to the effectiveness of organisations when undertaking innovation activities by using adequate risk management and governance controls.

An exploratory research method was adopted based on an inductive reasoning approach to gain insight into this interplay. Thirteen semi-structured, in-depth interviews were conducted with senior experts across six industries. The respondents had high levels of seniority, ranging from C-suite executives, managing directors and other executives, to senior managers. Thematic analysis was used to analyse the data.

A conceptual integrated innovation management model was carefully formulated based on the findings to embed risk management and governance within the iterative innovation process, which is influenced by the contextual attributes. The results found that risk management and governance remain key tools to manage innovation and become more significant as the innovation evolves. This research will assist organisations in managing innovation uncertainty using adequate risk management and governance controls for improved sustainability.

Keywords

Innovation, internal governance, risk management.

Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other university. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

Premal Bhima	7 November 2016
	Date

Contents

List of Tables

List of Figures

Chapter 1: Introduction to Research Problem

1.1 Description of the problem and background

Innovation is an important driver of growth (Becker-Blease, 2011; Haustein, Luther, & Schuster, 2014; Yi, Liu, He, & Li, 2012) and virtually all organisations pursue this in order to remain competitive in an ever-changing environment (Merriman & Nam, 2015; Nagano, Stefanovitz, & Vick, 2014; Shapiro, Tang, Wang, & Zhang, 2015). However on the flipside, innovation is about taking risks and these are inextricably linked to each other (Flemig, Osborne, & Kinder, 2016; Osborne & Flemig, 2015). Corporate leaders no longer question whether it is necessary to innovate but rather, which initiatives to pursue. This is important as high levels of innovation failure rates, ranging from 50% to 90%, have been well documented in innovation literature (Heindenreich & Spieth, 2013; Merriman & Nam, 2015). Based on business literature (for example, the Institute of Risk Management in South Africa in 2015) and tabloid articles (for example, by the Business Day in 2016), there is a lack of innovation in South Africa despite it being critical to remain competitive in a global context (IRMSA, 2015; Kahn, 2016). As a result, South Africa risks being overtaken by other countries

Innovation is recognised as an imperative for companies to pursue in order to survive in an increasingly competitive environment (Merriman & Nam, 2015). However, innovation means that risks need to be taken to remain relevant. The identification, assessment and management of these risks is essential (Vargas-Hernández, 2011). This tension between innovation, risk management and control needs to be managed effectively. This is because innovation is associated with risks. This view is discussed by Merton (2013), who stated that:

> "New products and services are created to enable people to do tasks better than they previously could, or things that they couldn't before. But innovations also carry risks. Just how risky an innovation proves to be, depends in great measure on the choices people make in using it" (p. 50).

From an academic perspective, a vast amount of attention has been given to innovation over the past decade, though innovation has generally been theorised as the end goal of a linear process and has only recently been recognised as a complex, dynamic and non-sequential process (Poutanen, Soliman, & Ståhle, 2016). A limitation

to much of the current research is that it does not consider how institutions and organisational contexts shape the design of the innovation process and innovative choices through corporate governance and risk management (Nagano et al., 2014; Sapra, Subramanian, & Subramanian, 2014).

A key challenge for innovation is managing uncertainty (Teece, Peteraf, & Leih, 2016). While incentives provided through governance and risk mechanisms affect innovation, the research is still fairly nascent from an empirical and theoretical standpoint (Sapra et al., 2014). Furthermore, internal governance is seen as a wealth-creation process in pursuit of innovation and growth, and fostering and cultivating strong internal corporate relationships and linkages (Prahalad & Oosterveld, 1999).

There is also limited research on the relationship between the process and activities of innovation and corporate governance, as the key theories of corporate governance do not integrate in a systematic fashion with the economics of innovations (Miozzo & Dewick, 2002; O'Sullivan, 2000). Furthermore, research on innovation has largely ignored issues related to corporate control. This is important because governance deals with the manner in which organisations are controlled and run, and it also is a determinant of innovation activities that affects its outcomes (Sapra et al., 2014; Shapiro et al., 2015). These limitations were noted a few years ago, and more recently researchers have stated that there has been limited research on the relationship between innovation and broader aspects of corporate governance, especially in emerging markets (Shapiro et al., 2015). Given that South Africa is an emerging economy, innovation is of critical importance in these markets and the institutional environment could better explain the strategies of an organisation in this context (Shapiro et al., 2015; Yi et al., 2012). It is therefore appropriate for this research to address these shortcomings by delving into the broader aspects and explore the interplay between governance and innovation.

Several different aspects of the internal innovation processes in organisations have been overlooked in terms of the contextual attributes of structures, resources and innovation culture that influence the intensity of innovation obstacles. The common obstacles of innovation among others are categorised as finance and risk (such as the perception of risk in innovation); knowledge and skills within the organisation (such as resistance to change or lack of skilled resources); external knowledge and skills; and regulations (Mohnen & Roller, 2005). While companies may have sufficient formal systems for managing innovative ideas, the vast number of people with different

viewpoints involved in innovation can create processes that are both bureaucratic and risk-averse and ultimately constrain implementation (Hansen & Birkinshaw, 2007).

There has been an ongoing debate of the role that corporate control has in fostering innovation (Sapra et al., 2014). Miozzo and Dewick (2002) cited that research on innovation has largely ignored issues of corporate structure and strategy, even though the organisational context includes factors which shape the innovative ability of an institution. They further contend that in-depth exploration is required between the process of innovation and how certain contextual attributes, such as management, ownership, investment and organisational structures, contribute to its success. Becker-Blease (2011) argued that existing literature that investigated the relationship between governance and innovation suffered from indirect accounts of innovation efforts such as measures like capital expenditure or research and development costs. More recently, the literature has recognised that a clear conceptualisation of the relevance of structures, processes and capabilities for governance is still lacking (Urhahn & Spieth, 2014). While there has been further research completed (e.g. Shapiro et al., 2015), there is still an ongoing debate and therefore an in-depth exploratory study should be performed to address these limitations.

1.2 Research aim and purpose

The aim of this research is to understand the dynamics between innovation, risk management and governance, and to explore the contextual attributes that influence the relationship between corporate innovation management, internal governance and risk management. These contextual attributes include internal contextual factors (such as management and organisational structures), and common innovation obstacles (such as perceived risks and uncertainty, and resistance to change, resources and organisational slack). From an intra-organisational perspective, the study will outline the management challenges and tensions faced when innovating, without neglecting the contextual attributes that create interplay between innovation, risk management and internal governance.

Given that this research paper will consider the dynamics between the primary constructs of innovation, risk management and internal governance across multiple industries, detailed analysis of the interplay for a particular organisation or industry has not been considered. Furthermore, the research findings do not aim to identify the

specific nuances or characteristics that are relevant to a particular industry but rather, intend to collate results that this can be broadly applied.

The purpose of this research is to contribute to the effectiveness of organisations when undertaking innovation activities by using adequate risk management and governance controls. This may assist in reducing the high failure rates associated with innovation initiatives, and provide benefits through appropriate risk management and internal governance.

In contributing to the effectiveness of organisations, the starting point is to understand how risk management and governance influence the innovation process. Inductive reasoning, which is generally exploratory and open-ended, was used to gain an understanding of the research context (Saunders & Lewis, 2012). Therefore, the research began by reviewing the literature on innovation, risk management and governance to gain a basis of understanding to determine the interplay between corporate innovation, risk management and internal governance, as well as to assess how the contextual attributes of structures, culture and resources influence the innovation process. This represents the first research question in this study.

The second research question will seek to assist in managing innovation uncertainty through utilising risk management and internal governance. Risk control systems, risk management and governance processes must be conducive to innovation efforts as guided by perceptions towards risk.

A further tension is the balance and resolve often conflicting stakeholder interests (Driessen & Hillebrand, 2013). The third research question will therefore identify how stakeholder management integrates with management of innovation by looking at decision-making, evaluation ability and stakeholder implications.

Finally, after conducting thematic analysis of the findings from the research questions gathered from in-depth, semi-structured interviews with industry experts, an *ex post facto* model was formulated and developed in Chapter 6 to collate the results considering the discussions to understand the interplay between the primary constructs. The integrated innovation management model with risk management and governance embedded in the process is presented in Chapter 7. The primary research data was analysed through a coding process to identify themes of relevance to the

research topic and gain insights that would encourage a collaborative partnership between the risk functions and business that assists with innovation.

1.3 Research motivation

From a business perspective, recent articles have discussed that risk should be harnessed to seek new opportunities and aid innovation (Deloitte, 2016; The Economist Intelligence Unit, 2014). While innovation is about taking risks, it can go hand-in-hand with risk management (Flemig et al., 2016; Osborne & Flemig, 2015). Risk management can bring a level of discipline to the innovation process. In addition, risk management has become more prominent in business thinking as a result of volatile markets and growing global competition (Valsamakis, Vivian, & du Toit, 2010). However, responsible risk management could be argued to require a considerate approach to innovation (Alon, Koetzier, & Culp, 2013). From an academic perspective, the research is relatively nascent and aims to address some limitations mentioned in section 1.1 by exploring the interplay between innovation, risk management and governance.

From a personal perspective, this research study is motivated by the researcher's work background. The researcher has worked in roles of product development and risk management. In the former role, this required bringing new product innovations to the market, while in the latter role, a governance function was performed by using principles of enterprise risk management. Furthermore, risk-taking is required in innovation to remain relevant, though in itself, effective risk management is crucial.

1.4 Scope of the research

Innovation, in the broadest sense, historically comes from Latin origins (*innovare)* and means "to make something new" (Tidd & Bessant, 2009, p. 16). However, for the purposes of this research study, innovation is understood to mean the process of implementing ideas into practical use, and involves organisational learning with a certain degree of uncertainty (Tidd & Bessant, 2009). This research does not intend to show detailed analyses by the different types of innovation.

Risk management is also defined broadly and attempts to refrain from a definition that has negative associated connotations, by considering the "problems and opportunities

that arise as a result of an outcome not being as expected" through the identification, assessment, management, interventions and evaluation of risk (Sweeting, 2011, p. 1-2). Therefore, this research does not intend to show detailed analysis by the different types of risks faced by an organisation.

Corporate governance is viewed as a subset of risk management and refers to the "relationships among the management of a corporation, its board, its shareholders and other relevant stakeholders and also to the specific responsibilities of board of directors and management to ensure and maintain these relationships" (Valsamakis et al., 2010, p. 80). It will also be bound by the internal perspective of the organisation and therefore this study will not consider the external environment. Rather, it will assess risk management from an internal governance perspective (i.e. internal governance) and utilise stakeholder theory as a lens to consider the impact that multiple stakeholders potentially have when implementing an innovation initiative.

Chapter 2: Literature Review

2.1 Introduction

On the one hand, innovation is recognised as a key driver for growth in a competitive environment (Becker-Blease, 2011; Bisbe & Malagueño, 2015; Yi et al., 2012) and represents the opportunity to business. On the other hand, it is inextricably linked to risk-taking (Flemig et al., 2016; Osborne & Flemig, 2015). Yet, innovation and risk management often do not naturally seem to go together.

Although a key challenge for innovation is managing uncertainty, which is affected by the governance and risk mechanisms, the research is still fairly nascent from an empirical and theoretical standpoint (Sapra et al., 2014). A further limitation is that it does not consider how contextual attributes shape the design of the innovation process and innovative choices through corporate governance and risk management (Nagano et al., 2014; Sapra et al., 2014). The main objective of this research is to better understand the dynamics between innovation, risk management and governance.

This chapter comprises three sections. The first section provides a literature review of innovation. It highlights an integrated innovation model by focussing on evaluation and implementation of the innovation process, as these effectively link risk management and internal governance with innovation. Within the first section, the contextual attributes and common obstacles to innovation are explored to determine the extent to which these affect the innovation process. The second section provides a literature review of risk management and corporate governance, with a focus on an intra-organisational perspective. It also provides an overview of different control systems that could be used in the evaluation and risk management of the innovation process. The last section links the first and second sections to explore the interplay between innovation, risk management and internal governance.

2.2 Innovation

Innovation can be viewed as the process of advancement of a novel idea or general knowledge into usable services or products (new or refined) that will have potential future benefit in order to gain a competitive advantage (Becker-Blease, 2011; Nagano et al., 2014). It is a process central to improving the ongoing performance of successful

economies where productive resources are utilised and developed to enhance the quality or lower the cost of a service or product (O'Sullivan, 2000). However, for the purposes of this research study, innovation has been broadly defined to allow for different perspectives and viewpoints on the topic. It is understood to mean the process of implementing ideas into practical use, and involves organisational learning with a certain degree of uncertainty (Tidd & Bessant, 2009).

There are often conflicting tensions and disparate agendas that need to be prioritised and managed. This is because innovation encourages risk-taking and results in greater uncertainty, though internal governance seeks to reduce uncertainty through control mechanisms (Wu, 2008). Furthermore, leaders need to balance and resolve conflicting stakeholder interests (Driessen & Hillebrand, 2013). In order to manage inconsistencies and competing tensions imposed by conflicting innovation paths, organisations jointly pursue the exploitation of its competencies and the exploration of new opportunities (Andriopoulos & Lewis, 2009; Raisch, Birkinshaw, Probst, & Tushman, 2009). This ambidextrous nature provides organisations with the capacity to address conflicting demands (Birkinshaw, 2016). Given that management control systems play a key role in innovation management to balance competing priorities rather than compromise on them, it requires a complex system with greater diversity in terms of measures and controls (Bedford, 2015).

Innovation is also about taking risks (Flemig et al., 2016; Osborne & Flemig, 2015) and this could be seen as the other side of the same coin. Organisations in South Africa have the capacity to innovate (Manzini, 2012). There are several examples of organisations in South Africa, such as Sasol and Discovery, which are known for their innovative ability. As one of the many examples, Sasol has achieved technological innovation to create value (Manzini, 2012). As another example, Discovery's innovation has been about achieving prudence and is generally quite risk averse as an entity – in other words, prudence and innovation are key values in its positioning (Beswick & Urban, 2012). It recognises that "rewards and risk taking go hand in hand" (Gore, 2015). In its inception, it used risk rating as an effective management tool within medical schemes, and used actuarial risk management principles to eliminate cross-subsidies between customers in the scheme. This allowed the organisation to price accurately, meet customers' needs, and control expenses more effectively. Adrian Gore (the founder and chief executive officer of Discovery) argued that he was risk averse and did not encourage risk-taking by stating "I want the innovation to be so

good there is no risk" (Beswick & Urban, 2012). This is used as an example to highlight that risk awareness can be well embedded with risk-taking.

2.2.1 Innovation uncertainty

Uncertainty and innovation management are closely linked to each other, where initiatives run more smoothly when uncertainties are better managed (Salerno, Gomes, Da Silva, Bagno, & Freitas, 2015). In an increasingly turbulent global environment, the ability to successfully manage uncertainty by being flexible and agile is crucial in contrast to the ability to manage risk, which has different requirements associated with typically known outcomes (Teece et al., 2016). Nevertheless, uncertainty and risk are interrelated, as there is a perception that uncertainty leads to risk because if the outcome is uncertain, there would be risk (Valsamakis et al., 2010).

The modern innovation process should not be regarded as an isolated incident (Nagano et al., 2014). Rather, it should be seen as a learning process where the returns generated from these initiatives are highly uncertain and cannot be determined in advance. However, O'Sullivan (2000) described two different types of uncertainty that organisations face when innovating: (1) productive uncertainty, where the learning process is potentially unsuccessful and the organisation has to the make an investment in resources before they can generate returns through the development of their productive competencies; and (2) competitive uncertainty, where an organisation is unsuccessful in gaining a competitive advantage or generating greater returns (even if the organisation is successful at enhancing their service or product) because a more successful alternative innovation approach is pursued by a competitor. It was contended that innovation spurred by uncertainty can only be managed by a culture that is receptive to change (Osborne & Flemig, 2015). In a more connected global economy where innovation change is being experienced, it has become a requirement to proactively manage this increasing uncertainty (Teece et al., 2016). This research will focus more on the internal aspects (i.e. productive uncertainty) that are generally within the ambit of control of the organisation.

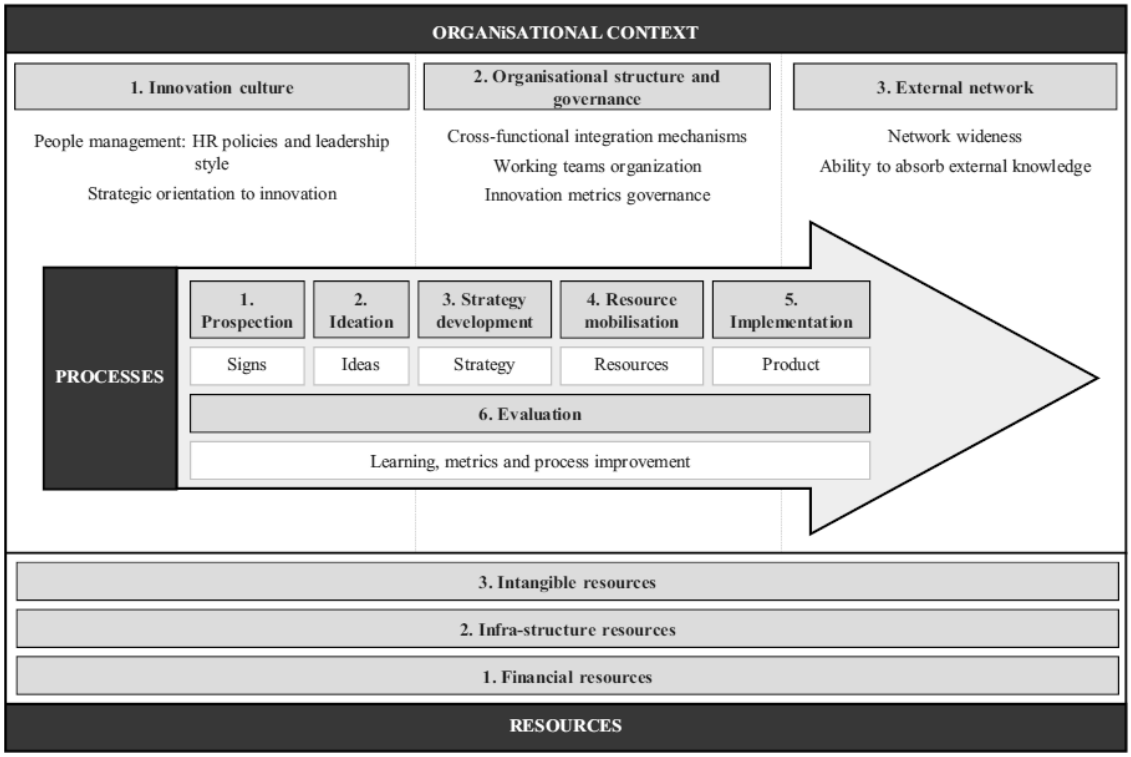
2.2.2 Integrated innovation management model

Innovation is argued to be a complex process that is influenced by a multitude of factors that are often interrelated (Mohnen & Roller, 2005). Innovation requires a management system that encourages experimentation and knowledge across multiple

paths but should also encompass complex and discrete characteristics such as institutions, regulations, legal policies, customs, cooperative opportunities, and incentives (Mohnen & Roller, 2005; Robeson & O'Connor, 2007). Furthermore, the systems must take into consideration the organisation's structure, decision-making processes, innovation culture, governance, leadership, learning and development of skills and talent, methods and processes, and evaluation metrics (O'Connor & Ayers, 2005).

Nagano et al. (2014) proposed an integrated model for innovation management (shown in Figure 1) as a theoretical reference with the main dimensions being: (1) processes, (2) organisational context, and (3) resources.

Figure 1: Integrated innovation management model



Source: Nagano et al. (2014)

2.2.2.1 Process

The typical process structure in the integrated model is based on the stage-gate approach to innovation. However, a shortcoming with the process is that it is generally not linear or sequential with interactions between distinctive phases and is more complex, iterative and involves multiple stakeholders, and therefore the stage-gate approach to innovation has largely become redundant and obsolete (Berglund, 2007;

Poutanen et al., 2016). A further critique identified with this approach is that it is predominantly orientated towards process factors. Other organisational factors that affect innovation performance need to be taken into account (Vargas-Hernández, 2011). A few decades ago, Takeuchi and Nonaka (1986) argued that the innovation process must be managed differently and must change from a linear approach to a holistic, integrated approach. In order to remain competitive in a fast-paced environment, the sequential method to innovation is not sufficient. While significant progress has been made with regard to the process over recent years, Cooper (2009) highlighted that an integrated, agile approach is required to foster relationships between different business functions and exhibit the right behaviour; development of decision-making processes and metrics with a focus on effective governance was required; and roles and responsibilities needed to be clearly defined. However, the process is predominantly characterised in literature by a linear sequence chain from "idea to launch" (Salerno, Gomes, Da Silva, Bagno, & Freitas, 2015, p. 68).

In the integrated model of innovation management (Figure 1), the first four steps contribute to innovation success. For example, prospection is about understanding customers and recognising changes in the external environment. Ideation refers to devising a good idea – although Tidd and Bessant (2009) acknowledged that "innovation is more than simply coming up with good ideas" (p. 16). Resource mobilisation refers to assigning responsibilities to resources for carrying out particular duties within their respective roles. While these are relevant, three key aspects in the innovation process will be highlighted and used to assist in contextualising the research, namely, ideation, implementation and evaluation.

2.2.2.1.1 Ideation

Ideation is believed to be the relatively easy ten percent of where effort is spent on innovation and begins with a creative idea that is usually seen as the starting point of the process (Denning & Dew, 2015). In the traditional innovation process, idea registration is regarded as the first formal step where market uncertainties are managed through business plans and analyses and ideas are prioritised (Salerno et al., 2015). In the front-end ideation stage where ideas are created and developed, it is argued that the idea is not clearly defined and influenced by complex information and decision-making that is often made on an ad hoc basis (Florén & Frishammar, 2012).

In terms of ideation sources, brainstorming sessions are noteworthy to mention as one of the most common method of generating ideas (Nagano et al., 2014). Customers can also improve the innovation of an organisation by providing knowledge, advice or skills through their participation in the process (Chang & Taylor, 2016). It is contested whether customer participation leads to innovation success, Chang and Taylor (2016) showed that there is a positive relationship on performance when including customers in the ideation and launch phase of the innovation process.

2.2.2.1.2 Implementation

At the heart of the innovation process is the implementation stage, which requires the largest amount of time and money to be spent (Nagano et al., 2014). Furthermore, the creative stage of an innovation usually requires minimal investment compared to the implementation stage, which is usually much more expensive (Bowers & Khorakian, 2014). The key input factors include resources, ideas and strategies, and its output is the product or service with a market prepared for its launch, or optimised processes. Jacobs et al. (2015) proposed an iterative innovation framework that considered organisational factors (such as the organisational structure, size and maturity), practices and policies in the organisation that led to an overall perception of an innovative climate and implementation effectiveness. It offered an encouraging method to analyse organisational factors that affected effective implementation within a given environmental context. Given that the implementation stage is pivotal in the innovation process, where most of the execution, time, funding and resourcing takes place, it was believed this would be an appropriate aspect to focus on for the purpose of this research. This is important because organisations do not predominantly suffer from a lack of decent ideas but are challenged in the process of moving these ideas forward as it processed and refined (Florén & Frishammar, 2012).

2.2.2.1.3 Evaluation

Evaluation is an aspect that runs across the innovation process with multiple decision-making points at different stages. It was argued that greater value would be derived if risk management is made more explicit in the integration of the innovation process, as it is usually considered an implicit aspect that runs throughout the process (Bowers & Khorakian, 2014). While there is a perpetual need to adapt the tension between discipline and creativity in the innovation process, evaluation is an essential component to effectively monitor and manage the innovative performance (Nagano et al., 2014).

These tensions include the interplay of controls and decision-making in managing innovation between different stakeholders. Evaluation can be considered a critical component of risk management and governance. Each decision provides an opportunity to gather information, analyse the situation and take management action where necessary by determining the prospects for innovation and by making choices about the course of action – it is in itself a form of risk management (Bowers & Khorakian, 2014).

While there should be some level of flexibility, it is recognised that a certain level of control is necessary to prevent diverting away from the strategy, extending resources beyond the capacity of the organisation, having unproductive arguments, or having poor execution that may result in missed deadlines and budgets (Perez-Freije & Enkel, 2007). For innovation to be successful, there should also be interaction and iterative feedback processes between complementarities of innovation activities and external and internal knowledge sources (Leiponen, 2005).

2.2.2.2 Organisational context

The organisational context (also referred to as the contextual attributes) recognised that interaction between people is necessary to foster innovation. Nagano et al. (2014) described the organisational context using three main dimensions: (1) an innovation culture through people management and strategic orientation towards innovation that provides sufficient autonomy, motivation and creativity; (2) governance and organisational structure through suitable power structures to facilitate cross-functional integration of strategic long-term goals (and not short-term needs), as well as visibility, accountability and governance of innovation goals; and (3) relationships with the environment that establish channels for exchanging information and capacity to keep abreast of the external knowledge through strategic sources by providing incentives for training and sharing this knowledge. Merton (2013) argued that the benefits and risks of innovation are largely determined by the infrastructure into which it is introduced, rather than the decisions made in selecting how to use it. The contextual attributes will be discussed in further detail below:

2.2.2.2.1 Structures

The organisational structure influences the flexibility and agility of an organisation, where a hierarchical structure can have the advantage of efficiency but usually suffers

from bureaucracy and distorted information that does not readily flow to the top, especially in a changing environment (Teece et al., 2016). The research on innovation has largely ignored issues of corporate structure and strategy, even though the organisational context includes factors which shape the innovative ability of an institution. Furthermore, an in-depth exploration is required between the process of innovation and how certain contextual attributes, such as management, ownership, investment and organisational structures, contribute to its success (Miozzo & Dewick, 2002). The organisational structure is an important contingency factor for management control systems and affects the flow of information (Haustein et al., 2014).

Managers have the ability to influence the business decisions made in the organisation and the discretionary managerial power they exert is affected the management structure and governance structure (Dong & Gou, 2010). It was contended that decentralisation provided flexible communication, greater autonomy, and decentralised decision-making in innovative firms (Haustein et al., 2014).

2.2.2.2.2 Resources

An enabling factor for innovation is human capital, and collaborative relationships have become an essential component of an organisation's innovation activities (Leiponen, 2005). Organisations must allocate resources to reduce risks in an increasingly uncertain and changing environment that has become more integrated and advanced (Teece et al., 2016). Innovation should encourage participation and collaboration between different business units within the organisation by encouraging information transfer. It is argued that without sufficient skills and competencies in terms of technical ability, marketing and orchestration, the organisation would not benefit as much from innovation, as it would not requisite complementary capabilities or the ability to recognise, assimilate and see the value of new information (Leiponen, 2005). In a fast-paced global context that is uncertain, dynamic capabilities, which are characterised by effective management teams that have an entrepreneurial spirit and organisational structures, and good strategy are key determinants to sustain better performance by deploying resources, processes and business models that create a competitive advantage for the organisation (Pitelis & Teece, 2015; Teece et al., 2016). Despite these determinants, the strategy of the deployment of resources has not been vastly discussed in literature on innovation performance (Klingebiel & Rammer, 2014).

Organisational slack refers to flexibility and capacity provided by a cushion or buffer of spare resources (such as people, capital, facilities and time), when these are not completely utilised (Xu, Yang, Quan, & Lu, 2015). When unabsorbed slack exists, organisations have greater potential for experimentation into new initiatives with less stringent performance evaluation and therefore, it provides an opportunity for innovation. However, the influence this has on risk aversion remains unknown (Wu, 2008). Typically, managers have to allocate resources prior to fully understanding the outcomes, which may result in innovation initiatives being susceptible to failure despite being adequately resourced (Klingebiel & Rammer, 2014).

According to (1) the abundance-driven view, a paucity of organisational resources may result in reduced risk-taking and more risk conscious, and managers accept more risk as slack increases, whereas the (2) scarcity-driven view argues that greater levels of slack result in decreased managerial risk-taking as the existence of ample resources reduces the willingness to change (Wu, 2008). This research study takes the former perspective, as there was a positive relationship between slack and entrepreneurial propensity to innovation (De Falco & Renzi, 2015). It also has a logical link to the adaptability of an organisation in a changing environment, where it was contended that organisational slack assists flexibility and agility of an organisation (Teece et al., 2016).

2.2.2.2.3 Innovation culture

In innovative and entrepreneurial organisations, the culture focusses on the inclination of risk-taking; how failure is dealt with; willingness to experiment; and allow for opportunities to be proactively pursued (Bisbe & Malagueño, 2015). The innovation process was hampered if the organisational culture did not provide sufficient room for creativity (Berglund, 2007). A culture that accepts failure (within reasonable grounds) should be built because good ideas can be killed if an intensive screening process takes places too early in the ideation phase (Florén & Frishammar, 2012).

With greater autonomy, a culture that is control-orientated can become more committed-driven to the sustainable improvement of an organisation's competitive advantage (Agostini, Nosella, & Filippini, 2016; Ouakouak, Ouedraogo, & Mbengue, 2014). Senior leaders should sustain an innovation culture by remaining committed to innovation initiatives through their involvement, engagement and sponsorship (Nagano et al., 2014). Osborne and Flemig (2015) argued that the more bureaucratic and formalised an organisation, the more risk averse its culture. Furthermore, they

contended that if employees received greater trust from their managers, the more calculated risks they would be willing to take.

2.2.3 Innovation challenges and obstacles

Innovation is reliant on a set of interdependent components between the external environment and internal system of innovation, which promotes organisational and human resource factors in an integrated and systematic manner. However, in order to understand the specific challenges faced, the internal contextual dimension of an organisation cannot be ignored in terms of its organisational structure and management of innovation processes and practices (Nagano et al., 2014).

The challenge of managing innovation includes the following characteristics for adaptability and survival: much uncertainty based on complex systems with constant change (Poutanen et al., 2016); the necessity for new forms of collaborative efforts and cross-functional involvement across units (Berglund, 2007); the existence of various configurations of innovation processes that are complex and depend on particular characteristics (Salerno et al., 2015); the requiring of constant monitoring and control, even if management actions have been agreed to (Bowers & Khorakian, 2014); and the requiring of effective internal support structures, incentive systems and limits that can be reconfigured to enhance agility (Berglund, 2007). However, it needs to balance competencies and skills, specialised resources, and entrepreneurial processes or tools (O'Connor & Ayers, 2005).

Mohnen and Roller (2005) categorised the potential obstacles to innovation into four categories, namely, risk and finance, competencies within the organisation, external competencies outside of the organisation, and regulation. For the purpose of this study, focus will be on the following obstacles: excessive perceived risk, and the contextual attribute of resistance to change within the organisation. This is because excessive perceived risk can be related to risk management, governance controls and risk-taking, which is important when managing risk and uncertainty in innovation. Resistance to change is a contextual attribute that is internal to an organisation and is also related to stakeholder theory in terms of taking into consideration multiple viewpoints, resources and organisational slack, and management control systems that guide the innovation process. While these categories are not exhaustive, it was recently suggested that the identification of the obstacles that constrain innovation across different types of organisations should be investigated (Costa Souza & Bruno-Faria, 2013).

Table 1: Obstacles to innovation

Category	Factors	
Risk and finance	• **Excessive perceived risk** • Lack of appropriate sources of finance • Innovation costs too high • Pay-off period of innovation too long	➔ **Obstacle 1**
Knowledge-skill within the organisation	• Organisation's innovation potential too small • Lack of skilled personnel • Lack of information on technologies • Lack of information on markets • Innovation costs hard to control • **Resistance of change in the enterprise**	➔ **Obstacle 2**
Knowledge-skill outside of the organisation	• Deficiencies in the availability of external technical services • Lack of opportunities for cooperation with other firms and technological institutions • Lack of technological opportunities • No need to innovate due to earlier innovations	
Regulations	• Innovation is too easy to copy • Legislation, norms, regulations, standards, taxation • Lack of customer responsiveness to new products and processes • Uncertainty in timing of innovation	

Source: Mohnen and Roller (2005)

2.3 Risk management and corporate governance

It is recognised that introducing an innovation changes the trade-off between risk and return, where risks are accepted in order to earn an associated reward (Valsamakis et al., 2010). However, to reduce the inherent and residual risks, organisations and their leaders need to understand how to make informed, logical and rational decisions in relation to innovation. While the consequences of an innovation seem perfectly clear in hindsight, it is difficult to possibly predict these, as many risks stem from the surrounding infrastructure. Therefore, it is necessary to accept and manage these risks and consequences for progression (Merton, 2013).

It was argued that innovation is difficult to manage (especially because it is long-term and complicated in nature, with multiple paths that may be unpredictable and idiosyncratic), and that organisations are limited by bureaucracy and financial

constraints through their coordination and control mechanisms when implementing innovative strategies (Holmstrom, 1989). More recently, it was reported that risk is a central component of innovation, though it is often not managed explicitly as a major theme (Bowers & Khorakian, 2014).

While risk is a vital component of strategic management, most management literature (Merriman & Nam, 2015; Ruefli, Collins, & Lacugna, 1999) interprets risk as the variance in returns, or in a probabilistic manner when analysing at an organisational level. This interpretation did not, however, resonate when viewed in the context of managerial risk, where leaders have the responsibility to assess and supervise the risk of their decisions (Ruefli et al., 1999).

Therefore, risk management is defined more broadly and attempts to refrain from a definition that has negative associated connotations, where it refers to a process of responding to the "problems and opportunities that arise as a result of an outcome not being as expected" through the identification, assessment, management, interventions and evaluation of risk (Sweeting, 2011, p. 1-2). Risk management should recognise the need to balance more rigid control systems, such as assessments, processes, reports, audits, policies and control measures, against softer aspects such as risk culture, people, leadership, open communication and incentives (Lam, 2003). While managing risk could have different meanings to different individuals, the above definition allows for the recognition of uncertainty from the context of not only limiting the downside risks but also the prospect of benefitting from upside opportunities.

Corporate governance has an important role to play in innovation through mechanisms such as effective coordination and incentives (Shapiro et al., 2015). Corporate governance can be viewed as a subset of risk management and refers to the "relationships among the management of a corporation, its board, its shareholders and other relevant stakeholders and also to the specific responsibilities of board of directors and management to ensure and maintain these relationships" (Valsamakis et al., 2010, p. 80). Miozzo and Dewick (2002) asserted that corporate governance theory must come to terms with innovation by explaining how organisational structures and management support the commitment of resources to innovation. They contended that innovation and capabilities depend on the following factors: (1) management structure and ownership; (2) diffusion of new processes and practices across different functions from an intra-organisational perspective; and (3) relationships and collaborations for internal and external sources of knowledge. More recently, the literature has

recognised that a clear conceptualisation of the relevance of structures, processes and capabilities in governance (including stakeholder involvement in the process) is still lacking (Urhahn & Spieth, 2014). For the purpose of this research study, the focus will be on corporate governance from an intra-organisational perspective (i.e. internal governance) by focussing on endogenous factors that can be controlled, in other words, organisational structure, processes and practices, and cross-functional relationships within the organisation.

Dong and Gou (2010) stated that organisations need to improve their corporate governance to enhance their innovation ability and capabilities. However, Prahalad and Oosterveld (1999) argued that in a rapidly changing environment with a business model that is gradually evolving over time, internal governance is insufficient, as the speed at which the competitive environment changes exceeds that with which organisations are able to adapt their internal governance processes. This is despite leaders' recognition of the need for transformation and a new approach to their internal governance processes that can exploit emerging opportunities and confront strategic and administrative clarity.

2.3.1 Control systems

Traditionally, it was argued that management control systems significantly impeded creativity in innovation organisations through the use of formal controls, red tape, poor organisational support and evaluation (Amabile, 1988). However, there has been growing consensus that it plays a fundamental role in innovation management and enhances creativity, especially where the organisation utilises these formal controls in a collaborative and facilitative manner (Bedford, 2015; Haustein et al., 2014).

Biais, Rochet, and Woolley (2015) stated that management and risk control are central to the success of an innovation, and that managers must take responsibility for innovation activities. This view was also supported by Davila, Foster, and Oyon (2009), where the use of controls is an important component in shaping an organisation and its innovation activities as well as to capture any learning.

Bedford (2015) described four types of control systems: (1) diagnostic control systems; (2) interactive control systems; (3) boundary control systems; and (4) belief control systems. The research shows that enhanced performance varied by the type of innovation mode but for ambidextrous organisations, a dynamic tension was created

through the blended use of diagnostic and interactive control systems to drive enhanced performance. Interactive control systems are formal informational systems used by leaders in decision-making related to uncertainties in strategy through their direct involvement and use of open dialogue to encourage learning and shape innovation (Bisbe & Malagueño, 2009). Diagnostic control systems set financial and non-financial limits through budgets and plans that managers need to adhere to, and are generally associated with traditional control and monitoring by drawing attention to negative outcomes or mistakes in the implementation phase of a strategy (Bedford, 2015; Davila et al., 2009). Boundary and belief control systems are considered to be value systems that frame an organisation's strategic purpose through its processes, practices and policies (Bisbe & Malagueño, 2015). Belief systems usually communicate the direction and vision of the organisation through mission statements, while boundary systems formally set constraints and acceptable boundaries to focus attention towards important duties (Bedford, 2015).

Innovation processes require multiple decision-making points where there are interdependencies and overlap between these different points (Vargas-Hernández, 2011). There is a reliance on the delegation of responsibilities and therefore, managerial action is pertinent for this to happen. An organisational context that is conducive to the promotion of innovation efforts is essential when systematically implementing systems. This occurs when employees are dynamic with interactions across departments, decision-making processes and quality of relationships within the organisation as well as externally, and positive social conditions are experienced by individuals in respect of the organisation's innovation activities. The manner in which these processes are viewed, coordinated and reviewed by senior leadership ensures that these systems remain healthy (Nagano et al., 2014).

2.3.2 Managing risk and uncertainty

A main obstacle of innovation can be identified as the difficulty in dealing with risk and uncertainty at a much faster pace. More complex risk management techniques are required when managing radical innovations (Vargas-Hernández, 2011). While common sense would dictate that initiatives which offer higher risk provide higher expected returns, organisations would generally favour these initiatives, but risk management is a key component in corporate innovation by allowing organisations to increase their chances of success or change competitive dynamics (Merriman & Nam, 2015). The most common issues that require managing include estimating the chance

of technical success and commercial viability of an innovation, the perception of risk from a cognitive and sociological viewpoint, and the political influences as a result of formal and informal compliance and controls (Tidd & Bessant, 2009).

From a corporate perspective, risks that need to be managed include internal governance and control with adequate autonomy, compliance with formal requirements of an innovation process rather than its outcomes, and experimentation with different business models that allow for flexible and alternative configurations (Berglund, 2007; Tidd & Bessant, 2009). A certain risk tolerance is required for risk-taking when venturing into new innovation initiatives, and an optimistic view may lead to higher risk-taking in seeking opportunities, though it could possibly lead to an over-allocation of resource capacity (Dai, Maksimov, Gilbert, & Fernhaber, 2014). A basis for successful innovation is a positive outlook towards risk-taking, which is affected by the innovative culture of the organisation and considers ownership, learning ability from mistakes, and encouraging creativity (Nagano et al., 2014). This highlights the importance of managing risks related to internal governance, controls and compliance from an organisational context when undergoing innovation activities.

2.4 Stakeholder theory

Stakeholders are people who have an interest in the organisation and can affect and be affected by an organisation's activities, decisions and policies (Carroll & Buchholtz, 2012). Stakeholder theory provides an appropriate lens which extends beyond only economic performance when considering the complex perspective of value for which different stakeholders look (Harrison & Wicks, 2013). As part of an innovation process, a variety of stakeholders is typically identified by organisations to coordinate and prioritise activities and deal with any stakeholder issues. Therefore, the integration of multiple stakeholder issues assists organisations in balancing a variety of, often conflicting, stakeholder interests in the innovation process through the use of both formal and informal coordination mechanisms with some allowance for absorptive capacity (Driessen & Hillebrand, 2013).

Stakeholder theory recognises that the combination of different stakeholder concerns and issues may result in tensions, and management often has to play the role of a mediator in balancing conflicting views in order to achieve a cooperative outcome (Hill & Jones, 1992). Due to the existence of tensions in stakeholder theory, the prioritisation of stakeholder issues has to be managed effectively, regardless of

whether there exists a solution that satisfies different stakeholders' needs (Driessen & Hillebrand, 2013).

Agency theory, however, advocates that managers could pursue personal agendas contrary to shareholders' preferences (Wu, 2008), and intend to maximise their personal utility function of earnings, position and power (Hoskisson, Hitt, Johnson, & Grossman, 2001). Stakeholder theory is a framework for managing relationships across the political, economic and social environment by considering the interests of various stakeholders such as employees, customers, shareholders, government and the community at large (Carroll & Buchholtz, 2012). This could include not investing in long-term initiatives that are considered riskier or not easily measurable, such as innovation, research and development (Becker-Blease, 2011). This leads to shareholders' reliance on more prescriptive corporate governance mechanisms and controls (through the use of incentives or greater supervision) to align differences in risk preferences between managers and shareholders in order to encourage risk-taking behaviours through greater investments in innovation (Wu, 2008). In addition, more prescriptive monitoring mechanisms are required to ensure that managers involved in innovation are performing in the direct interests of the organisation (Robeson & O'Connor, 2007). This is as a result of managers minimising downside risks by spending money on risk prevention methods (Biais et al., 2015). Individuals involved in innovation may be more risk-averse if they have fewer options to reduce risks through diversification, which is compounded by the uncertainty of innovation activities (Shapiro et al., 2015).

Contrary to the view of agency theorists, stakeholder theorists favour a more organic "trust-based" approach to management, where stakeholders' goals are aligned with less stringent governance control measures and evaluations (Robeson & O'Connor, 2007). The integration of stakeholder management into an organisation's governing philosophy is recognised as the strategic direction towards successful stakeholder management, and a control system that measures the achievement of common results when driving innovation leads to a long-term sustainable commitment to the stakeholder view (Carroll & Buchholtz, 2012).

2.5 Interplay between innovation, risk management and internal governance

Based on the above literature review, there is a very little empirical evidence that explores the interplay between innovation, risk management and internal governance. This is evidenced by the research (Nagano et al., 2014; Sapra et al., 2014) remaining fairly nascent from an empirical and theoretical standpoint, despite one of the key challenges of innovation being managing uncertainty while taking into consideration the organisational context in the design of the innovation process and incentives through governance and risk mechanisms. Innovation remains an important challenge that needs to be facilitated and supported by management to overcome internal and external barriers that would potentially constrain it (Costa Souza & Bruno-Faria, 2013; Perez-Freije & Enkel, 2007).

This leads to the concept of innovation governance, represented by five key components, namely structure, processes, strategy, rewards, and people. It is argued that innovation must have a governance system that mediates disputes and allows for effective resource allocation, as well as a control system that will assist with a preferred path to achieve a desirable outcome (Deschamps & Nelson, 2014).

In the literature review, innovation (with particular emphasis on implementation in the innovation process) was considered. From an intra-organisational perspective, common innovation obstacles (such as perceived risk and resistance to change that is related to an innovation culture) and contextual factors (such as resources, management and organisational structures) were considered as contextual attributes that influence the innovation process. These influence risk management and internal governance and assist in managing innovation uncertainty, as these emphasised control systems and balancing multiple stakeholder perspectives.

2.6 Conclusion

Innovation and risk-taking are inextricably linked (Flemig et al., 2016; Osborne & Flemig, 2015). However, risk is a central component of innovation, though it is often not managed explicitly (Bowers & Khorakian, 2014). A key challenge for innovation is managing uncertainty, and while incentives provided through governance and risk mechanisms affect innovation, the research is still fairly nascent from an empirical and theoretical standpoint (Sapra et al., 2014). Therefore, the different types of risk control

systems and the management of innovation uncertainty was considered. Corporate governance was looked at from an intra-organisational perspective, in other words, internal governance.

An integrated innovation management model was reviewed in the literature as a starting point by focussing on ideation, implementation and evaluation within the innovation process. This process is also influenced by contextual attributes. A limitation to much of the current research is that it does not consider how the contextual attributes (or organisational context which includes culture, structures and networks) shape the design of the innovation process and innovative choices through corporate governance and risk management (Nagano et al., 2014; Sapra et al., 2014). Networks are influenced by stakeholders and resources and therefore, resources were also considered as a contextual attribute that influenced innovation. This research study therefore adopted a lens using stakeholder theory to assess how it integrates with the management of the innovation process, especially when it is influenced by risk management and internal governance.

An understanding of the interplay between the primary constructs of innovation, risk management and governance was gained through the literature review that was conducted. This study aims to understand the dynamics between innovation, risk management and governance, and to explore the contextual attributes that influence the relationship between them. Considering this, the research questions raised in Chapter 3 have been articulated more clearly based on the arguments in the first two chapters and the integrated model presented in Figure 1 as a starting point. These will be empirically tested in the rest of this research study using the methodology outlined in Chapter 4.

Chapter 3: Research Questions

Based on the literature review, the following research questions were proposed:

3.1.1 Research question 1

How is the innovation process in organisations influenced in relation to their internal governance and risk processes, and contextual attributes?

The first research question aims to identify how risk management and governance influence the innovation process. It will also assess how the contextual attributes of management and organisational structures, culture and resources affect the innovation process. This will determine the interplay between corporate innovation, risk management and internal governance. It will also aim to gauge the effectiveness of organisations when undertaking innovation activities by using adequate risk management and governance controls. Furthermore, it may assist in reducing the high failure rates associated with innovation initiatives and provide benefits through appropriate risk management and internal governance.

3.1.2 Research question 2

How can the management of innovation uncertainty by utilising risk management (i.e. control systems and risk management processes) and internal governance be conducive to innovation efforts?

The second research question will assess the control systems, risk management and governance processes and perceptions towards risk that are conducive to innovation efforts. It will compare different control systems and risk management processes that are present in organisations. It is expected that the processes that are effective in highly innovative organisations could potentially be adopted and utilised to create a partnership that will provide organisations with a competitive advantage. Finally, it will support the development of embedding risk management in an organisation's innovation efforts to better manage innovation uncertainty.

3.1.3 Research question 3

How does the integration of stakeholder management in the innovation process impede an organisation's decision-making and evaluation ability in relation to less stringent governance controls?

The third research question aims to identify how stakeholder management integrates with the management of the innovation process. The integration of multiple stakeholder issues requires the balancing of often conflicting agendas. Therefore, the coordination and prioritisation of innovation activities should be important through effective decision-making and evaluation criteria.

Chapter 4: Proposed Research Methodology and Design

4.1 Choice of methodology

4.1.1 Research method

An exploratory research methodology was employed for this study. This was deemed appropriate as the research is relatively nascent because managing uncertainty remains a key challenge for innovation (Sapra et al., 2014). Furthermore, there has been limited research on the relationship between innovation and the broader aspects of corporate governance (Shapiro et al., 2015). This allowed the researcher to delve into assessing the interplay of the research constructs of innovation, risk management and governance as well as understanding the influence of the contextual attributes. Saunders and Lewis (2012) suggested that exploratory research could be used to gain insights on a research problem with the possibility of discovering new information. It aimed to assess the research constructs from a new perspective, given that it was established in Chapters 1 and 2 that the interplay between the primary constructs remained relatively nascent despite innovation and risk being inextricably linked (Flemig et al., 2016; Osborne & Flemig, 2015). It allowed for an in-depth study with potential for rich data and acceptance when dealing with contradictions and ambiguity (Denscombe, 2008).

While the study could theoretically be placed between exploratory and causal research, it would focus more on a qualitative rather than quantitative approach. This is because qualitative research is considered to be an appropriate method when trying to understand the pertinent characteristics and aspects of a phenomenon before trying to theorise around it (Tucker, Powell, & Dale Meyer, 1995). Conversely, quantitative data does not allow for much interpretation and is only as good as the research questions asked (Denscombe, 2008). Furthermore, purely quantitative methods would be unlikely to elicit the rich, thick data as presented by the findings based on the primary data gathered that was necessary to address the proposed research questions to develop a contextual understanding of the research topic.

Saunders and Lewis (2012) suggest that exploratory research is well suited to a qualitative research design such as interviewing, and therefore this method was

employed to delve into the constructs of innovation and risk management through in-depth and expert interviews. An explanatory study (or casual research) would also provide a more in-depth understanding of cause-and-effect relationships that exist between variables (Saunders & Lewis, 2012). This was because a qualitative and interpretive stance provided the researcher with the ability to develop a contextual understanding of interplay, how the innovation process is affected by contextual attributes as well as the risk prevention actions through risk management and governance controls. It also provided the researcher with design flexibility and interaction between respondents and the researcher (Bloomberg & Volpe, 2012). Given that the innovation process is a complex, dynamic process (Poutanen et al., 2016) that is affected by organisational complexity in terms of the contextual attributes, the research philosophy of interpretivism was relevant for this research to better aid in managing innovation uncertainty, which is subjective and determined by a unique set of circumstances.

4.1.2 Inductive reasoning

A “bottom up” approach of inductive reasoning was used, where the researcher analysed the data by observing common themes and patterns that came up through the interview process in order to develop some general conclusions (Saunders & Lewis, 2012). Given the exploratory nature of the topic, where the interplay between corporate innovation, risk management and internal governance remained relatively nascent from an empirical standpoint, it was appropriate to use inductive reasoning to gain an understanding of the research context, as opposed to deductive reasoning, which uses sequential stages to test a theoretical proposition (Saunders & Lewis, 2012).

4.2 Universe/Population

The primary universe for the research study was senior leaders employed in an organisation that has undergone an innovation project or initiative. The senior leader should ideally have an involvement or understanding of the innovation efforts in their organisation, as well as risk management and governance in respect of the innovation process. The primary sampling frame selected for this research was large companies (see paragraph below), as it is believed that these organisations have greater access to resources, defined policies, procedures and governance controls in place. Therefore, small and medium enterprises were excluded from this research.

Du Toit, Eramus and Strydom (2009) defined a small to medium enterprise as consisting of fewer than 200 employees, and with an annual turnover less than R64 million and capital assets of less than R10 million. In addition, owners should have direct managerial involvement. Therefore, for the purpose of this study, a large organisation was considered as an organisation that consisted of more than 200 employees with an annual turnover greater than R64 million and capital assets that exceeded R10 million. Furthermore, it would not necessarily be a requirement that owners have direct managerial involvement in the organisation.

From this target population, a sample was extracted for potential candidates that met the requirement for the purpose of this study. Potential candidates were identified as per section 4.4.1 where they were asked background questions to establish if they met the sampling criteria. By describing their role; their involvement and understanding of innovation; and their involvement or understanding of risk management and internal governance, this allowed the researcher to establish if the sample criteria were met.

4.3 Unit of analysis

The sample unit is the individual that was interviewed, in other words, their perceptions and views that related to the innovation process, internal governance and risk management. This was someone who is involved or has sight of both innovation and governance within their organisation.

4.4 Sampling

4.4.1 Sampling method

A non-probabilistic sampling technique was used to identify potential interviewees. The researcher used a combination of snowball and purposive sampling (Saunders & Lewis, 2012). Snowball sampling is an effective technique that can be used through a process of referrals, whereas purposive sampling is where one may already know something specific about people based on their position in the organisation or with a particular purpose in mind (Denscombe, 2008). Purposive sampling is appropriate if the researcher has the context in depth in order to gain further insight and understanding of the phenomenon (Bloomberg & Volpe, 2012). Therefore, the researcher interviewed senior people who were known to the researcher based on their involvement in or

understanding of innovation activities at organisations, as well as the associated risk management and governances in relation to the innovation. In addition, the researcher asked interviewees to provide references to other relevant senior leaders in large organisations across several different industries.

4.4.2 Sampling size

The sample size was relatively small due to the qualitative nature of the research study as well as the difficultly in gaining access to senior leaders within organisations that have potential knowledge, involvement or understanding of the innovation, risk management and internal governance. Given that qualitative research is more intensive with the intention to gain access from fewer individuals compared to quantitative research, a small sample size of at least eight respondents should suffice (McCracken, 1988, p. 17). However, in qualitative research, the number of interviews required can be inductively established until data saturation has been reached (Saunders & Lewis, 2012). The sample size consisted of 14 respondents being interviewed across 13 interviews. One of the interviews was conducted as a joint interview with two respondents being present. Out of the 14 respondents, only four were known to the researcher prior to the interviews.

Most of the respondents seemed to be forthcoming with their perspectives, opinions and information relating to the research topic. Given that consent remained a key priority throughout the research where data remained confidential, respondents were engaged and willing to participate. This is important as the researcher is morally bound to produce an ethical research design by understanding the relationship between the researcher and respondents (Bloomberg & Volpe, 2012). This provided for a rich source of data to analyse with greater sensitivity (McCracken, 1988). In addition, the researcher completed an additional interview, although the respondent later asked to be withdrawn from the research study after contacting the Public Relations department of the organisation where they believed that company-specific information was be shared as opposed to just general thinking on governance and innovation. This additional interview was therefore not included in the research study and the data remained confidential.

The sample consisted of existing or former chief executive officers (CEOs) or other members of the C-suite, Managing Directors, Executives or Heads of departments, or Senior Managers who are experts in their respective industries. Therefore, the sample

consisted of members that are in relatively senior positions in their respective organisations. In some circumstances, it was difficult to schedule a time with the most senior potential candidate in an organisation (such as a C-suite executive) given time constraints, and therefore the researcher relied on snowball sampling to be referred to other potential senior candidates that could participate in the study. The researcher also had to find other respondents at different organisations where some potential candidates were unable to make time available to be interviewed.

The sample was taken across six different industries, namely (1) financial services, (2) technology, (3) telecommunications, (4) petroleum, (5) industrials, and (6) consumer goods. Given that a combination of snowball and purposive sampling was utilised, each industry is not equally distributed in the sample. The intention was to aggregate views across different industries based on their insights, knowledge and experience. The respondents have been categorised based on their position by industry. Please refer to section 5.2 below for further information on the sample and the categorisation based on their position.

Table 2: Respondents by industry and position categorisation

Industry	Position Categorisation	Number of Respondents
Consumer Goods	Executive	1
Financial Services	Executive	4
	Senior Manager	3
Industrials	Chief	1
Petroleum	Executive	2
Technology	Executive	1
Telecommunications	Chief	2
Total		**14**

All of the organisations met the requirement of a large company as defined in section 4.2. The majority of the organisations were listed companies on the Johannesburg Stock Exchange, where five organisations were listed as one of the top companies and another three organisations represented large organisations on the exchange. Only one organisation was not listed but met the requirements of a large organisation as it had more than 500 employees and the appropriate amount of turnover and capital assets as confirmed in the interview. The remaining organisations were multinational

organisations that had operations in South Africa but were either listed on overseas stock exchange.

4.5 Measurement instrument

4.5.1 Semi-structured, face-to-face interviews

The measurement instrument used for the research was semi-structured, face-to-face interviews, during which each of the research questions were covered through a wide variety of probing methods as required during the interviews. Interviews provided a sound grounding on which to build theoretical knowledge based on collecting dense information and deeper insights into the interview candidates' experiences, narratives and perceptions of a phenomenon (Tucker et al., 1995). This allowed for a level of consistency during interviews while allowing flexibility for a level of customisation based on the specific organisational context.

Although interviews do have advantages, they also have some limitations. It is important to manage the relationship between the researcher and the respondent, and the interview itself is dependent on the interaction between the two. The researcher should have interviewing skills in terms of being unobtrusive and manufacturing distance, while the respondent may prove un-collaborative or provide prepared and rehearsed responses (McCracken, 1988).

4.5.2 Interview guide

An initial draft interview guide was compiled by the researcher based on the information from the literature review in Chapter 2. This is deemed to be a fundamental tool for qualitative research and is indispensable, particularly for long interviews (McCracken, 1988). Included in Appendix 2: Initial interview guide at the end of this document, it allowed for some degree of consistency in the questioning and sequencing of the interview process using open-ended questions. As a pre-test, the interview guide was piloted with three colleagues prior to conducting the first interview. Based on the feedback received to ask questions in a more understandable manner, ensure that there was a natural flow of the order of questions, and to combine certain questions together, the interview guide was refined. The refined interview guide is included in Appendix 3: Refined Interview guide at the end of this document, where the changes are visible.

The interview guide was structured such that it began with background questions to determine the industry, organisational context, and role and responsibilities of the respondents. These opening questions were intended to be unobtrusive and nondirective and hence represented the “grand-tour” testimony (McCracken, 1988). To establish sample validity, the researcher asked respondents to briefly discuss their involvement or understanding of corporate innovation, risk management and internal governance.

4.6 Data gathering process

Primary data was generated through in-depth, face-to-face interviews with key senior leaders within an organisation. One of the most common ways that exploratory research can be conducted is by interviewing “experts” on the chosen topic (Saunders & Lewis, 2012). Therefore, 13 interviews were conducted with industry experts and senior managers across different organisations and industry sectors as described earlier, in section 4.4. Qualitative data was collected through open-ended interview questions and observations from senior leaders within organisations (Edmondson & Mcmanus, 2007). Semi-structured, face-to-face interviews were conducted to probe for insights and views from key individuals at different firms. Interviews were conducted until data saturation was reached (Saunders & Lewis, 2012). Data saturation was reached by interview 11 where subsequent new codes were created (see section 5.4.2). Three of the interviews were conducted telephonically or via Skype if the respondents were not located in Johannesburg.

The research design was cross-sectional, as the data was collected through interviews during a specific period in time (Saunders & Lewis, 2012). This represented a snapshot of the views and perceptions of respondents when considering the interplay of innovation, risk management and governance. Hence, it was not the intention to understand how this interplay would evolve over a longer period.

All of the interviews were recorded using a digital voice recorder, with the permission of respondents obtained prior to the start of the interview to ensure the accuracy and integrity of data (Blumberg, Cooper, & Schindler, 2008). These recordings were sent for verbatim transcribing to a transcription and typing services company. It is important to note that transcription (consisting of spoken discourse) is an inevitable component in qualitative data analysis and caution should be exercised by verifying the interpretation

of the transcripts against the original recordings (Flick, 2014). Therefore, once the completed transcriptions were received, these were verified by the researcher against the original audio recordings for accuracy and quality.

In some cases, minor notes were taken by the researcher during the interviews. This allowed the researcher to ask some further questions for clarification at later stages during the interview process. In general, however, the interviews followed the order of the interview guide but allowed the respondents to provide complete responses without interruption.

4.7 Analysis approach

The interview transcription documents were formatted in a similar manner to ensure consistency prior to uploading them into the ATLAS.ti software. They were analysed using the ATLAS.ti Qualitative Data Analysis software. This computer program is a tool to conduct analysis of qualitative research. This aided in analysing a large volume of data and reducing it to identify common patterns (Bloomberg & Volpe, 2012). Each of the transcribed interview documents were coded and analysed to search for common themes that could be identified based on thematic analysis. Thematic analysis allowed for understanding the complexity and rich description by identifying common concepts and themes in the data (Bloomberg & Volpe, 2012). When analysing qualitative data, the following iterative process as proposed by Denscombe (2008) was performed: (1) the data was coded systematically; (2) the data was categorised to reflect the general ideas that these relate to; (3) key coding themes and relationships were identified in order to recognise patterns; and (4) conclusions or concepts were developed from the patterns identified in the process.

Based on the iterative process above, each interview took approximately two to four hours to analyse and code. The transcripts were coded *in vivo* as an initial start. Reference was made back to the recordings on several occasions during the process as codes were being generated and assigned. The codes were collated to develop potential themes. A second pass was made to the initial coding to re-categorise the codes that were assigned. This was where codes were merged if different words were used to represent the same concepts. Given the iterative nature (Denscombe, 2008), the thematic analysis process was used two times to collate the codes and themes to develop conclusions and concepts from patterns identified. The final code book can be found at the end of this document in Appendix 4: Final code book.

Once coded, collated data was extracted from the ATLAS.ti program and captured in Microsoft Word to produce the relevant graphs in Chapter 5. The data and selected quotations that were related to particular code were extracted to gain insights in the context of the research questions. Where appropriate, the information was ranked by the frequency for comparative purposes.

Network views were created using ATLAS.ti software to visualise the relationships and connections between concepts. It allowed the researcher to interpret the findings by grouping co-occurring codes related to that concept. A co-occurrence would represent the intersection of two codes where a section of wording is attributed to two or more codes. Relative word counts were also extracted using the ATLAS.ti Codes-Primary Documents Table. These represented the amount of time spent by respondents or their "share of voice" discussing a coded concept based on the total number of words to make sense of the relative importance placed on this topic relative to other groupings or categories.

4.8 Credibility and trustworthiness

Validity and reliability are frequently used as the criteria for evaluating qualitative research to clarify its trustworthiness (Bloomberg & Volpe, 2012). Although there are various lenses to assess the validity and reliability of the research study, the researcher discussed these using the following: (1) credibility; (2) dependability; and (3) transferability (Bloomberg & Volpe, 2012).

4.8.1 Credibility

In terms of determining credibility, it is important to acknowledge that a particular lens is used – that of the researcher. The researcher may have brought personal biases or subjective perspectives when collecting and analysing the data (Bloomberg & Volpe, 2012). For example, there exists the possibility of researcher bias through the inductive coding method, where the researcher potentially made invalid interpretations based on the information gathered through the interviews. Please refer to section 4.9.1. It is therefore important to use "researcher reflexivity", where the researcher self-reflects by disclosing any subjective perspectives and beliefs that could influence the outcomes of the study (Creswell & Miller, 2000).

The researcher also did not disconfirm any negative evidence and took into account different perspectives from the respondents in trying to understand the interplay observed in the research (Bloomberg & Volpe, 2012). The researcher coded the data using qualitative analysis software to systematically identify any emerging themes. Furthermore, the researcher received objective feedback from an independent third party to determine whether the data analysis and interpretations were presented fairly and credibly. Disconfirming evidence is related to triangulation in search of evidence to establish validity by examining multiple (often conflicting) perspectives (Creswell & Miller, 2000).

4.8.2 Dependability

The researcher has provided evidence of the data gathering and analysis process in the sections above, as well as the summary in the interviews and transcription analysis in Chapter 5 to follow. This will allow the procedures and processes that were followed in data collection and interpretation to be tracked (Bloomberg & Volpe, 2012). The researcher has also provided the original recordings and verbatim transcriptions received from a transcription and typing services company as evidentiary support available for review. This “audit trail” provides an account of the rigour used in the process (Creswell & Miller, 2000).

4.8.3 Transferability

In qualitative research, transferability could be judged by a reader based on similarity between the context established by the research and other contexts. It is assessed by the richness of “thick description” and the detailed information of the context (Bloomberg & Volpe, 2012; Creswell & Miller, 2000). To establish this, the researcher provided detailed information regarding the sample, interview method, and whether the respondents were forthcoming with their views. By taking into consideration rich insights from the data and utilising several quotes across the different respondents, the intention was that internal transferability was reached.

4.9 Research limitations

4.9.1 Researcher bias

At the time this study was conducted, the researcher was employed by a major financial services organisation based in Gauteng. Furthermore, the researcher had roles in both product development (dealing with innovation) and enterprise risk management. Given that exploratory research is subjective and could be influenced by the perspectives of the researcher, this may have potentially allowed for some bias where the researcher's values, beliefs and identity may have influenced the outcomes of analysing qualitative data (Denscombe, 2008). However, some academics have argued that researchers should be a group member of the sample studied in order to understand their experiences by having the necessary judgement and subjective knowledge (Silverman, 2011). It was therefore important for the researcher to acknowledge these potential observer biases, as their context would have an influence on how they interpret the findings and results of the research (Saunders & Lewis, 2012).

4.9.2 Subject bias

Respondents may have provided information that is unreliable and would have potentially threatened the trustworthiness and credibility of any research results (Saunders & Lewis, 2012). Given that the sample consisted only of senior leaders (CEOs or senior managers), the research would not represent the voice of those in lower levels of seniority. Furthermore, respondents may have a biased view on innovation, risk management and internal governance depending on the context and the industry in which they operate. The social capital of respondents may have shaped their view (Woolcock & Narayan, 2000). For example, it could be argued that people from a well-resourced background may likely have a higher risk appetite compared to those who have worked in resource-scarce environments where the cost of failure is higher. Given that four of the respondents knew the researcher, their responses may have been affected or influenced by this familiarity.

4.9.3 Sampling bias

The use of snowball sampling and purposive sampling may have limited the transferability of this research to other industries, especially given that the sample was skewed towards the financial services sector. Generalisation or transferability has

issues in terms of how representative a sample may be and the use of judgement when applying to other similar circumstances (Denscombe, 2008). Other problems that related to this sampling technique include community bias (the first participant will have a strong impact on the sample), non-random selections, vague overall sampling size, and wrong anchoring (uncertainty as to whether the sample is an accurate representation of the population).

4.9.4 Sample applicability

A further limitation was that the primary sample was restricted. It included only large companies and therefore, the applicability of the model for smaller organisations such as small and medium enterprises was unclear. Although the research considered the views across multiple industries, the results cannot be transferred across all industries as the sample was limited to six different sectors.

As the interviews were only conducted in South Africa and limited to employees who potentially work for large organisations based in South Africa (apart from one interview candidate), the outcomes will be particularly relevant for businesses in this country, though they could possibly be relevant to other emerging markets or large organisations in a broader context. The primary sample would consist of senior leaders and therefore the perspectives and views of lower-level employees were not included. This may have led to biased results, as a balanced view from all levels in the organisation was not obtained.

4.10 Ethical issues

Each respondent was given a consent form to complete and this informed consent remained a priority in the research process. This acknowledged that participation in the study was voluntary and that the respondents could withdraw from the research study at any time without penalty. To this regard, one participant chose to subsequently withdraw without penalty from the study after consulting with their organisation’s Public Relations department. No part of that interview has been included in this research study in any form. The consent form that was completed by each of the participants and the researcher is included in Appendix 5: Ethical consent form. Scanned copies of the consent form completed by the respondents have been included as evidentiary support to this research project.

Ethical considerations are vital in a research study and may impact different stages of the process from research design, to data collection and analysis, and the results write-up (Saunders & Lewis, 2012). It was therefore important to not potentially harm any of the respondents by disclosing their identity or the organisations for which they work.

Chapter 5: Results

5.1 Introduction

This chapter collates the findings from the interviews for each of the research questions introduced in Chapter 3. Given the exploratory nature of the study, the results were used as a basis to understand the interplay between innovation, risk management and internal governance. Through thematic analysis, the results were analysed using inductive reasoning to determine key findings. This chapter provides an overview of the sample, followed by the interview summaries and transcription analysis. Lastly, the collation of results per research question introduced in Chapter 3 is presented.

5.2 Sample overview

5.2.1 Sample classification

The sample consisted of 14 respondents (across 13 interviews, where one meeting was held as a joint interview) represented by senior leaders within large organisations across different industries. The respondents either have an understanding or involvement of innovation, and risk management and internal governance in relation to the innovation process.

All the respondents identified themselves as members of their respective organisation's management team and held a relatively senior position in that organisation. The sample classification of the respondents is represented by Table 3:

Table 3: Sample classification of respondents

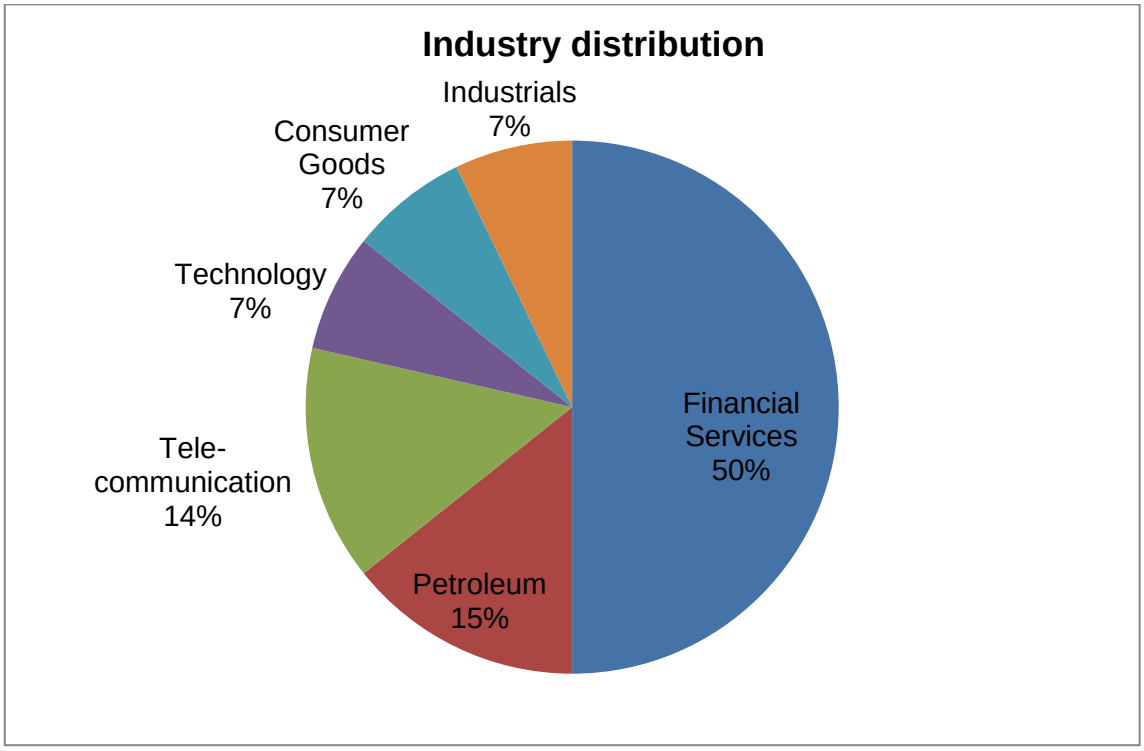
Respondent	Position	Gender	Industry
Respondent 1	Customer Technology Manager	Male	Financial Services
Respondent 2	Group Chief Digital Officer	Male	Telecommunications
Respondent 3	CEO and Founder	Male	Telecommunications
Respondent 4	Head of Projects Management	Male	Consumer Goods
Respondent 5	Managing Director of Innovation	Male	Financial Services
Respondent 6	Non-executive Chairman and previous CEO	Male	Industrials

Respondent	Position	Gender	Industry
Respondent 7	Head of Analytics and Loyalty Rewards	Female	Financial Services
Respondent 8	Head of Research and Development	Male	Financial Services
Respondent 9	Head of Fuels Value Proposition	Male	Petroleum
Respondent 10	Head of Business Development	Female	Petroleum
Respondent 11	Senior Manager Innovative Capability	Female	Financial Services
Respondent 12	Senior Manager Operational Risk Innovation	Female	Financial Services
Respondent 13	Head of SAM and compliance	Male	Technology
Respondent 14	Head of Client Solutions	Male	Financial Services

5.2.1.1 Industry

Data was collected from respondents across the following industries, namely (1) financial services, (2) technology, (3) telecommunications, (4) petroleum, (5) industrials, and (6) consumer goods. There may be a bias in the sample towards financial services industries, where most of the respondents were from this industry (seven respondents). Therefore, the views of this research could be influenced to a greater extent towards this particular industry. This was followed by two respondents in the telecommunications and petroleum industries respectively. One respondent was interviewed from each of the other remaining industries respectively, namely technology, industrials and consumer goods. The distribution of respondents by industry is shown below:

Figure 2: Distribution of respondents by industry

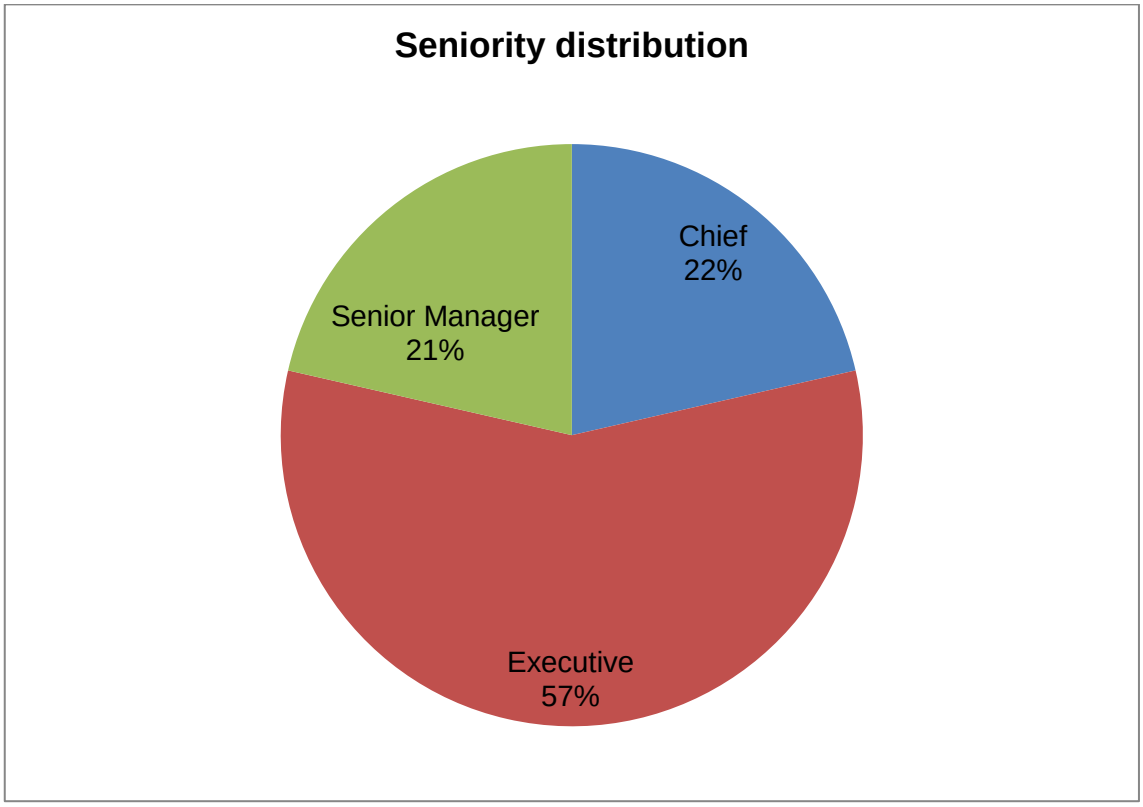


5.2.1.2 Level of seniority

In the research methodology in Chapter 4, the researcher sought to interview senior leaders that were involved in or understood the innovation efforts as well as risk management and governance in relation to the innovation process.

All of the interviews were completed with respondents who had identified themselves as either the Chief (classified if the respondents identified their position as the “Chief Executive Officer” or “Group Chief Digital Officer”); Executive (classified if the respondents identified their position as a “Managing Director”, “Head of…” or a member of an Executive Committee) or Senior Manager (classified if the respondents identified their position as a “Senior Manager” or “Customer Technology Manager”). The distribution by level of seniority is shown below:

Figure 3: Distribution of respondents by seniority



The researcher had set out to conduct interviews with senior leaders in organisations as per Chapter 4. Figure 3 confirms that the level of seniority has indeed been achieved. However, there may a bias that the views of this research are from those at a senior level within their organisations and may therefore not include the views or perspectives from employees that are in less senior positions. However, it may be difficult to have justified including these views, as employees in less senior positions are less likely to have sight of both aspects of innovation efforts as well as risk management and governance.

5.3 Interview summaries

The researcher conducted 14 interviews, though only 13 interviews were included for the purposes of this research, as one of the respondents voluntarily withdrew. The summary statistics for the interviews are shown below:

Table 4: Summary of interviews held

Interview	Interview date	Interview length (min)	Word count
Interview 1	1 July 2016	00:59:39	6454
Interview 2	12 July 2016	00:39:35	5195
Interview 3	13 July 2016	01:52:41	11423
Interview 4	21 July 2016	01:34:22	12426
Interview 5	25 July 2016	00:49:48	5680
Interview 6	4 August 2016	00:58:17	3982
Interview 7	10 August 2016	01:15:40	9266
Interview 8	10 August 2016	01:12:18	6450
Interview 9	10 August 2016	01:09:43	9596
Interview 10	17 August 2016	01:14:09	6431
Interview 11	22 August 2016	01:16:15	9624
Interview 12	25 August 2016	01:00:04	6738
Interview 13	9 September 2016	00:52:28	7487
Total		**14:54:59**	**100752**
Average		**01:08:51**	**7750**

5.3.1.1 Interview method

Most of the interviews (ten of the 13 interviews) were conducted face-to-face with the respondents at a convenient location. In most circumstances, the interviews were held in a meeting room at the respondent's work premises. However, two of these ten interviews were held in a restaurant setting (where one was held at a coffee shop and the other at a respondent's executive dining area in their work premises). This resulted in distortion in parts of the digital recordings due to the background noise from other customers that were present in close proximity. The remaining three interviews were conducted telephonically or via Skype if the respondents were not located in Johannesburg.

The researcher also had the opportunity to visit the innovation hubs of two of the organisations. These hubs represented a vibrant and colourful environment that aimed to spark creativity from its employees to develop new disruptive ideas. There was a distinct difference from this "thinking space" compared to the main organisation.

5.4 Transcription analysis

5.4.1 Transcription preparation

5.4.1.1 Document format

The transcription documents were formatted prior to using the qualitative data analysis program, ATLAS.ti, to analyse the information. The formatting convention that was used kept all text spoken by the researcher in bold and the answers from the respondents in normal text.

5.4.1.2 Document naming convention

Prior to importing the formatted documents into ATLAS.ti software program, the documents were named according to the following naming convention:
"[Gender]_[Industry]_[Perceived Innovation Level]_[Perceived Autonomy Level]_[Organisation]_[Interview Number]"

This above naming convention can be explained as follows:

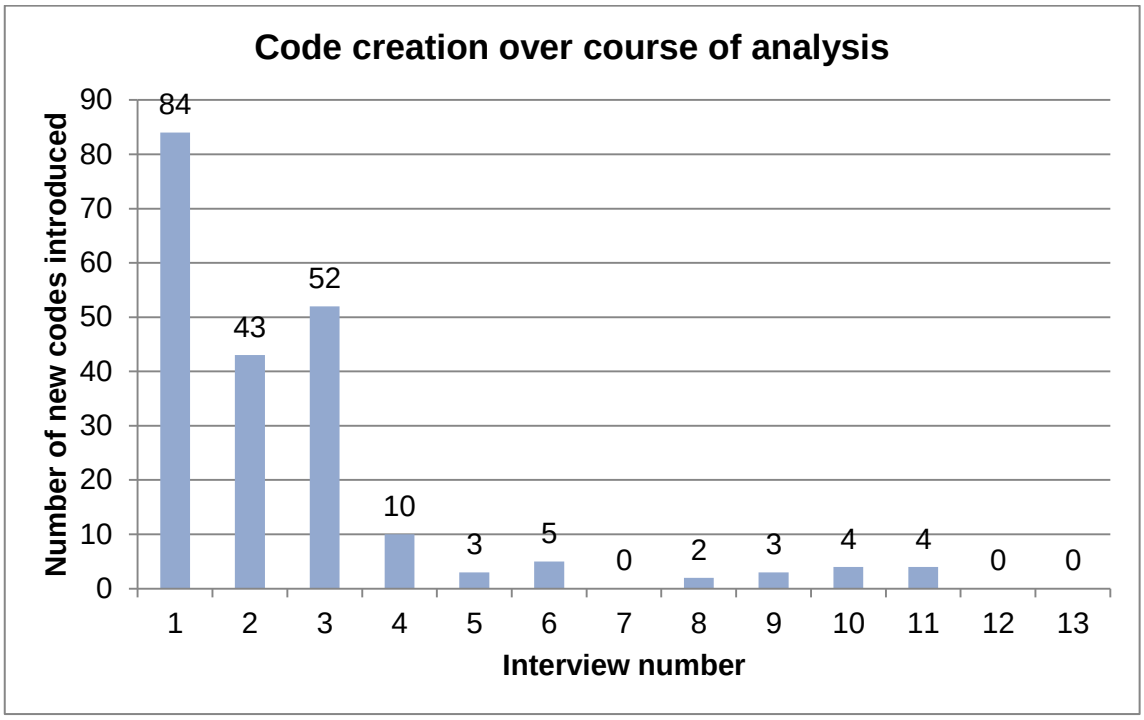
Table 5: Naming convention of transcribed documents

Gender	Industry	Perceived Innovation Level	Perceived Autonomy Level
Male	FinancialServices (used for Financial Services)	L (if respondent indicated level between 1-3)	L (if respondent indicated level between 1-3)
Female	Petroleum	M (if respondent indicated level between 4-6)	M (if respondent indicated level between 4-6)
	Telecomms (used for Telecommunications)	H (if respondent indicated level between 7-10)	H (if respondent indicated level between 7-10)
	Industrials		
	Technology		
	ConsumerGoods (used for Consumer Goods)		

5.4.2 Data saturation tests

A sample of 14 respondents across 13 interviews was interviewed. To test for code saturation, a record was kept of the new codes that were introduced as the qualitative data analysis progressed. This is demonstrated in Figure 4, which shows that data saturation through coding has indeed been reached.

Figure 4: New code creation over the data analysis



A total of 210 new codes were created in the research analysis. Figure 4 demonstrates that 90% of new codes (189 out of a total of 210 codes) were created in the first four interviews. The remaining 10% of new codes (21 out of a total of 210 codes) were introduced during the next seven interviews. There were no new codes created in the last two interviews. Interview 3 had more codes introduced than interview 2. This is largely driven by the interview duration, as it was a much longer interview compared to the other interviews with rich thick data shared by the respondent on their views and perceptions related to the topic. This confirms that coding saturation was reached, as it is not expected that additional interviews would have resulted in introducing many new codes to those that were discussed by previous respondents.

5.4.3 Word count analysis of the transcription

After the coding in the ATLAS.ti software, the transcriptions were analysed by looking at individual word counts. This provided the researcher with a sense of what were the most frequently occurring words during the interview process and as a tool of triangulating and validating the thematic analysis. An analysis was done on all the transcripts using individual word counts after the coding had been completed to get an appreciation of which words occurred the most during the interviews and how closely these words matched the coding table developed by the researcher.

Using the ATLAS.ti Word Cruncher analysis tool, a full list of all the words contained in the transcribed documents was produced. This represented a total of 5352 words and was transferred and analysed in Microsoft Excel. The full list was filtered to only include words that occurred with frequency of greater than three times, which resulted in 1932 words. This list was then analysed and non-descriptive words that did not have contextual meaning were also excluded. Some examples of the words that were ignored are “the”, “and”, “to”, “that”, “of”, and “you”. This reduced the list further to 441 words. In addition, the words were grouped where the meaning was similar because of different tenses or if the nouns were in singular or plural such as {idea, ideas, ideation}, and {innovate, innovating, innovation, innovations, innovative, innovativeness}. This reduced the list further to 135 words. The word list was pivoted and sorted in descending order by total word count.

The top 15 words with most frequent occurrence are shown below:

Table 6: Top 15 most frequent words

Rank	Word (grouped)	Total word count
1	Innovation	1137
2	Risk	885
3	Organisation	873
4	Process	679
5	Management	487
6	People	461
7	Idea	406
8	Business	359
9	Governance	343

Rank	Word (grouped)	Total word count
10	Client	268
11	Product	236
12	Internal	230
13	Team	225
14	Decision	210
15	Implementation	200

This can be visually represented by the word cloud below which was also created using the ATLAS.ti Word Cruncher analysis tool:

Figure 5: Word cloud analysis

5.4.3.1 Innovation

The most frequently occurring word is “innovation”. This represented a grouping of the words {innovate; innovating; innovation; innovations; innovative; and innovativeness}. This seems reasonable given that the research topic focusses on innovation as one of its primary research constructs. The research discussed the innovation process; risk management and internal governance in relation to innovation; innovation activities and efforts; shaping innovation; and the integration of stakeholder management in innovation process. For the word “innovation process”, the top co-occurring codes were customer focus, evaluation and ideation. These will be discussed in more detailed in section 5.5.1. The importance of customer focus in the innovation is articulated by Respondent 11:

> "… getting ideas is not necessarily the best way to approach innovation because sometimes you're just **putting lipstick on a pig** [***laughter***] – as they would call it – because you [are] solving for something that is wrong in the first place, so why make it better? So, that's why we've gone back to understanding **"What is the pain of the customers?" and solving for that**…. It's **always got to tie back to a problem in the customers' eyes... an unmet need, or a requirement or a desire or something**." [***emphasis added***]

Please refer to Table 23 in Appendix 6 which shows the list of codes used in the qualitative analysis process that contain the word "innovation". There were 18 codes that contained this word and included the different types of innovation (from process innovation to product innovation), the innovation process, the view of innovation, the perceived level of innovativeness, and how innovation is promoted and shaped in the organisation.

5.4.3.2 Risk

The word "risk" has the second most frequent word count. This is also congruent with the research topic, given that risk management is one of the other main research constructs. This represented a grouping of the words {risk; risks; and risky}. However, it did lose some of the idiosyncratic nature of phrases such as risk management, risk assessment, risk mitigation and risk process that would be associated with the word. For the words "risk management", the highest co-occurring code was governance, which is also congruent with the research topic. Please refer to Table 24 in Appendix 6, which shows the list of codes used in the qualitative analysis process that contain the word "risk". There were 18 codes that contained this word and it included aspects dealing with risk management, risk inclination, risk systems, risk initiatives, risk appetite, and the views of risk and risk management.

5.4.3.3 Organisation

The word "organisation" has the third most frequent word count. Although this was not initially considered as a theme of the research, the research topic does deal with innovation in large organisations and how it is influenced by the organisational context. Therefore, respondents often referenced the context of their own organisations. This represented a grouping of the words {organisation; organisational; organisations; company; companies}. Please refer to Table 25 in Appendix 6, which shows the list of codes used in the qualitative analysis process that contain the word "organisation".

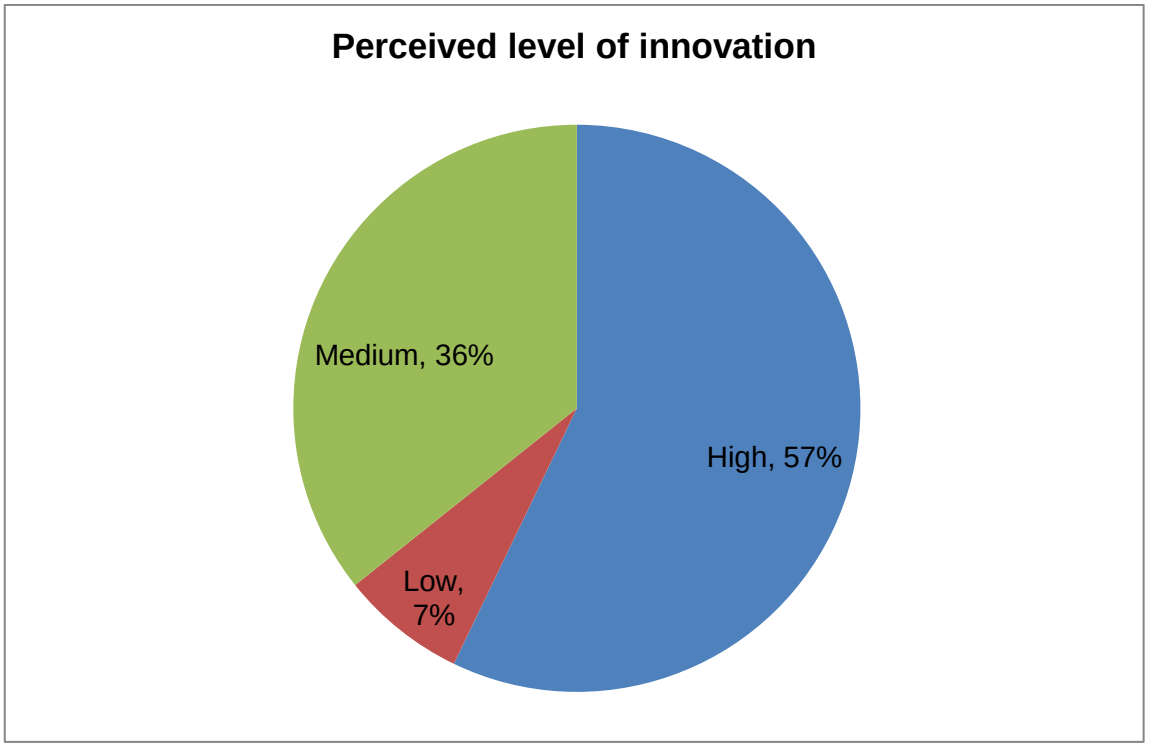
There were two codes and this dealt with the structure in the organisation and the contextual nature of the organisation.

5.5 Research question 1: Innovation process in relation to governance and risk processes and contextual attributes

Innovation was defined quite broadly for the purpose of this research study, given that the sample consisted of views across multiple industries. To ascertain the respondents' perception of their organisation's level of innovativeness, they were asked to rate this on a scale from 1 (very low) to 10 (very high). The innovation level was categorised into three groups, namely low (1-3), medium (4-6) and high (7-10).

This can be visually summarised by Figure 6:

Figure 6: Perceived level of innovation of the organisation



The above results were expected as the researcher tried to interview respondents in organisations that were known to be innovative. Therefore, there may a bias in the sample where the results may only be applicable for firms that are believed to be somewhat innovative.

Most respondents (57%) believed that their organisations had a high level of innovativeness. Most respondents tended to benchmark themselves against other competitors within their respective industries. Other respondents (36%) indicated a medium level of innovativeness. Only respondent 5 (7%) indicated that their organisation had a low level of innovativeness. However, a positive view of change was expressed in terms of mind-set and empowerment:

> "We're changing… so it's a **mind-set thing to start** with but it's **also an empowerment thing**… **if you are not empowered, why would you think of an innovative way to do something differently** if it is never going to go anywhere? If you [are] disempowered, you very quickly give up." [***emphasis added***]

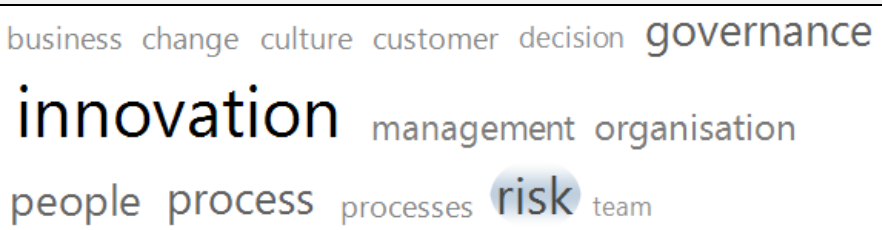
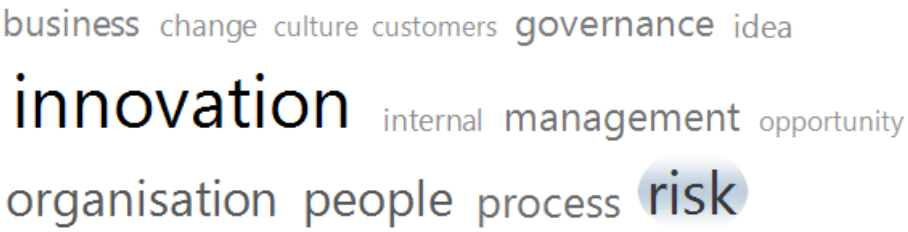
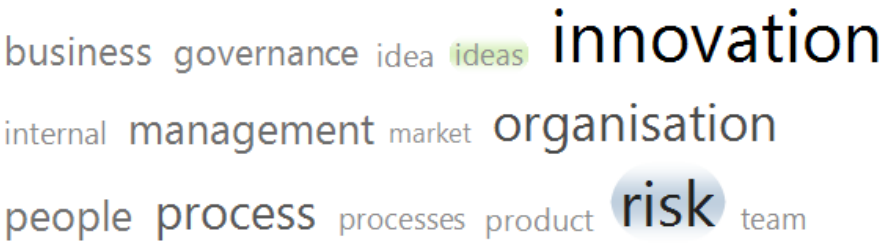
Respondent 6 warned that there are some aspects where one would not want any innovation at all, especially where one would need to adhere to mandated procedures, policies and controls that have been put in place. This highlighted that innovation needs to be encouraged in some areas while risk and governance controls needs to be followed in other areas.

> "There are **certain aspects for which you do not want innovation at all**. You have to have adherence to procedures – it is almost a "no brain, no thinking" exercise, apart from managing the risk… There are **other areas where you are really looking for innovation**." [***emphasis added***]

Respondent 10 also commented on the importance of innovation to stay relevant while protecting the existing business by stating, "You have to innovate to stay relevant, but equally [organisation] has an enormous portfolio of activities that need to be run and maintained". This highlighted the ambidextrous nature of maintaining conflicting innovation paths and managing competing tensions where the organisation has to protect its existing business but also needs to innovation in order to remain relevant.

When comparing the views between the low, medium and high levels of perceived innovativeness, the following word clouds are shown per grouping:

Table 7: Word cloud analysis by perceived level of innovation

Level of perceived innovation	
Low	
Medium	
High	

All organisations had “innovation” as their key word. This confirms that organisations see it as an important aspect for growth and sustainability and this is irrespective of the level of perceived innovativeness currently experienced by the organisation. However, the relative size of “risk” was different between organisations with high levels of innovativeness compared to those with lower levels of innovativeness. In addition, “governance” seemed to become more dominant in organisations with low levels of innovation, while “organisation”, “management”, “people” and “process” were more dominant in organisations with high levels of innovation.

5.5.1 Innovation process

The innovation process can be described as a complex, multi-hierarchical process. Six respondents (43%) described using a stage-gate approach to the innovation process. Some respondents have associated the stage-gate approach as an opportunity and checkpoint that could potentially allow them to test their thinking, adjust it where

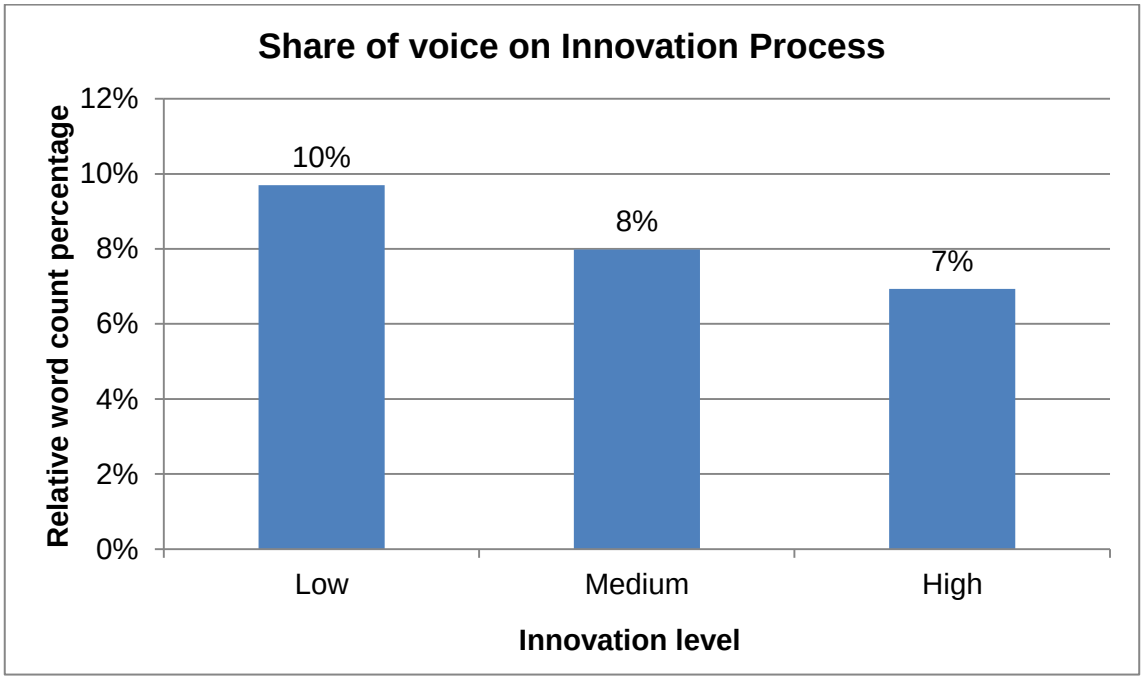
necessary, and validate it through testing. It assisted as a checkpoint to ensure that value was being added to the organisation.

Table 8: Stage-gate approach used in the innovation process

Respondent	Stage-gate approach
Respondent 10	"It's [a] **very clear stage-gate** so there are **opportunities** to say 'okay we are going to drop this idea, or it is a great idea and let's continue okay'."
Respondent 11	"… the **stage-gate** and well because of those **checkpoints** and to make sure that you **adding value** and that you've done the right things **at each step**…"
Respondent 14	"It is a **stage-gate model**, where we actually wait for the **test results before we continue**, and we **actually adjust our thinking** and our development in line with what we actually see from the consumer."

When splitting the data by the level of the perceived innovation of the organisation, respondents with low perceived levels of innovation spent a significantly longer amount of time (10%) discussing the innovation process (from ideation, to implementation, to evaluation) compared to those with medium to high levels of perceived innovation (at 8% and 7% respectively). Respondents spent 7% of the total interview time discussing the innovation process. This is shown by Figure 7:

Figure 7: Relative word count analysis of the innovation process by perceived level of innovativeness



5.5.1.1 Ideation

Several respondents (57%) described the process of devising an innovative idea – the ideation phase. The ideation phase is a "thinking" or conceptual phase where the idea needs to be well explained and articulated for participation and support of the business. Where a team is responsible to come up with innovative ideas, it was important that there was a balance from where the idea originated. Respondent 1 described the 20/80 rule, where 20% of ideas should come from the team responsible for innovation and the remaining 80% of ideas should come from the business itself. This was critical to ensure that there was a supportive environment that created a partnership between the teams in the organisation. Please refer to Table 27 in Appendix 6 for further details on responses received from respondents on the ideation phase.

An emerging theme was that there should not be any restrictions at this stage regarding the process, as one would not want to create restrictions that would constrain any ideas at a conceptual stage. Respondent 2 said that "… the level of ideas… is not really an issue at the ideation stage, because you are still thinking and these are all theoretical constraints, so what we do is… they do not want to restrict ideas by creating barriers". Respondent 11 indicated that ideation was built into the prototyping phase where this idea was tested with customers to get their view and made a key assumption of validating this against their feedback. Respondent 14 mentioned that some ideas were killed in the ideation phase after going back to customers based on the initial views received from them. This resulted in significant cost savings and served as a check point to validate against their feedback.

5.5.1.1.1 Ideation sources

An interesting theme to emerge was the different sources from where an innovative idea could originate:

Table 9: Emerging themes for the sources of ideation

Ideation source	Evidence
Market research	"I think we try to look at… there's a lot of **market research**…" (Respondent 8, ***emphasis added***) "**continuous monitoring** of the products' **performance relative to the market**" (Respondent 10, ***emphasis added***)
Processes	"So ideas would actually come from the **assessment of that process and the monitoring of its profitability**, its commerciality as a product." (Respondent 10, ***emphasis added***)

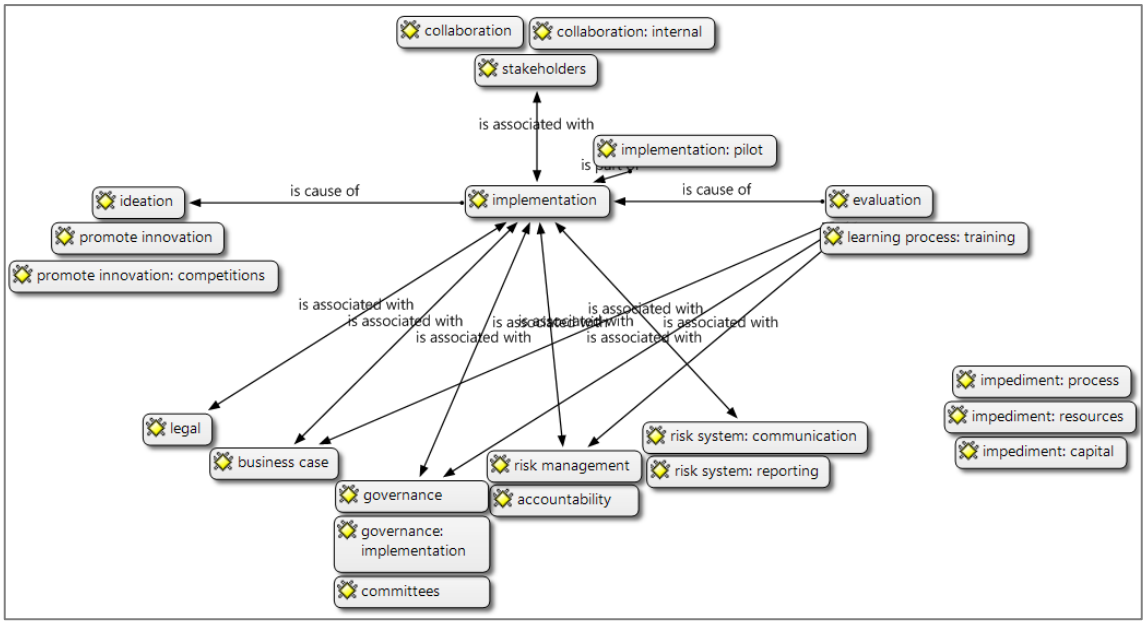
Ideation source	Evidence
Customers	"…in the final analysis the **customer ends up with the 360 portfolio** of constantly innovating products…" (Respondent 2, ***emphasis added***) "If we are bringing something to market or if we move it in a big and fundamental way, **we really want to keep our customers happy**, so you know we have a few key principles…" (Respondent 3, ***emphasis added***) "The innovation process starts with us **understanding what the customer need is, we spend extensive time understanding, you know customer issues**… what are the **customer gaps** that we have today or **value gaps in the customer journey** that we see." (Respondent 9, ***emphasis added***) "From **client feedback**. So, a **massive part of our business** and what we do is around client feedback. We **monitor it very closely**, particularly because we are a **relationship-driven** business." (Respondent 10, ***emphasis added***) "There is an understand phase that talks to **validating with the customer and talking to customers**, **identifying what their problems are** and understanding if that problem is worth solving." (Respondent 11, ***emphasis added***) "So we actually **start off with the consumer**, so **understanding the consumer at the nth level of degree detail**, to **understand what problems or jobs the consumer actually wants to get done**, from there we go back to the drawing board and understand what solutions we are going to take out of the consumer, that's still in the conceptual stage." (Respondent 14, ***emphasis added***)
Partnerships	"We are **relying on our partners to do the innovation** for us… but actually [organisation] is not the party who has to come up with those ideas internally and drive the innovation process". (Respondent 2, ***emphasis added***)
Brainstorming workshops	"**blue sky brainstorming sessions**" (Respondent 8, ***emphasis added***) "**brain workshops around white-boarding** and constructive criticism" (Respondent 13, ***emphasis added***)

A key source of information in the ideation phase of the innovation process was having customer focus. This is evident in the table above where half of the respondents (50%) discussed including the customer in the ideation phase. Several respondents suggested the importance of understanding what the customer needs and issues are and then trying to solve for these. There should also be validation with the customer to ensure that feedback is received when attempting to understand and solve for a particular issue faced by them. This emerged as an important theme to consider when undergoing an innovation initiative. Other ideation sources included market research; existing product design and management processes and the continuous monitoring thereof, through the reliance on partnerships to come up with ideas, as well as brainstorming sessions.

5.5.1.2 Implementation

In the implementation phase, the idea is developed and refined from the concept. It is at this stage that there appeared to be an increasing focus on risk management and governance, shown by Figure 8, the co-occurring codes linked to implementation below.

Figure 8: Co-occurring words for implementation



Half of the respondents (50%) highlighted the importance of their organisation buying into the innovation idea. This is assisted through better collaboration amongst people to implement an idea with increasing oversight from an increasing number of people within the organisation. In addition, respondents also noted the importance of rigorous and continuous monitoring post-implementation. Respondent 8 noted that the process of governance and risk management only starts playing a role once the idea has been generated and is deemed viable.

The key emerging themes in the implementation phases included having the appropriate lines of sight for approval and sign off. In this phase, it is assumed that the business case has been developed or approved in order to implement the idea. Key decisions are made at this stage and it is argued that the process becomes more rigorous and stringent with appropriate governance and risk management. The implementation phase would also typically involve more stakeholders and collaboration is required in order to implement more effectively. Therefore, stakeholder support and communication was critical to ensure that the organisation buys into the idea. There

should also be a constant monitoring process where the information is reviewed and assessed. This should also continue post-implementation. The common impediments associated with innovation in the implementation phase included capital, resources and process constraints. This is evidenced in Table 10 below of key themes that have emerged in the implementation phase:

Table 10: Emerging themes for implementation phase

Implementation phase	Evidence
Approval, oversight and sign off	"At the implementation stage it is really about ensuring that the **oversight teams** have oversight over the new products and **ensure sign off before we launch**…" (Respondent 2, ***emphasis added***) "And then it will be implemented, obviously **provided everything is working and all stakeholders have signed off on the testing**." (Respondent 7, ***emphasis added***)
Stakeholder buy-in and collaboration	"… the **business unit has absorbed that idea into their normal structures**…" (Respondent 1, ***emphasis added***) "At implementation stage, this assumes that we have taken it… So, the way we deal with it, is that **we actually make sure that every operating company buys into the model**. We are talking about **stakeholders**…" (Respondent 2, ***emphasis added***) **"People are more involved**, you are having more discussions at a senior level, **decision-making takes place** at the Steerco and more, with that takes recommendations to the governance board, so the **process changes**." (Respondent 9, ***emphasis added***) ""I think from an implementation point of view, we're moving into a model where **you don't want implementation end to end**, and **you actually have to collaborate with other people to implement**." (Respondent 14, ***emphasis added***)
Risk management and governance	"They have taken ideas from the business or their own, developed a **business case that they got approved by the business and business unit**. And then from there, the **business unit has absorbed that idea into their normal structures** where they have their **normal corporate risk management framework that this needs to go through**..." (Respondent 1, ***emphasis added***) "There is a **whole innovation process that's kind of outside of governance involved in generating ideas** and coming up with ideas that we think are viable**. Once we've got an idea that's viable then it goes into a process where the risk management governance comes in**…" (Respondent 8, ***emphasis added***)

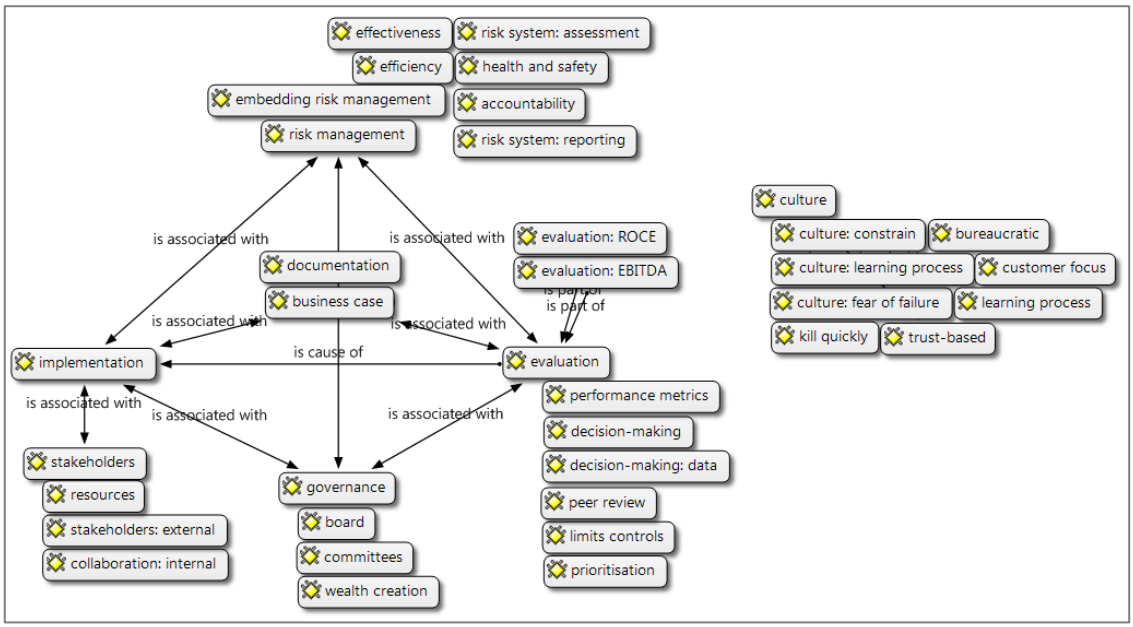
Implementation phase	Evidence
Monitoring and oversight	"And I suppose once its implemented, internally there is a **monitoring process** that starts." (Respondent 7, ***emphasis added***) "Then, **post implementation** there will be the same processes where there will be **constant monitoring and review** of the product and if it's **meeting expectations, creating risks**, behaving as it should... **each step of the way it's closely monitored and regularly reviewed by the various layers and committees in place to assess the risk**." (Respondent 8, ***emphasis added***)
Rigorous process	"We also go through a **very vigorous process of legal governance** to make sure that all of the process services that we are launching **comply with relevant legislation**. We **validate the financial models** by getting our own financial team involved, to have a look at it properly and we work with our marketing team to make sure that it is consistent with the marketing campaign." (Respondent 2, ***emphasis added***) "As you [get] further down the process, **you govern**… it **becomes more stringent**… I would say in defining it becomes **more stringent because there you are actually making the key decisions**." (Respondent 9, ***emphasis added***)
Impediments	"I think the only constraint on the actual implementation would be people – we just **don't have enough people resources** to get it done. And **budget**. But also I suppose another thing you can throw in, aside from governance and regulation, is **systems**." (Respondent 7, ***emphasis added***)

5.5.1.3 Evaluation

In the evaluation phase, the results indicated that some form of governance and risk management were reported by 71% of respondents. Respondents used different evaluation criteria to assess their innovation efforts. Culture was associated with evaluation as evidenced by Respondent 12 who said, "It's all about the customer now, that corporate culture change…" Some respondents strongly associated the evaluation criteria with a quantitative nature (e.g. returns, return on investment or capital employed, and the bottom line), while other respondents had a more nuanced approach by recognising both the quantitative and qualitative aspects, such as the social, cultural and environmental implications, and learning gained through the process. This is shown by Figure 9, of the co-occurring codes linked to evaluation. The interplay of risk management and governance is clearly visible, especially in the implementation and evaluation phases of the innovation process. In addition, it is observed that there are strong associations between these different constructs. For implementation, resources are required to collaborate to see the idea come to fruition. In evaluation, the key co-occurring codes that relate to this include performance

metrics, decision-making, adherence to limits and controls, prioritisation and peer review.

Figure 9: Co-occurring words for evaluation



In terms of evaluating innovation, there are both quantitative and qualitative aspects of the evaluation process. Half of the respondents (50%) discussed using both quantitative and qualitative aspects when evaluating innovation, although the criteria differed between respondents.

When looking at the quantitative categories for evaluation, the key categories that emerged in the findings were as follows: (1) returns; (2) income statement metrics; (3) balance sheet metrics; (4) market share and adoption; and (5) general financial benefits. Several respondents (43%) discussed returns in terms of the return on capital employed, return on investment, or return on equity. This would allow organisations to prioritise and allocate resources to initiatives which generate the greatest return. Other respondents (29%) discussed metrics that would affect the income statement such as revenue, sales or earnings to create growth and increase the profitability. Only one respondent discussed increasing market share and tracking the adoption rate of customers. Other respondents discussed the quantitative evaluation criteria more generally by referring to financial benefits. The evaluation criteria should however be determined upfront and agreed in the performance metrics of employees. Table 11 shows the evidence for the quantitative categories for evaluation:

Table 11: Quantitative categories for evaluation

Quantitative Evaluation Categories	Evidence
Returns	"We are a **return on capital-employed business**, so it's all about what capital are we earning, what capital is there on those returns…" (Respondent 2, ***emphasis added***) "… we have all the three main things; **ROR, IOR, ROI**." (Respondent 4, ***emphasis added***) "You tend to follow the idea that would **generate the biggest return**. And of course, you have to know your business and have an idea of which of those ideas would generate the best return to be able to **prioritise**, because you really want to **allocate resources on that basis**." (Respondent 6, ***emphasis added***) "… whether we delivering to the customer what the customer wants and that **would automatically drive ROE** and operating costs…" (Respondent 12, ***emphasis added***) ""So there'll be the normal risk management things around the **net present value calculations, potential returns on investment**, and all those type of checkpoints and gates will be built into the process." (Respondent 13, ***emphasis added***) "So there are a few criteria we use, I think the first criteria that we use is the hurdle rate, you need to cross the **hurdle in terms of return**…" (Respondent 14, ***emphasis added***)
Income	"…what **EBITDA** are we earning, and what **revenue** are we earning. Ultimately, you know, what sort of **cash are we generating**, and our new innovation efforts are measured in that way." (Respondent 2, ***emphasis added***) "I still think it tends to be, okay have we sold lots and lots of this, we are **still a sales layered organisation, so at the end of the day that turns to be the litmus test**." (Respondent 5, ***emphasis added***) "From a quantitative perspective, we'll look at the normal things like **income statement**… And again, it **depends on the innovation**. If it is a product that has an interest item, we will look at that, but we will look at it from a **profitability perspective**…" (Respondent 7, ***emphasis added***) "… in terms of evaluating innovation, I think at the end of the day a lot of it is **outcome based** you know does your, the service, the product, whatever it might be does …**create the growth, create the uplift**…" (Respondent 8, ***emphasis added***)
Balance sheet and capital	From a quantitative perspective, we'll look at the normal things like income statement, **balance sheet**... and then from a **capital perspective**." (Respondent 7, ***emphasis added***)
Market share and adoption	"We'll have quite a few metrics and being a tech company those metrics are actually quite tangible… they are about **adoption**; they're about **market share**." (Respondent 13, ***emphasis added***)
Financial benefits	"So I think we agree the **performance indicators upfront**... And that tells you, over the life of this product, what do we **expect the financial benefits to be**…" (Respondent 9, ***emphasis added***) "… and the process would not only look at if the process has **delivered what it is supposed to financially**…" (Respondent 10, ***emphasis added***)

When looking at the qualitative categories for evaluation, the key categories that emerged in the findings were as follows: (1) stakeholder impact; (2) learning; (3) strategic alignment; (4) social implications; (5) perception; and (6) safety. Some respondents (29%) discussed the impact an innovation would have on stakeholders, especially the customer. Certain other stakeholders were also considered such as advisors, partners, or employees. Two respondents used the learning opportunity as an evaluation criterion for innovation and this seemed to be closely linked to the culture in the organisation. Two other respondents discussed the alignment of the evaluation criteria to strategy such that the brand value must be considered or efficiencies should be gained. The remaining individual respondents discussed the social implications an innovation would have or the impact it would have on organisational health; what the perception would be in the market; and the safety impact respectively. Table 12 shows the evidence for the qualitative categories for evaluation:

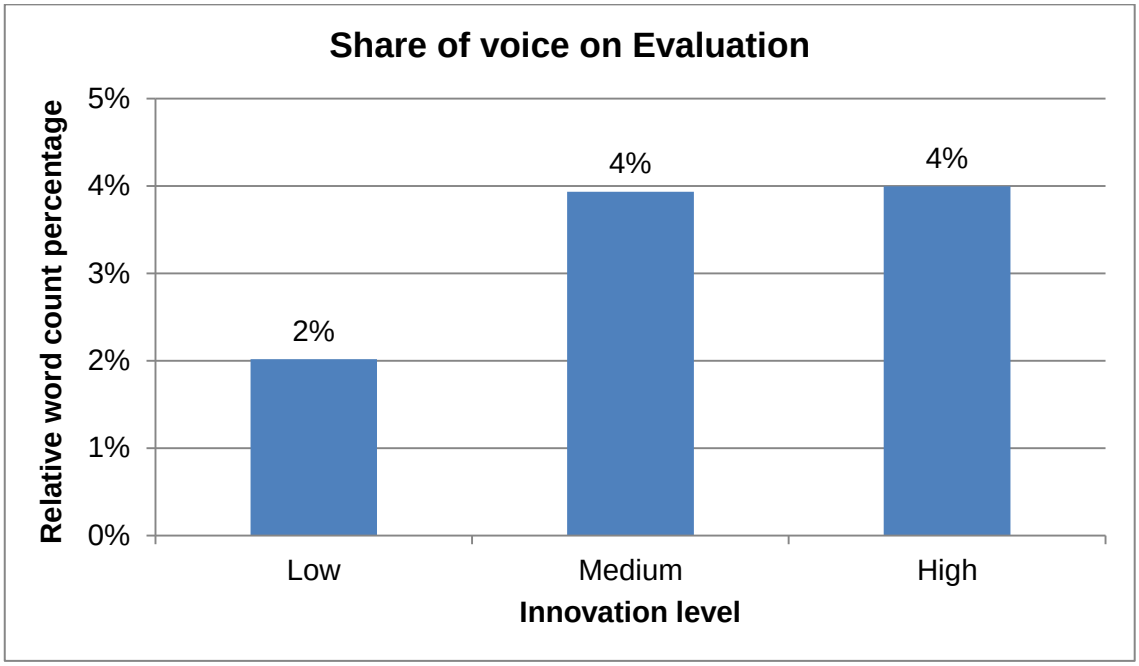
Table 12: Qualitative categories for evaluation

Qualitative Evaluation Categories	Evidence
Stakeholder impact (including customers)	"… what do we expect the financial benefits to be, **the customer impact**…" (Respondent 9, ***emphasis added***) "It's **all about the customer now**, that **corporate culture change** is… hopefully we going to get there **whether we delivering to the customer what the customer wants**…" (Respondent 12, ***emphasis added***) "So, we'll have quite a few metrics… they're about what we call **CPX (customer and partner experience)**. **How do our consumers feel?**" (Respondent 13, ***emphasis added***) "So there are a few criteria we use… we look at **equity with consumers, advisor force**… Does it increase the **morale of staff?**" (Respondent 14, ***emphasis added***)
Learning	"I would **evaluate it across learning** and are we going to learn something. We are not looking at the financial returns, we are not a venture capitalist, there is never any consideration that we put the money in here, say $5000, and then it will probably be worth 20 million in three years' time." (Respondent 1, ***emphasis added***) "… and the process would not only look at if the process has delivered what it is supposed to financially but also by enlarge the **learning of how the opportunity would run as an idea**, and then **to implement it what learning can be extracted from that**, so that happens with all the options you have implemented, so, yeah I would **definitely say there is a learning culture around innovation**." (Respondent 10, ***emphasis added***)

Qualitative Evaluation Categories	Evidence
Strategy, brand and efficiency	"…in terms of evaluating innovation, I think at the end of the day a lot of it is **outcome based** you know does your, the service, the product, whatever it might be does it **create the efficiency**… whatever the **stated aim of the innovation** was…" (Respondent 8, ***emphasis added***) "So there are a few criteria we use, , does it mean that our **brand is grown in aim of strategy wellness**, we also look at how fast it is going to accelerate, **accelerating of strategy** is valuable in nature…" (Respondent 14, ***emphasis added***)
Social implications	"Now, **return need not only be measured in monetary terms**. There are **certain ones that must be measured in social terms or its contribution to organisational health**." (Respondent 6, ***emphasis added***)
Perception	"And **perception is also quite an interesting thing because it can't always be measured as accurately** as you want it to be **but you can definitely take a litmus test on it**." (Respondent 13, ***emphasis added***)
Safety	"And that tells you, over the life of this product, what do we expect… **the safety impact to be**. Whether they're **quantitative or qualitative indicators** and we get measured against that going forward." (Respondent 9, ***emphasis added***)

When splitting the data by the level of the perceived innovation of the organisation, respondents with low perceived levels of innovation spent significantly less time (2%) discussing evaluation compared to those with medium to high levels of perceived innovation (both at approximately 4% respectively). Respondents spent 4% of the total interview time discussing evaluation. This could suggest that organisations with high levels of innovativeness are more aware of evaluation and continuous monitoring of their innovation activities. This is also evidenced by a comment made by Respondent 7 who said, "So the continuous monitoring of the products' performance relative to the market, relative to its original business case and intention…" This is shown by Figure 10:

Figure 10: Word count analysis of evaluation by perceived level of innovativeness

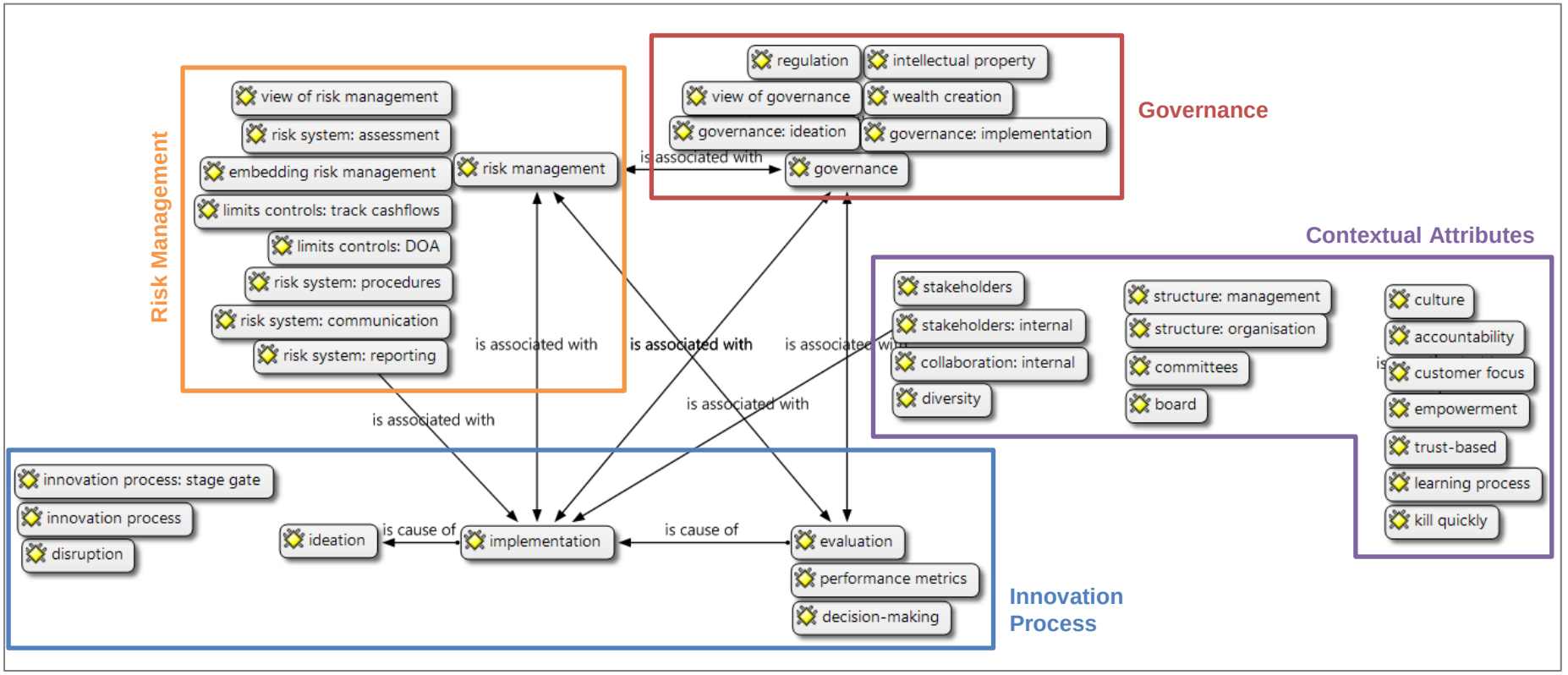


5.5.2 Governance and risk management processes

The co-occurring codes for risk management and governance are shown in Figure 11. From the view below, it was clear the associations and interdependencies that risk management and governance have with the implementation and evaluation phases of the innovation process. Governance and risk management were not strongly associated to the ideation phase of the innovation process. In addition, the contextual attributes of culture, structures and resources (through the codes of stakeholders and collaboration) were also co-occurring codes.

The outlook and perception towards governance and risk management also affect innovation. Respondents had different views on governance, where some believed it encouraged or assisted innovation, others believed it stifled innovation, and a few highlighted the importance of having a balance. All respondents (100%) agreed that governance was important in ensuring that one does not contravene any legal or regulatory requirements or circumnavigate any procedures, policies, practices or controls. The view was that it controlled and potentially restricted innovation, though the challenge is that it should not be viewed as a constraint but rather as an opportunity. However, the other view was that “businesses fail for one or two reasons: either a lack of governance or a lack of risk mitigation strategies.”

Figure 11: Co-occurring words for risk management and governance



Where governance was viewed in a positive light, respondents saw it as an opportunity to make the innovation a reality, rather than a constraint. It ensured that they aligned to best practices to better manage innovation in the organisation. Where governance was viewed in a negative light, it was believed to constrain and stifle innovation. However, even in the case where governance was viewed in a negative light, the opinion from the respondent was that "there still has governance, so I am not advocating no governance". Employees believed that governance prevented them from completing their duties and would potentially find creative ways to circumnavigate the internal governance controls that were put in place. In addition, it could also be viewed as a defence mechanism to divert blame for not getting work completed due to approval and governance processes that need to be adhered to, and therefore add to internal slack within the organisation.

It was also argued that governance needs to radically change to remain relevant and keep up with new innovation practices. However, Respondent 11 argued that the control systems are only perceived barriers by stating, "I think some control systems are just virtually there – they not necessarily actual barriers but perceived barriers that people can't get by". Therefore, it is important that governance and risk management practices should be balanced when lending themselves to being innovative, as risks must be taken to be innovative. There should be a partnership between risk and compliance within the innovation process to assist, encourage and better manage innovation. Table 13 highlights some different views on governance from selected respondents:

Table 13: View of governance

View of governance	Evidence
Positive	**Governance proves to ensure that not only do we comply**, but do we **align to best practice** and those **governance practices have certainly helped us to manage innovation better** in this organisation". (Respondent 2, ***emphasis added***)
Negative	"…the **less governance the better on innovation**. The **governance always seeks to control the risks** and I do not think that is what governance is supposed to do. **Governance is there to judge the appropriate risk levels** that you are exposed to **as opposed to controlling**…" (Respondent 3, ***emphasis added***)

View of governance	Evidence
Balanced	Sometimes **some of the governance processes are prohibitive**… **some risk management techniques or risk management ideals wouldn't necessarily lend themselves to being innovative**. And, at the end of the day, it becomes entrepreneurial. **You've got to take risk to be innovative. So striking a balance is important**." (Respondent 13, ***emphasis added***)

The key themes that emerged for governance and risk management that could potentially drive value creation for organisations are as follows: (1) it allows for seeking the upside potential of risk rather than only focussing on risk mitigation; and (2) it allows for a partnership with business. This is evidenced in Table 14:

Table 14: Key themes of risk management and governance to drive value creation

Key themes	Evidence of risk management and governance to drive value creation
Upside potential of risk	"If you **mitigate all the risk outside**… **there is going to be no upside for you**, and **risk management** for me, it **is not putting things in place to prevent the risks from happening**, it is able to **accept the risk, and to understand what your scenario should be, should certain of these risks materialise**. For me, risk management more is it is the **ability to react to change to adapt to certain scenarios** that you hopefully have **foreseen as possible outcomes**..." (Respondent 3, ***emphasis added***)
Partnership	"But if you look broader at risk itself… [we] **actually want to partner with business** and **see it as an opportunity rather than as a constraint**." (Respondent 7, ***emphasis added***)

5.5.3 Impediments and challenges to innovation

Respondents were asked to describe the major impediments or challenges they face within the context of their organisation that prevent innovation.

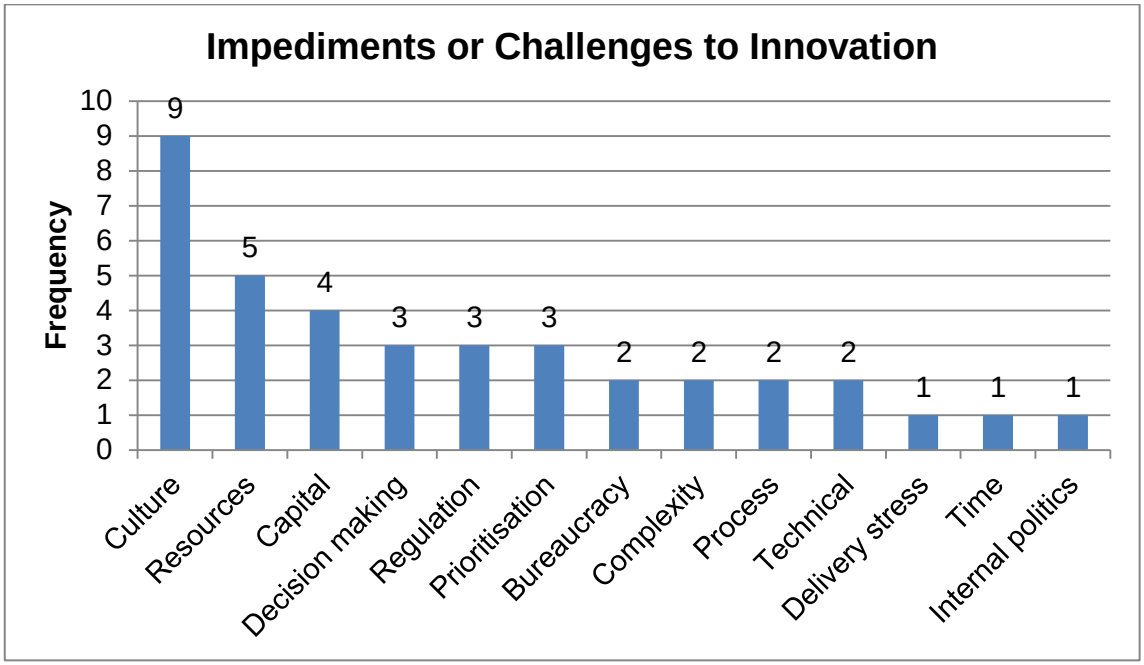
Table 15 summarises the respondents' views:

Table 15: Key impediments or challenges per respondent

Respondent	Impediment 1	Impediment 2	Impediment 3	Impediment 4	Impediment 5
Respondent 1	Culture	Decision-making			
Respondent 2	Culture	Decision-making	Technical	Prioritisation	Capital
Respondent 3	Delivery stress	Resources	Culture	Capital	
Respondent 4	Regulation	Resources	Technical		
Respondent 5	Culture	Process			
Respondent 6	Decision-making	Internal politics			
Respondent 7	Resources	Capital	Culture	Regulation	
Respondent 8	Regulation	Complexity			
Respondent 9	Resources	Capital			
Respondent 10	Culture	Time	Complexity		
Respondent 11	Culture	Bureaucracy	Prioritisation		
Respondent 12	Bureaucracy	Prioritisation	Culture		
Respondent 13	Resources	Process			
Respondent 14	Culture				

Figure 12 shows the frequency of the impediments or challenges to innovation ranked from highest to lowest occurrence. Culture (nine respondents), resources (five respondents) and capital (four respondents) were the major impediments or challenges faced by organisations that would prevent innovation. Surprisingly, risk management or internal governance processes did not come as one of the main impediments or challenges. However, quick decision-making and process were cited as challenges faced by organisation. In addition, time and internal politics were directly cited as the least frequent impediments or challenges to innovation. Please refer to the culture contextual attribute in section 5.5.4.2.

Figure 12: Impediments or challenges to innovation



5.5.4 Contextual attributes

For this research study, the following contextual attributes were addressed: (1) structures; (2) culture; and (3) resources (in terms of human capital).

5.5.4.1 Structures

The structures were assessed in terms of management structures and organisational structure.

5.5.4.1.1 Management structures

Many respondents (86%) discussed formal committees that would be responsible for making decisions on innovation. These could include Executive Committees (EXCOs), prioritisation committees, Management Committees (MANCOs) or other specialised forums. In some circumstances, new innovation initiatives were discussed or may have required approval at board level. Please refer to Table 28 in Appendix 6, which shows a summary of respondents' comments on management structures.

Respondents also mentioned specialised functions that are often involved with the governance aspect of innovation, for example, legal, audit, risk, compliance and so on. From an informal perspective, socialisation of ideas needs to occur with key leaders

within the organisation prior to it going through any of the formal committees. Respondents also cited accessibility to these forums as a competitive advantage where it allowed for quick decision-making. Some organisations had centralised teams or assigned champions responsible for innovation, while others did not assign ownership for innovation for fear it sent the wrong message to other employees that their job is not to innovative.

5.5.4.1.2 Organisational structures

Six respondents (43%) discussed their respective organisational structures as being hierarchical. This structure was described as being “focussed” with clear reporting lines that provided good governance once an idea has been conceived. Some disadvantages were that employees may not be equipped with all the information at various levels in the organisation or that they do not liaise with other department for cross-referencing purposes. In order to encourage close collaborations, one of the respondents mentioned that they use dotted reporting lines for some functions within their organisation. Two respondents (14%) described having a flat organisational structure with clear reporting lines and accountability. Only one respondent (7%) described having a matrix organisational structure that encouraged collaboration to “create better ideas and solve problems together”. The remaining respondents described their structures generically in terms of differing from department to department, or split into relevant business units, or designed to operate and run legacy business. Please refer to Table 29 in Appendix 6, which shows a summary of respondents’ comments on organisational structures.

Three respondents indicated that their organisations had set up separate innovation hubs, while four respondents mentioned that their organisations are considering venture capital agreements or setting up a separate innovation unit. The reason cited by one of the respondents was that “the culture would not change if they set it up inside the business”. It was also noted that a small company may become the next competitor to a large organisation. This view was discussed by Respondent 2, who said:

> “We have recognised that **certain amounts of innovation that happens at big companies…** but **building the next competitor** to WhatsApp or Facebook, **that’s going to come out of a small company**, so often what you have to do is you have to **create a portfolio approach, you have got big initiatives, and you have got small initiatives**.... You create a portfolio initiative and then you run a corporate venturing programme, where

you **bring the venture capital programme inside the organisation**. What that does, **that creates the right level of governance to ensure that you drive out the right investments, in the right things**, and then you **prune the right ideas, at the right time, or accelerate them** at the right time if you need to." [***emphasis added***]

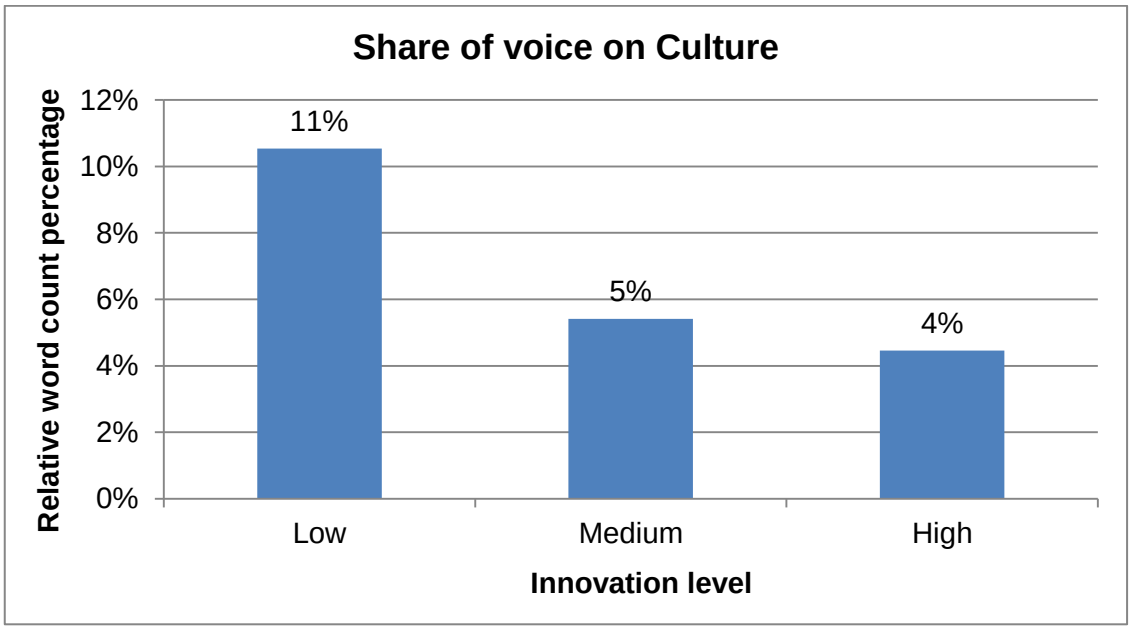
As previously mentioned in section 5.3.1.1, the researcher also had the opportunity to visit the innovation hubs of two of the organisations. The colourful and vibrant colours were in stark contrast to the rest of the organisation. This could suggest that the organisations are trying to create a different culture in their innovation hubs to spark creativity and encourage innovative thinking.

5.5.4.2 Culture

In section 5.5.3 above, culture was shown as the most frequent impediment to innovation among respondents. This section looks at culture by assessing it against risk aversion and bureaucracy; whether it is viewed as a learning process; and how the organisation deals with failure and resistance to change.

When splitting the data by the level of the perceived innovation of the organisation, respondents with low perceived levels of innovation spent a disproportionate amount of time (11%) discussing culture compared to those with medium to high levels of perceived innovation (at 5% and 4% respectively). Overall, respondents spent 5% of the total interview time discussing culture. This is shown by Figure 13:

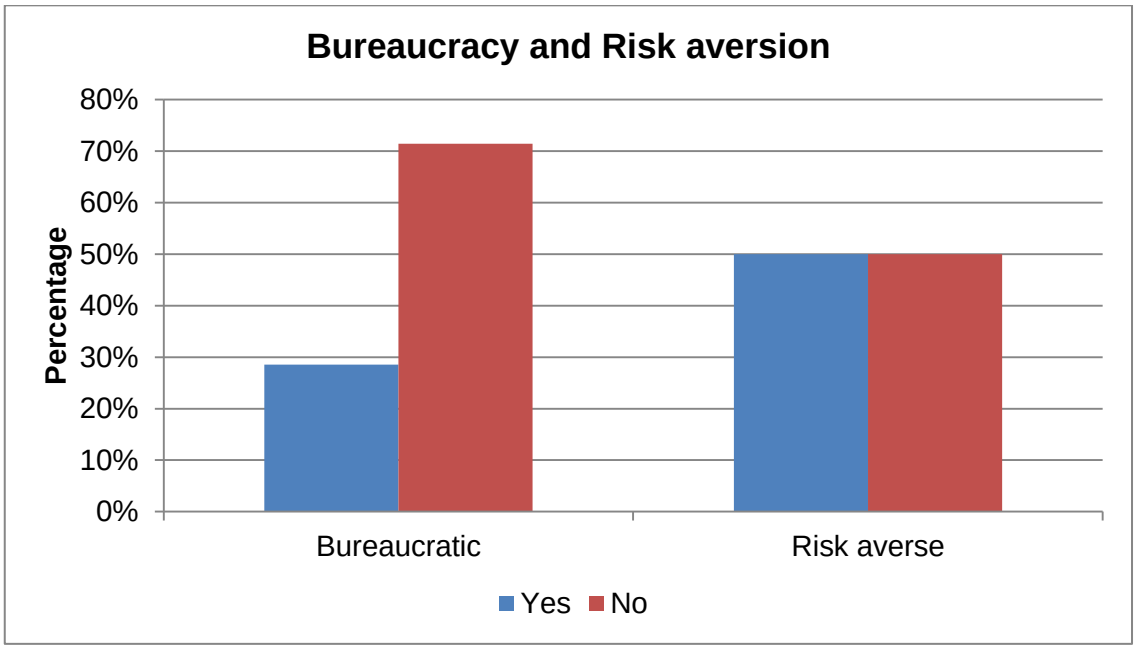
Figure 13: Word count analysis of culture by perceived level of innovativeness



5.5.4.2.1 Bureaucracy and risk aversion

Most respondents did not believe that their organisations were bureaucratic, where only 29% of respondents answered with an affirmative response. Respondents associated not being bureaucratic with their organisation “continually been innovative” or “not scared to try new things”. Half the respondents (50%) thought their organisations were risk averse.

Figure 14: Bureaucracy and risk aversion of the organisation



5.5.4.2.2 Learning process

All the respondents (100%) indicated that innovation is regarded as a learning process in their respective organisations. Several respondents (43%) had strong positive affirmations by using the following words “absolutely”, “definitely”, or “oh, for sure”. Some respondents indicated that their organisations learnt slowly but the main theme that emerged was continuous improvement. There was also value in taking corrective measures quickly if smaller steps are taken. This is evidenced by the following responses in Table 16:

Table 16: Respondents' comments on innovation being regarded as a learning process

Respondent	Evidence
Respondent 1	"I think so… I think people need to understand there is **value in taking smaller steps more often** and that a failure of a smaller step can be corrected, much quicker to an over step." [***emphasis added***]
Respondent 3	"Ja, I think so. Ja look **we are a learning organisation**… we learn slowly, but we definitely are a learning organisation, and I think, you know and **we do sort of continuous improvement here**." [***emphasis added***]
Respondent 4	"Yes, yes…**you can't innovate if you are not learning**, so **if you do one thing and it fails and you stop then there is no value to it**." [***emphasis added***]
Respondent 13	"Oh, for sure. Yeah, I mean, I mentioned previously about **failing fast**. Yeah, **innovation** is one of those things that **has to be continuous**. You don't just come out and say, "I'm doing it once and now I walk away". **It's about continuous improvement**." [***emphasis added***]

Respondents indicated that innovation is not only about learning itself but also about how you deal with overcoming failure by treating it as a learning opportunity. This is linked to section 5.5.4.2.3 below, as it lends itself to continuous improvement by also recognising the way the organisation treats failure.

5.5.4.2.3 Dealing with failure

It is important that the organisation can deal with failure. A respondent indicated that failure should not be viewed as such but rather as part of the innovation process. It should be dealt with philosophically, especially in the innovation space where it is a "given" that many ideas would not come to fruition. In addition, it is important that resources are allowed to make mistakes. This was stated by Respondent 6 who said, "People should be allowed to make mistakes, within reason of course. Mistakes should not really be frowned upon and there should be room for mishaps and mistakes, provided of course it is within the environment where you expect innovation". Many respondents spoke positively about encouraging mistakes where some mentioned "We actively encourage mistakes and we actively encourage people to take decisions" or "We actually applaud failure to some extent".

The key emerging themes were the concepts of failing fast with quick decision-making, empowerment, learning process and accountability. A culture that is accepting of failure allows for it to be viewed as an opportunity such that it can recover quickly from such a situation. To an extent, there still has to be accountability and constant monitoring to

ensure that the relevant processes are working correctly. The key themes are represented by views of the respondents in Table 17:

Table 17: Key themes when dealing with failure

Key themes	Evidence
Accountability	"… and it is not necessarily viewed as failure, but rather part of the innovation process, and then failure I guess post launch you know, and if something doesn't work as well, obviously it is **not punished** – it is viewed as an **opportunity to improve** and I guess **there is accountability** to the extent that, you know we have **got to monitor** that everything we do is working…" (Respondent 8, ***emphasis added***)
Failing fast	"… innovation fails often but, you just **have to kill failure quickly**." (Respondent 3, ***emphasis added***) "Internally there is a **corporate culture of failing fast**." (Respondent 13, ***emphasis added***) "We want to test and learn… failure is not a bad thing **as long as you can recover quickly**, and I think **most organisations fail to recover quickly –** they **dwell on the fact that they failed** and they don't pick themselves up again, you need to **design your company to recover quickly**." (Respondent 14, ***emphasis added***)
Empowerment and learning process	"… we **actively encourage mistakes** and we **actively encourage people to take decisions** and to and if they are wrong that is okay, we will deal with it, let's just make certain that **we are learning from the mistake that we are making**…" (Respondent 3, ***emphasis added***) "You are **empowered again** to go through it and you will have a better year and then over the lifetime of your career, you still have the **role to develop**, because **those learnings that you have taken**, will help you going forward, yes." (Respondent 9, ***emphasis added***)

5.5.4.2.4 Resistance to change

Most respondents (86%) indicated that there is resistance to change in their organisations. Respondent 6 likened an organisation to an organism by stating that "any organism, like an organisation, always resists change. You always have to be aware of resistance to change. It is always there. It is human nature". Respondent 3 mentioned that this may be affected depending on level of seniority in the organisation by saying that "I find it more at the junior levels of the organisation, or lower levels of the organisation", while Respondent 4 suggested that it happens in another department in the organisation. Two respondents (14%) mentioned that there is no resistance to change because they "strive for continuous improvement" or they "are in constant change". Respondent 7 said that having a "risk conscious approach" lends itself to a "nice balance that you can negotiate". However, a few respondents referred to the key themes of leadership, communication and getting buy-in to an idea. This is summarised below:

Table 18: Key themes when dealing with resistance to change

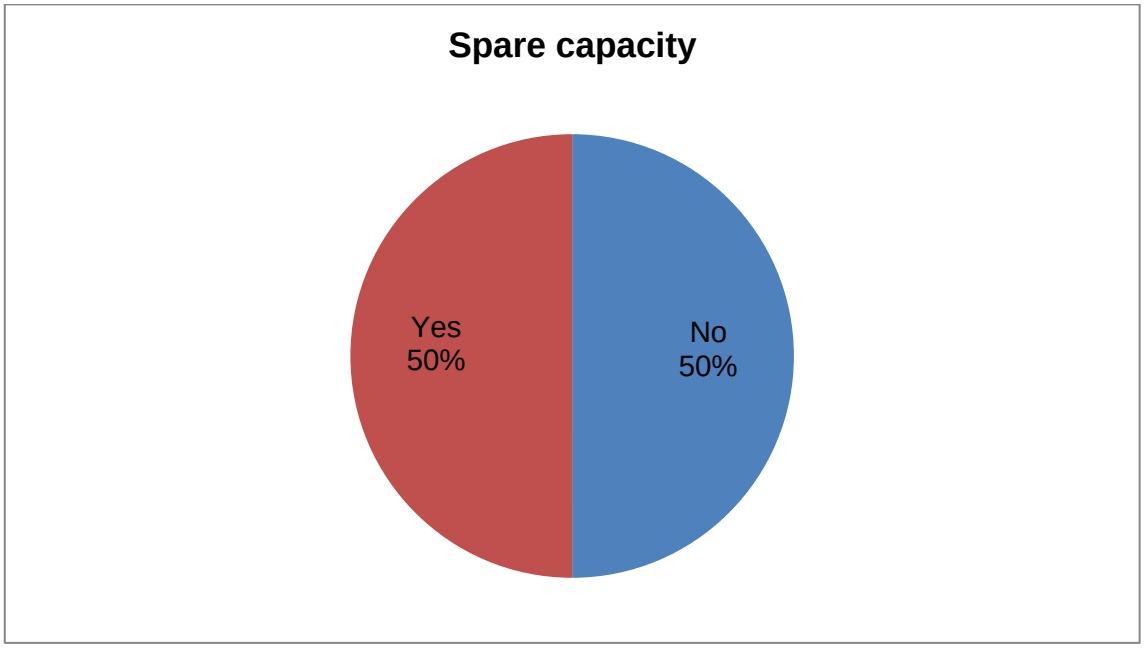
Key themes	Evidence
Leadership	"I think there is always resistance to change, but that **really is all about leadership and management.**" (Respondent 8, ***emphasis added***)
Buy-in	"You work with people, right, you do not want to instruct people, because you can guarantee that a thing does not work because you instruct people… "Do it because I said so" [is] never going to work. So, instructing people does not work, so generally we… **involve them in the process** and then hopefully once they are in the process, we can **convince them that they are wrong**." (Respondent 2, ***emphasis added***) "You have to sell the idea. You have to get **buy-in into an idea**." (Respondent 6, ***emphasis added***) "So a lot of what you do on a day-to-day basis is **negotiation in terms of how you get your idea across the line** or you **get somebody to buy into your idea**. Because you have to **have that buy-in as part of the process**." (Respondent 7, ***emphasis added***)
Communication	"…In an organisation of one, no resistance to change because the one person who has the idea is the one person who is going to change and then implement it because **you don't need to take people on that journey.**" (Respondent 10, ***emphasis added***) "I think it's how the organisation deals with that change, the **messaging around the change**." (Respondent 13, ***emphasis added***) "What we're getting better at, is **positioning why the change is happening**. And I think if you don't position why that happens, then people struggle." (Respondent 14, ***emphasis added***)

5.5.4.3 Resources

5.5.4.3.1 Spare capacity

Half the respondents (50%) indicated that their organisations have spare capacity, while the other half indicated that their organisations do not have any spare capacity. This is shown in Figure 15. Some respondents indicated that their organisation is lean from a people perspective, while others indicated that although there is no spare capacity, they would like to be in a strategic position to have some capacity.

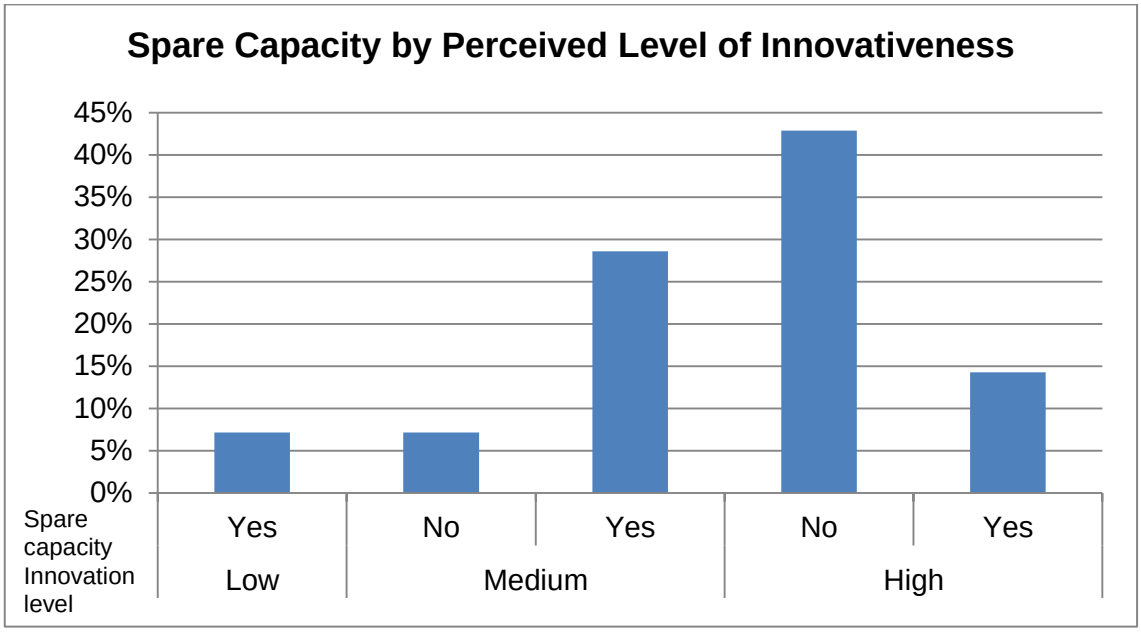
Figure 15: Spare capacity in the organisation



There were conflicting views on spare capacity where some respondents did not believe that organisations should be run lean without much organisational slack. This was substantiated by Respondent 6, who said, “There is never spare capacity in a well-run, well-oiled, lean organisation… the most precious commodity is management time, and the time of the people involved of course”. In contrast to this, others believe that there is spare capacity that could potentially be built up in some areas that were not expected within the organisation depending on the view of individual. This was noted by Respondent 14, who said, “Depends who you ask, you know the age-old thing, everybody says everybody else has spare capacity but I’m lean, that’s always the case”. This spare capacity should, however, be channelled into implementing the strategic objectives of the organisation.

When comparing spare capacity to the perceived level of innovativeness, most of the organisations with high levels of perceived innovativeness did not have much organisational slack. In contrast, firms with low or medium levels of perceived innovation indicated that they did have spare capacity. This is shown in Figure 16.

Figure 16: Spare capacity by perceived level of innovativeness



One of the respondents (Respondent 13) indicated that *prioritisation* of capacity is important:

> "So, I wouldn't necessarily call that spare capacity. I would **call that prioritisation of capacity** rather. We definitely have prioritisation of capacity. I think **any your organisation that says they have spare capacity to do stuff, is probably doing something wrong**. We don't necessarily just have people sitting around doing nothing waiting for somebody to bring an idea and then push it into a process. I would **change it to prioritisation**. Yes. **Is there a constraint with regards to getting certain ideas through the process given resource constraints? Absolutely. Do we mitigate our risk in that regard? For sure.** So, yes, it can become problematic with regards to getting the people at the right times. Does that delay our innovation cycle? Yes. Will I say it's debilitating? No." [***emphasis added***]

5.5.4.3.2 Human capital

All the respondents (100%) indicated that human capital is an enabling factor for innovation. Only one of the respondents (Respondent 10) indicated that it could be both by stating, "Yes and no. I mean there is never a challenge when you have had the idea". This view was differentiated between the ideation and implementation stages of innovation where you may have an individual that naturally has an entrepreneurial and innovative spirit when it comes to implementing an idea. There was also a view that the competitive success of an organisation relied on its people where Respondent 6 argued that human capital is "not an enabling factor, it is an essential factor – it is the

only factor". It was viewed that human capital was one of the most important aspects of a successful organisation, as the "real strength of an organisation lies in its people".

Respondent 9 indicated the importance of diversity of viewpoints and skillset when hiring people, as well as the resilience of an individual when implementing a solution:

> "I **look for people who think significantly different to the way I think because that is where the value-add comes in**.... It is the individual that **will help the ideation process,** also the **resilience of the individual**, the person who has failed, who has been through a few of those, the **resilience of the individual to take you to that stage-gate** is so important." ***[emphasis added]***

However, another respondent argued that it is not only about skillset but rather, their passion for innovation and flexibility that have a larger impact. The individual should be able to be "flexible, to change their mind, [and] engage people". Respondent 1 stated, "You have to have the right people but I don't think it's an ultimate question of skill, it is a question of passion… so focus on passion and people's willingness to engage…". The highlighted the cultural aspect of having an innovative spirit and being open to change.

5.5.5 Conclusion

To explore the interplay between corporate innovation, risk management and internal governance, this research question explored the innovation process in relation to risk management and governance. The following key findings are summarised below:

- Innovation is required to remain relevant, grow and continue to be sustainable in a changing environment. All respondents saw this as pivotal to sustainable growth, irrespective of the perceived level of innovativeness currently experienced within their respective organisations.
- Many organisations still make use of a stage-gate approach to manage innovation. This allows for checkpoints in the innovation process to validate thinking and add value to the organisation.
- During the ideation phase of the innovation process, it encouraged more "blue sky" thinking and brainstorming workshops with little to no governance or risk management. The main ideation sources included market research, frequent assessments of processes and monitoring of profitability, customer feedback and insights, partnerships and brainstorming sessions. Customer focus was an

emerging theme when undergoing an innovation initiative by understanding customer needs and solving for these issues.

- The implementation phase required more governance and risk management from legal, risk and budget points of view. In contrast to the ideation phase, which is more relaxed, the implementation phase required assessments against the business case, with frequent reporting and effective communication. It was important that stakeholders bought into the idea and therefore, better collaboration and accountability was required for a successful implementation.
- In the evaluation phase of the innovation process, rigorous and continuous monitoring is required post-implementation. This iterative feedback loop is a vital component of the risk management and governance in the innovation process. Highly innovative organisations spent more time discussing evaluation and continuous monitoring in comparison to firms with lower levels of perceived innovativeness. This suggests that they are more aware of monitoring against the business case; performance metrics are better aligned to encourage the right behaviours; they are more effective at prioritisation and decision-making; and there is better adherence to limits or controls that have been put in place.
- The associations and interdependencies between risk management and governance in relation to the innovation process are apparent in Figure 11. This starts to highlight the interplay between the different constructs, where governance and risk management were more strongly associated with the later stages of the innovation process (implementation and evaluation).
- Culture was strongly associated with the evaluation phase, where innovation was regarded as a learning process by the organisation through ongoing monitoring. Furthermore, the concept of “failing fast” was evident where innovative firms would make quick decisions to not go ahead with an idea through constant evaluations and ideas that not tracking well would be “killed quickly”.
- In the evaluation phase, the quantitative nature of the evaluation criteria was discussed in terms of return of investment, profitability and sales. However, a more nuanced approach was considered by some respondents by considering both the quantitative and qualitative nature of the evaluation criteria used in decision-making. The qualitative nature considered the social, cultural and environmental implications of an organisation’s innovation efforts. It also considered the impact on certain stakeholders, the learning and perception created by innovation initiatives.

- The major hindrances to innovation were culture, resources (in terms of people, capital, and technology and systems), and a lack of decision-making.

This research question also sought to explore the contextual attributes of structures, culture and resources in relation to the interplay between innovation, risk management and internal governance. The following key findings are summarised below:

- Although the organisational structure varied across the different organisation (where some were hierarchical, flat or matrix), there is minimal evidence due to diverse opinion to suggest that one particular structure facilitates or impedes innovation over another. The enabling process is that there is quick decision-making in the management and organisational structures, which is assisted by clear reporting lines and holding employees accountable.
- While culture was the most frequent impediment or challenge to innovation in section 5.5.3, firms with high levels of perceived innovation spent a lower proportion of time on culture compared to organisations with lower levels of perceived innovation. Most respondents (71%) did not believe that their organisations were bureaucratic, while half of the respondents (50%) believed that their organisations were risk averse.
- In terms of culture, all respondents (100%) viewed innovation as a learning process, where 43% of respondents answered with a strong positive affirmation. In addition, an emerging theme should be focussing on continuous improvements through learning. Associated with the learning process, the way an organisation deals with failure also affects innovation where it should also be regarded as a learning opportunity. People should be allowed to make mistakes within reasonable grounds. However, they should be held accountable, failure should be killed quickly such that the organisation recovers quickly from such an event, and people should be empowered to make decisions and develop through learning from the innovation process.
- Organisations were likened to organisms when dealing with resistance to change in terms of culture. Most respondents (86%) believed that there is resistance to change in their respective organisations. However, the key themes to overcome this were (1) effective leadership and management; (2) involvement of people in the innovation process to ensure that one gets buy-in for a particular idea or initiative; and (3) effective communication to describe the rationale for the change and to take people along the journey.

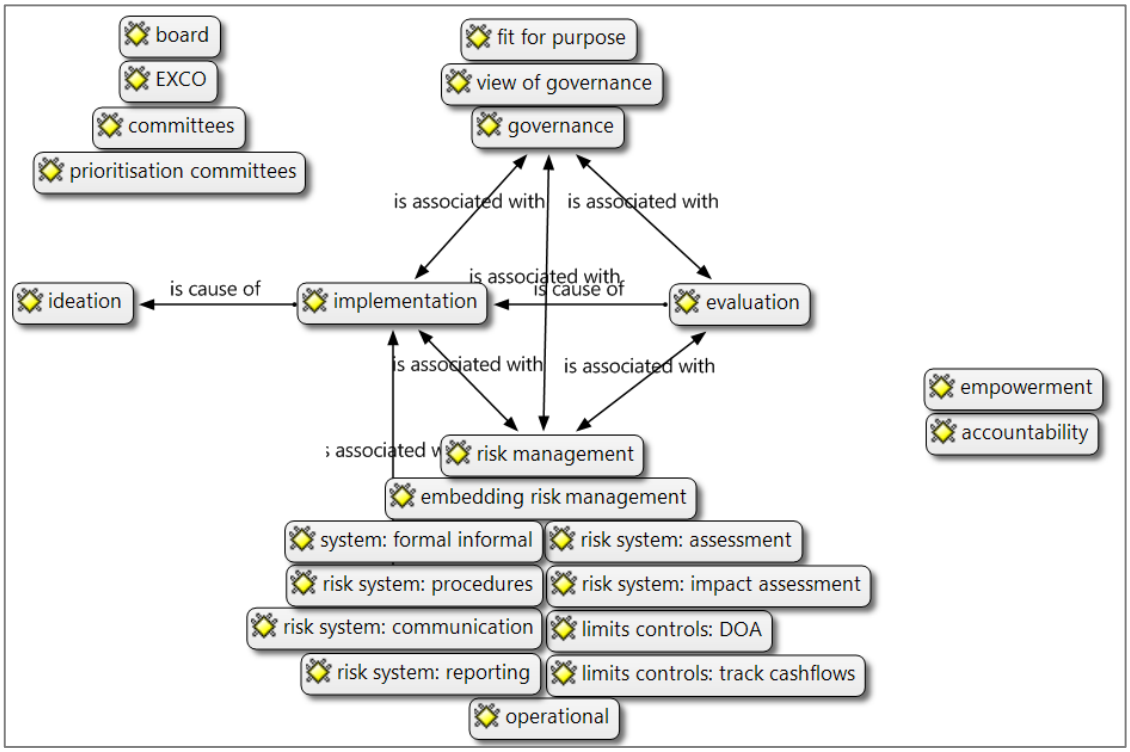
- In terms of resources, half of the respondents (50%) believed their organisations had organisational slack. Most firms (40%) with high levels of innovativeness did not believe they had spare capacity, which could suggest a better prioritisation of spare capacity towards achieving strategic objectives. All respondents (100%) believed that human capital is regarded as an enabling factor for innovation, where a respondent argued that is more important and is an essential factor because the real strength of an organisation lies with its people.

5.6 Research question 2: Managing uncertainty by utilising risk management and control systems

5.6.1 Risk management processes and internal governance

Many respondents discussed their management structures (such as the board, executive committees or other approval forums) in terms of internal governance structures. Furthermore, many respondents also discussed the risk systems that are in place including impact assessments, procedures and policies, frequent reporting, limits and controls through delegation of authority or tracking of financial cash flows. These were largely associated with the evaluation and implementation stages of the innovation process. In addition, a co-occurring code related to these controls included cultural aspects related to empowerment and accountability. This is summarised in a comment made by Respondent 13, who said, “There's a life cycle, there's quality checks, there's risk mitigation, there's committees, there's approvals, architecture boards, etc.… Yeah, our life cycle management is definitely a system that controls that portion of innovation”. Figure 17 shows the co-occurring codes related to management and risk control systems.

Figure 17: Co-occurring words for management and risk control systems



This can be summarised by the key themes for the risk control systems:

Table 19: Key themes for risk control systems

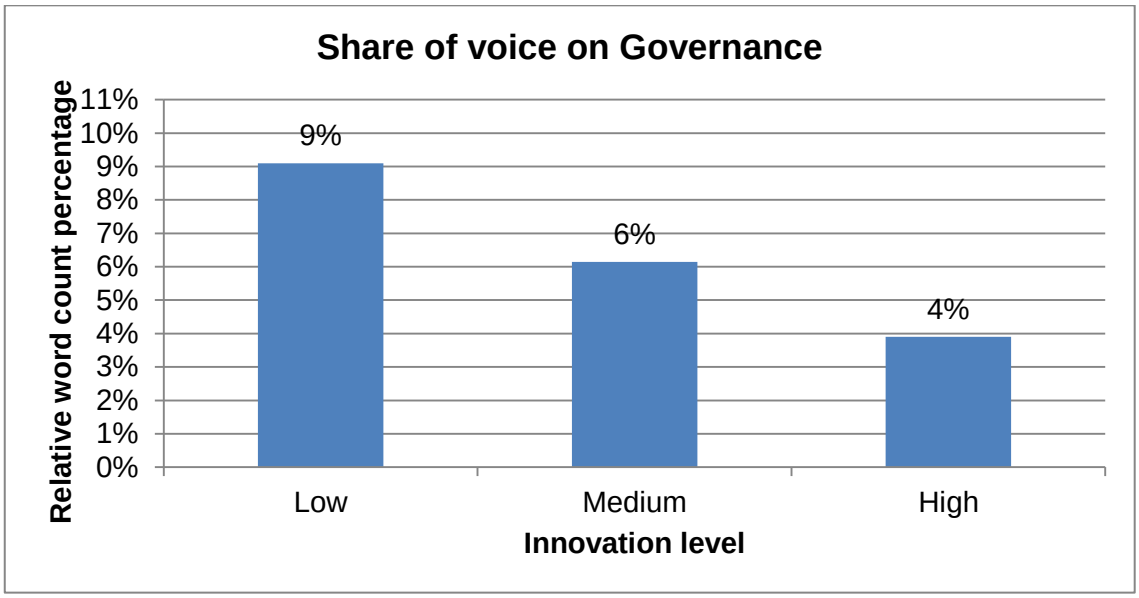
Control systems	Evidence
Procedures and policies	"You have to have **adherence to procedures**. It is almost a 'no brain, no thinking' exercise, apart from managing the risk. So, there are **certain areas where you do not want innovation**. There are **other areas where you are really looking for innovation**." (Respondent 6, ***emphasis added***)
Reporting	"So, we actually **report on launches**, we **report on milestones**, we **report on revenue targets**, we **report on uptake**, we **report on profitability and margin**, and we are basically building an income statement, so there is a lot of reporting…" (Respondent 2, ***emphasis added***) "And that **recording of all those events** allows us to get **reporting of it**. So, that **reporting is shared with the business as appropriate**." (Respondent 7, ***emphasis added***)
Committees	"I mean they are very supportive, we have a **Group Executive Committee**, we have got a **Prioritisation Committee**, we have got **quarterly reviews**, we have got **board meetings**…" (Respondent 2, ***emphasis added***) "… the valuation type review to the multiple iterations that will happen both within a kind of **R&D steercom**, **Executive steercom**, as well as at **EXCO**…" (Respondent 8, ***emphasis added***)

Control systems	Evidence
Delegation of authority	"So, like I have said, **everyone understands their boundary, their delegation of authority**. They know that **once that's exceeded, you are not ready to make the decision**, but you can **recommend decisions into the next** and help people to get the **next delegation of authority**. So, I think that, that that is fair quite well." (Respondent 9, ***emphasis added***) "I think you have the **right line of sights** in terms of so where is the **person who has the authority in terms of financial thresholds** and then signoff the project…" (Respondent 10, ***emphasis added***)
Empowerment	"So we have our two escalations. So, I think first of all, the **empowerment to your teams**, where currently half of that empowerment sits in currently in governance committees and forums, [is in the] wrong place… you **need it at the frontline not at the back, you need it in the frontline that you empower**…" (Respondent 5, ***emphasis added***)

It is important to note that softer aspects, such as culture, empowerment and effective communication through the sharing of reports, were also evident. This eludes to risk management also considering less rigid dimensions through its assessments and analyses.

When splitting the data by the level of the perceived innovation of the organisation, respondents with low perceived levels of innovation spent a disproportionate amount of time (9%) discussing governance compared to those with medium to high levels of perceived innovation (6% and 4% respectively). Overall, respondents spent 5% of the total interview time discussing governance, as shown by Figure 18:

Figure 18: Relative word count analysis of governance by perceived level of innovativeness



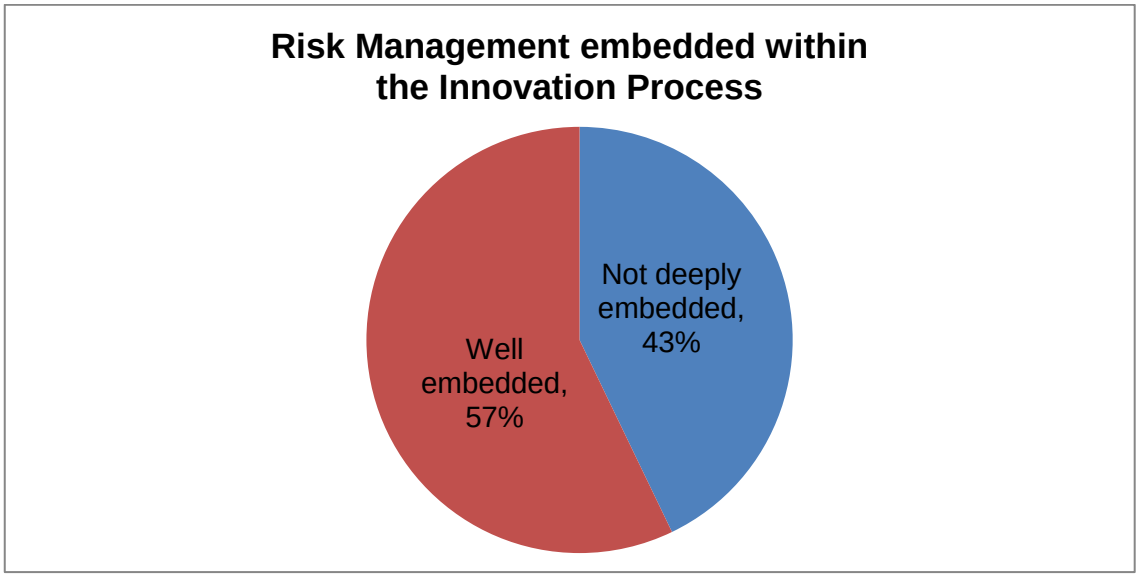
An executive noted that risk management should evolve past probability-based metrics such as risk matrices or risk registers. There should effectively be a partnership where risk management forms part of the business function and becomes strongly embedded within the process:

> "I think where we going to, **risk management actually needs to evolve** and become part of the business, and actually **see past normal risk matrix and risk registers**, and seeing how can we actually **become a business function that gets things right**, **rather than stop the business from getting things wrong**. It is a **very different mind-set**, and I don't think we have made that transition yet." (Respondent 14, ***emphasis added***)

5.6.1.1 Embedding risk management within innovation efforts

More than half of the respondents (57%) said that risk management is well embedded within the innovation process at their respective organisations (refer to Figure 19). Where risk management is well embedded, respondents associated this with the culture of the organisation. For example, "I think it's embedded from start to finish, because of what we encourage culturally and the way people are encouraged to think as entrepreneurs and to run the space as if it's their own business, naturally lends yourself to having that risk consciousness" or "…risk management is one of those things that's embedded in your DNA. It's every person's responsibility to take a level of accountability for the risk that they're actually going to pursue". This was visible through formal processes in terms of governance frameworks and committees to facilitate risk management and governance in a responsible manner.

Figure 19: Risk management embedded within the innovation process



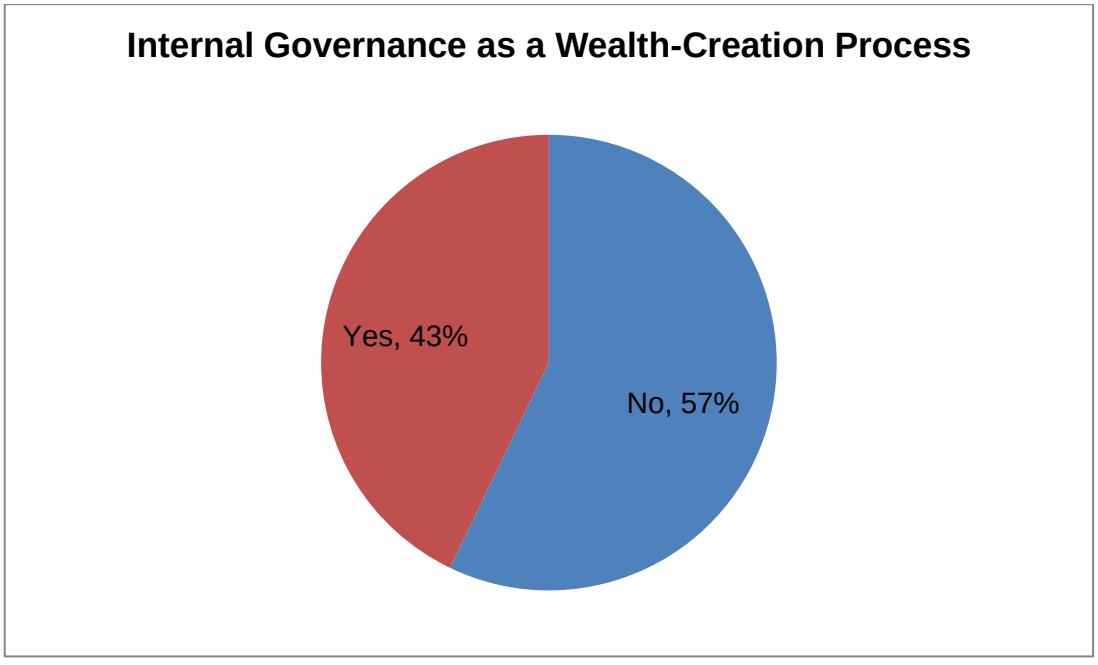
5.6.1.2 View of internal governance as a wealth-creation process

More than half of the respondents (57%) did not view internal governance as a wealth-creation process. This is shown in Figure 20. Where there was a negative view towards internal governance, it could potentially be used as slack to divert blame, as it prevents someone from getting their work done. Where it was not viewed as a wealth-creation process, people would view it as "something they would have to follow rather than to create things" or "to make sure that the CEO or the senior executives don't get locked up".

In contrast, for the remaining respondents that did view internal governance as a wealth-creation process, a longer-term approach to the management of an organisation's innovation efforts was adopted where Respondent 6 said "it is essential for the sustainability and competitiveness of an organisation to always innovate and it is part of managing resistance to change". If it is viewed in positive light, it could also be seen as competitive advantage of that organisation to differentiate themselves from other competitors:

> "Some of those risk processes is also where the **opportunity lies to be innovative** and that doesn't mean to contravene it or to pull the wool over people's eyes… But I think it's an **opportunity to actually be innovative** there, and that could **potentially be your differentiator**." (Respondent 7, ***emphasis added***)

Figure 20: View of internal governance as a wealth-creation process



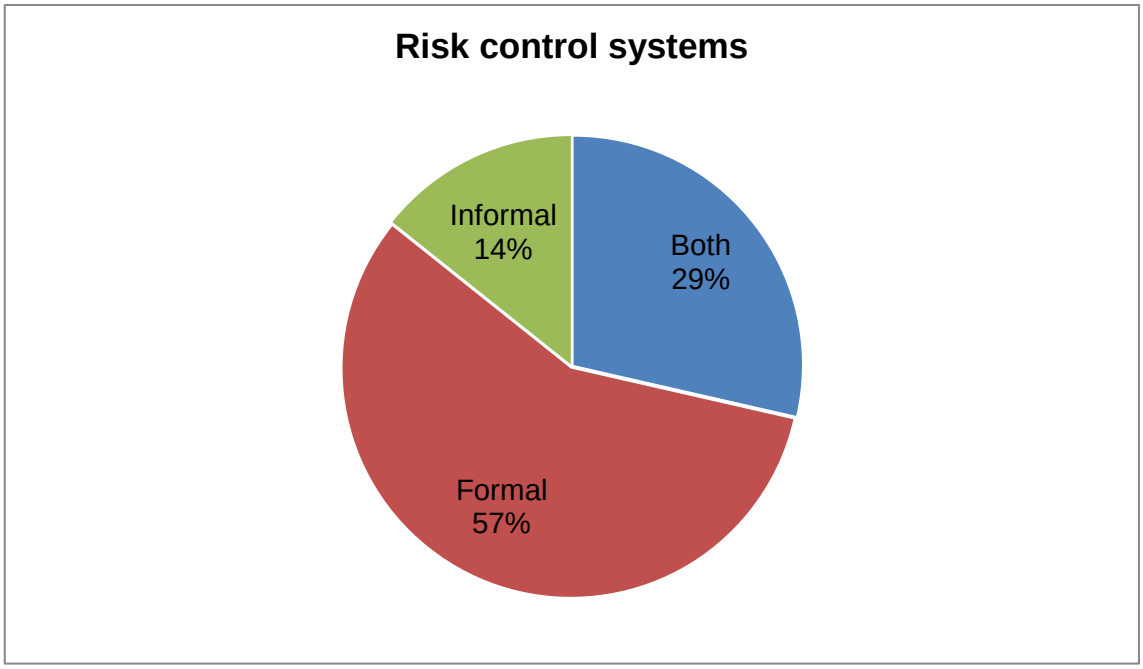
5.6.2 Risk control systems

The key themes for risk control systems were procedures and policies, frequent reporting, committees, delegation of authority and empowerment (see Table 1 in section 5.6.1). This section will look at the formality of the risk control systems and the direct involvement of senior leaders to shape innovation in the organisation.

5.6.2.1 Formality of the risk control systems

Most respondents (57%) indicated that the risk control systems at their organisations are formal, where five of the respondents articulated that these are “very formal”. Some respondents (29%) said that their organisations used both formal and informal risk control systems. The remaining respondents (14%) said that their organisations used informal risk control systems (see Figure 21).

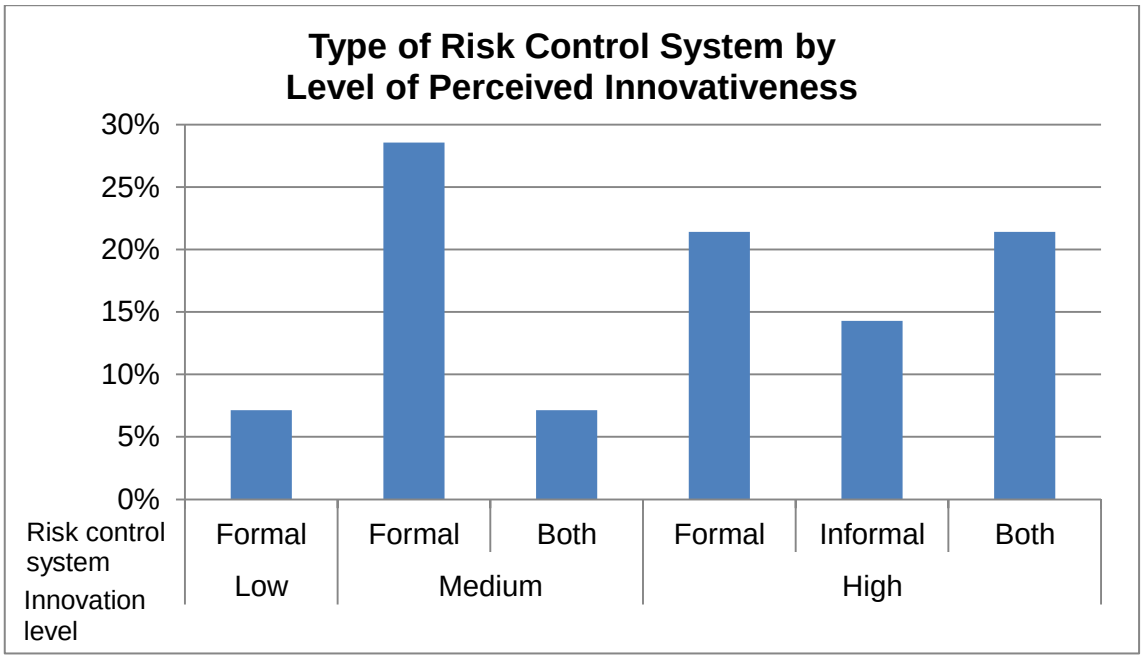
Figure 21: Type of risk control systems in the organisation



When comparing the management and risk control systems to the perceived level of innovativeness, organisations that were believed to be highly innovative utilised the three types of risk control systems. However, these organisations are more inclined to use a control system that includes both formal and informal elements of decision-

making. Organisations with lower levels of innovativeness were far less inclined towards using informal risk control systems. This is shown by the graph below:

Figure 22: Type of risk control systems by perceived level of innovativeness



For the respondents who suggested that their risk control systems are a mixture of formal and informal (29%), the responses were substantiated with positive connotations. This seemed to improve the culture by being more risk-conscientious and encourage empowerment, monitoring and speed of delivery. These are highlighted below:

Table 20: Positive connotations associated with risk control systems

Respondent	Positive connotations of having a risk system that is both formal and informal
Respondent 7	"Both. The informal side of it comes through the **risk consciousness that forms part of the culture** and **how people are expected to operate**…. But then there are also actual formal systems where you log stuff, you report stuff, we verify clients when they call in…" [***emphasis added***]
Respondent 8	"I think the **formal processes are more of a kind of 'tick all the boxes'**, but most of the time the **informal processes have cleaned the product up completely**, so that by the time it gets to go through the formal processes, we have really, you know **crossed our 'Ts' and dotted our 'Is'**." [***emphasis added***]
Respondent 13	"Both. So, and I think it's important because there are certain elements and we mentioned **empowerment**. If you **go too deep and rigid in a formal structure, it tends to become bureaucratic**. If you have to wait

Respondent	Positive connotations of having a risk system that is both formal and informal
	for control board meeting or you have to wait for the next sitting of a committee. That tends to hamper your **speed of delivery of an idea**. So, having an informal process that meets a formal requirement, is definitely what we have." [***emphasis added***]
Respondent 14	"Some parts are formal, some parts are informal – the risk indicator system that I described now is very formal, and the way that we set up that and **we monitor that, and we report on that, and we act on that is very formal**. The **other stuff that we do is very informal**, so a good example is you **could identify risk** that a specific area…" [***emphasis added***]

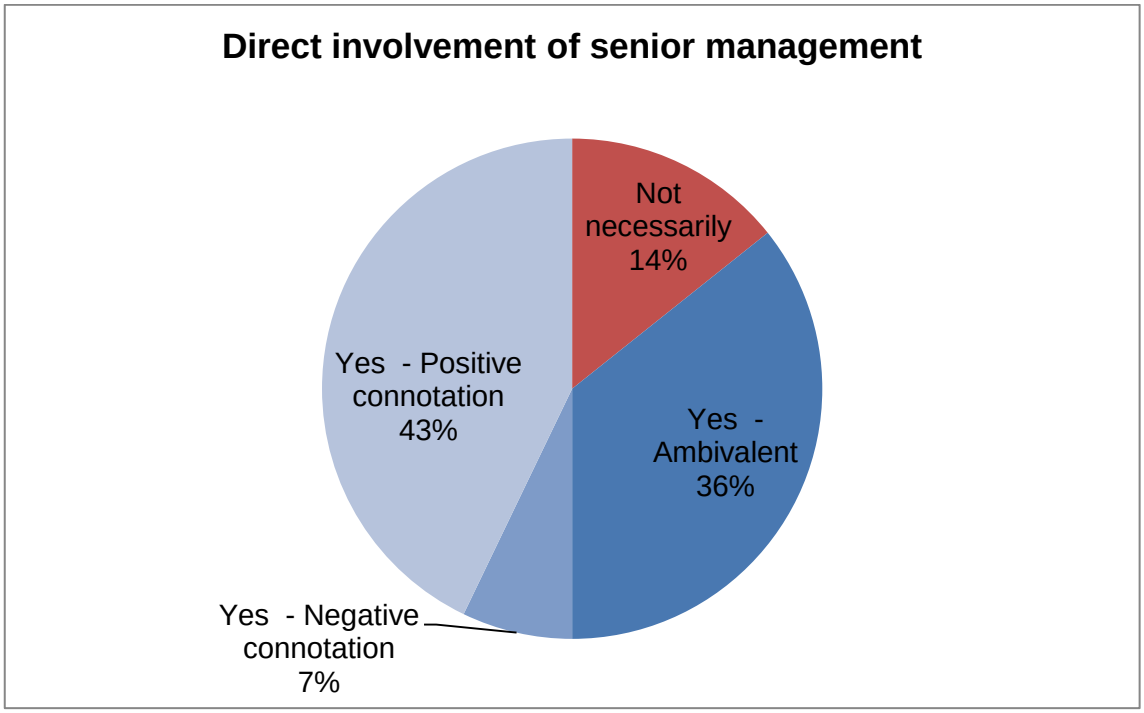
For organisations with very formal control systems, it was observed that although the control systems exist, these may only be perceived barriers rather than actual barriers. This is related to section 5.5.3, where risk management and governance did not come as a one of the main impediments or challenges to innovation. In line with the perception of risk control systems, these exist to protect the organisation. Furthermore, they should not be there to prevent innovation, provided they are deemed to be constructive, succinct and agile, while maintaining good governance structure as well as remaining compliant and adhering to any regulatory or internal policies. This recognition was articulated by Respondent 13, who said "The processes, controls and risk structures we have are there to protect the organisation. And, I think that's true for any organisation."

5.6.2.2 Direct involvement of senior management

Only two respondents (14%) indicated that there does not necessarily have to be involvement form senior management to shape innovation. They alluded to the fact that it is necessary, depending on the type of innovation. For example, if it is very technical in nature, the technical experts should be empowered to run with it as they are best equipped with the technical competencies. The remaining respondents (86%) suggested that their senior managers are directly involved to shape their respective organisation's innovation efforts. Most of these respondents (six respondents) associated a positive connotation to their senior leaders' involvement. One respondent affirmed that a top-down approach is required where senior management has to shape innovation to drive the outcome and ensure that traction is gained through executive sponsorship and buy-in. Only one respondent indicated a negative connotation by stating that there was too much involvement. However, this could be attributable to the fact that this respondent is also the organisation's founder. The remaining five

respondents associated no positive or negative connotations to this, and this was regarded as ambivalent for the purpose of this research. This can be summarised as follows:

Figure 23: Direct involvement of senior management to shape innovation



The differing views towards the direct involvement of senior management to shape innovation are shown in the table below:

Table 21: Views of direct involvement of senior management to shape innovation

Direct involvement of senior management	Evidence
Positive connotation	"Solicit **support**" (Respondent 4, ***emphasis added***) "Yeah, **absolutely**" (Respondent 11, ***emphasis added***) "So, there's **absolutely involvement** with regards to the idea generation process and it's very much **collaborative** and you can see it within the interaction." (Respondent 13, ***emphasis added***)
Negative connotation	"Too much so" (Respondent 3, ***emphasis added***)
Not necessarily	Depends on what it is and **where the technical expertise** of that person lies and what it is that is being innovated..." (Respondent 6, ***emphasis added***) "**Where it needs to be**, sometimes it does not have to be, you know **when things are not getting shaped properly**." (Respondent 9, ***emphasis added***)

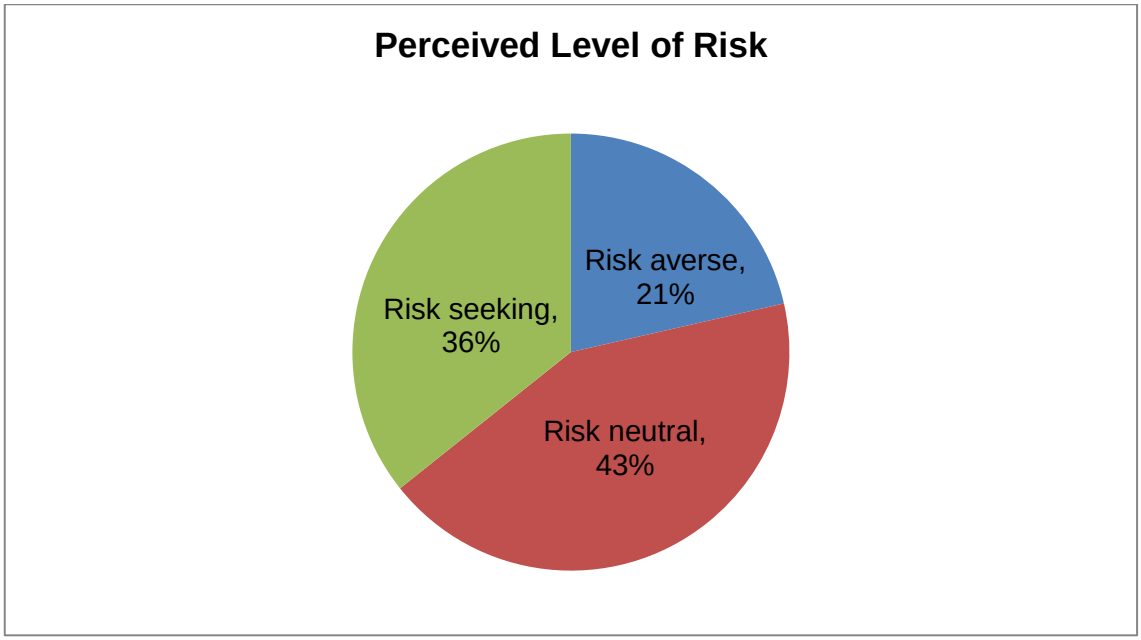
5.6.3 Perceived risk

Excessive perceived risk was listed as a common obstacle in Table 1 in section 2.2.3. This section will look at both the perceived level of risk of the organisations and whether organisations are inclined towards low or high risk innovation initiatives.

5.6.3.1 Perceived level of risk

To ascertain the respondents' perception of their organisation's level of risk, they were asked to rate this on a scale from 1 (very low) to 10 (very high). The risk level was categorised into three groups, namely risk averse (1-3), risk neutral (4-6) and risk seeking (7-10). Figure 24 shows that most of the respondents (43%) believe their organisations are perceived to be risk-neutral by having a balance between low-risk and high-risk initiatives. Several respondents indicated that they perceive their organisations to be risk seeking (36%) or risk averse (21%) respectively.

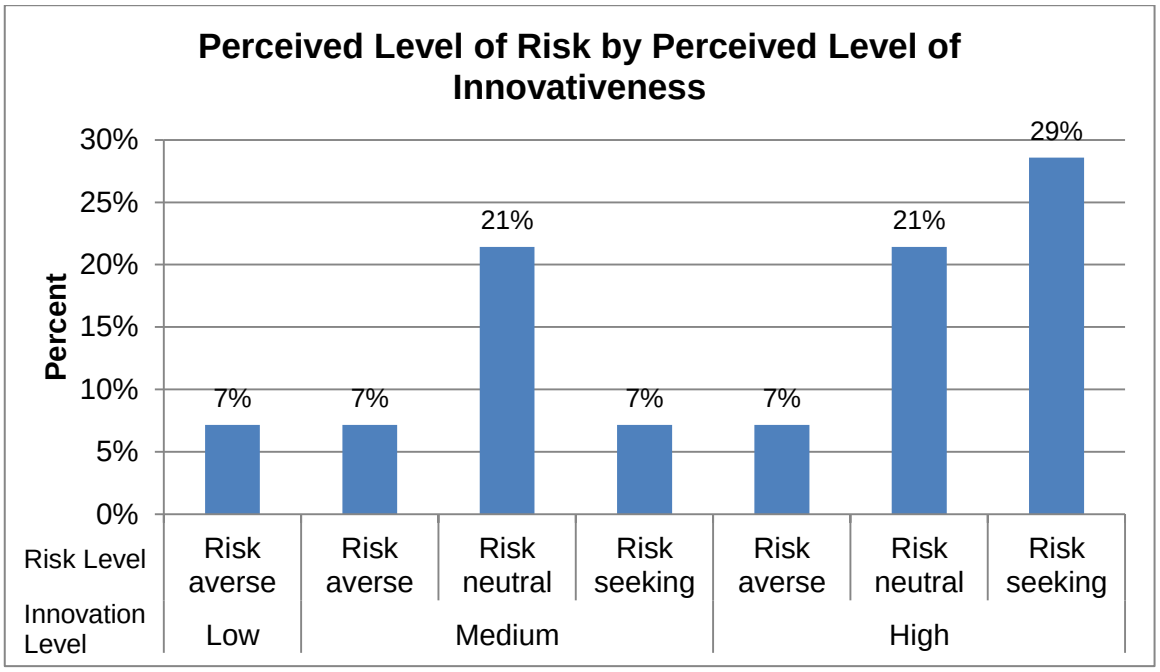
Figure 24: Perceived level of risk in the organisation



Organisations with high levels of perceived innovation tend to be more risk seeking than organisations with low to medium levels of perceived innovation that tend to be more risk neutral or risk averse. However, it was noted by Respondent 8 that there needs to a healthy balance between risk aversion and risk taking because an organisation is "specifically designed to have business units that are there to seek out risk, seek out opportunities, and then have this natural tension in place with your

business units that are there to mitigate and minimise risk". Figure 25 compared the perceived level of risk by the perceived level of innovativeness:

Figure 25: Perceived level of risk by perceived level of innovativeness

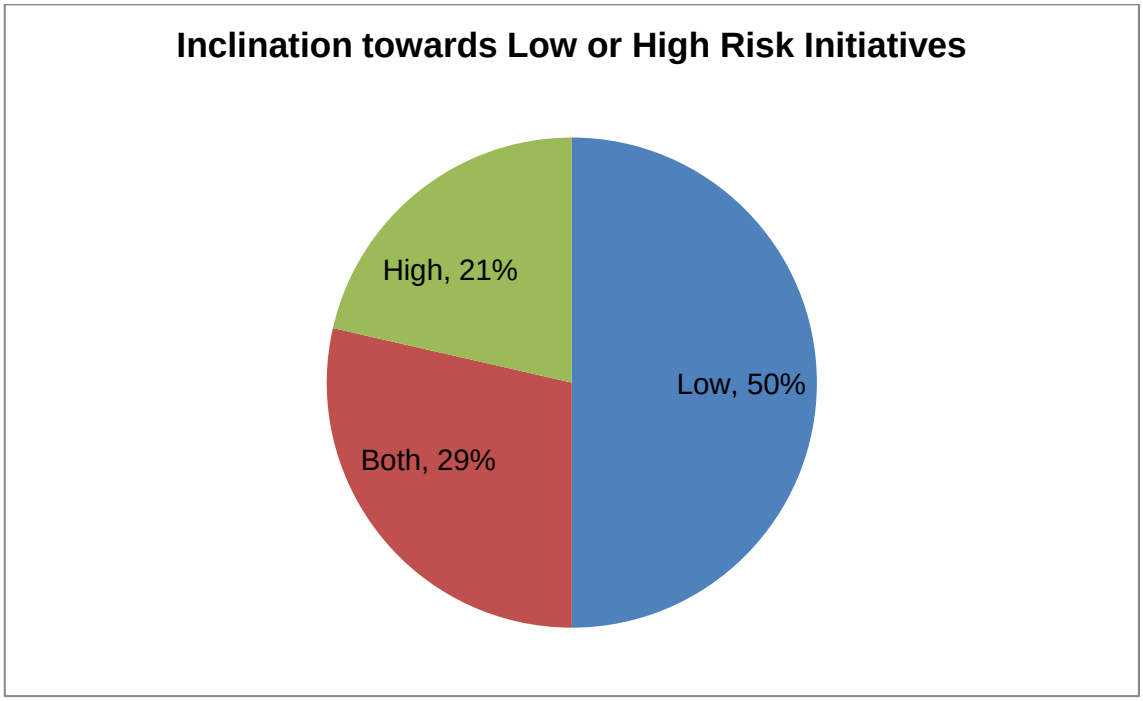


5.6.3.2 Inclination towards high or low risk initiatives

Half of the respondents (50%) erred on the side of caution and tended to be inclined towards low risk initiatives because of the "stakes involved" (see Figure 26). Some respondents (29%) indicated that they try to find a balance between the exposure to high and low risk initiatives, where Respondent 1 said that they "look at low risk initiatives on the higher deals and we are exploring the more high risk initiatives that have a high potential for growth, but have a limited exposure". Fewer respondents (21%) believed that there organisations were inclined to high risk initiatives. This depended on the view and perception of the individual:

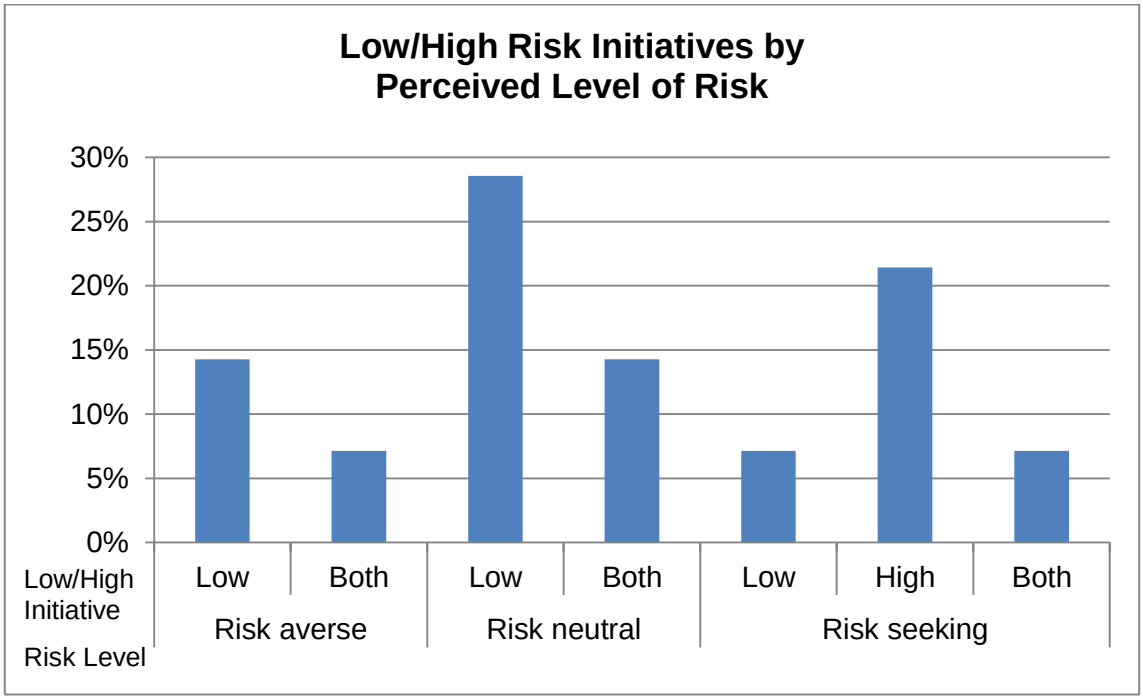
> "It **depends on what your view of risk** is… about people's **perception of risk**. I mean we are not going to take fundamentally high risks, okay. But **my view of high risk, because your view of fundamentally high risk is totally different**…" (Respondent 3, ***emphasis added***)

Figure 26: Inclination towards low or high risk initiatives in the organisation



Organisations that were risk averse or risk neutral tended to lean towards low risk initiatives or a combination between high and low initiatives. Most risk seeking organisations tended to be inclined towards high risk initiatives but a few were inclined towards low risk initiatives or a combination. This is shown by the figure below:

Figure 27: Low or high risk initiatives by the perceived level of risk



5.6.4 Conclusion

This research question sought to understand how the control systems, risk management and governance processes, as well as the perceptions towards risk, aided in managing uncertainty such that these become conducive to innovation efforts. The key findings are summarised below:

- While innovation is important to remain current and relevant, managing risk is equally important for sustainability and as part of the culture of the organisation. Respondents viewed management governance structures (such as the board of directors, executive committees and other approval forums) as decision-making bodies within the organisation. Risk management should evolve such that a partnership is formed within the business function and that it is well embedded within the innovation process.
- Highly innovative firms spent a lower proportion of time discussing governance compared to firms with lower levels of perceived innovativeness. This could suggest that governance was viewed as a perceived barrier to innovation rather than an actual barrier.
- Risks are managed through the risk control systems described in terms of policies and procedures; reporting and reporting on various outcomes and metrics; committees that are supportive and provide oversight; appropriate delegation of authority for effective decision-making such that there are the right lines of sight with proper accountability; and a culture of empowerment.
- In most of the organisations, 57% of respondents described their risk control systems as being formal to manage innovation and that risk management was embedded within their respective organisation's innovation efforts. Highly innovative firms displayed a higher inclination towards utilising informal methods or a combination approach in their risk control systems. Where risk management was well embedded, it was engrained as part of the culture of the organisation, where people took accountability and risk management and governance was facilitated in a responsible manner.
- Most respondents (64%) viewed their organisations as being risk neutral or risk averse, while half of the respondents mentioned that their organisations are inclined towards low-risk initiatives. This suggests that innovation needs to occur mostly within a low-risk environment. However, risk-seeking organisations (which tended to have a high level of perceived innovativeness) displayed an

inclination towards high-risk initiatives, whereas risk-neutral organisations (which tended to display medium to high levels of perceived innovativeness) were inclined towards low-risk initiatives or a combination thereof.

- Innovation generally had direct involvement from senior management, where six respondents associated a positive connotation that was supportive and assisted in shaping innovation. Only two respondents (14%) suggested that innovation does not necessarily require senior managerial involvement depending on the type of innovation and empowerment of technical staff if the innovation is of a technical nature.

5.7 Research question 3: Integration of stakeholder management in innovation process and decision-making

5.7.1 Stakeholder implications

All respondents (100%) indicated that they considered the implications on the different stakeholders in their innovation efforts. A key aspect of role of leaders within an organisation is about stakeholder management where leaders have to talk and listen to different stakeholders. Respondent 2, who is a Group Chief Digital Officer, described his role as being about stakeholder management by stating, “My job is actually about stakeholder management – that is actually what my job actually is”. Respondent 5 indicated that although stakeholders are considered, most are not involved as the team sizes would become too large by stating, “We consider them, but we don’t involve them, whereas your eight-man team would go to about a 28-man team.” This represents a disadvantage of having too many stakeholders to deal with and managing potential tensions that may arise.

Respondent 8 also indicated a systematic manner of involving stakeholders and indicated that some stakeholders are deliberately ignored, especially at the initial stages of innovation during the ideation phase:

> “Ja, I think the answer is categorically yes, so again up front we **kind of deliberately ignore certain stakeholders**… as that **idea kind of moves through the implementation process,** you’ve got to **naturally think through the various stakeholders and you know it is systematic**, you have got the process in place that really **goes through every single stakeholder**. You need to have specked out, f**or you know every single stakeholder that is possibly involved** in every product, so it is **very robust that kind of stakeholder management process**.” [***emphasis added***]

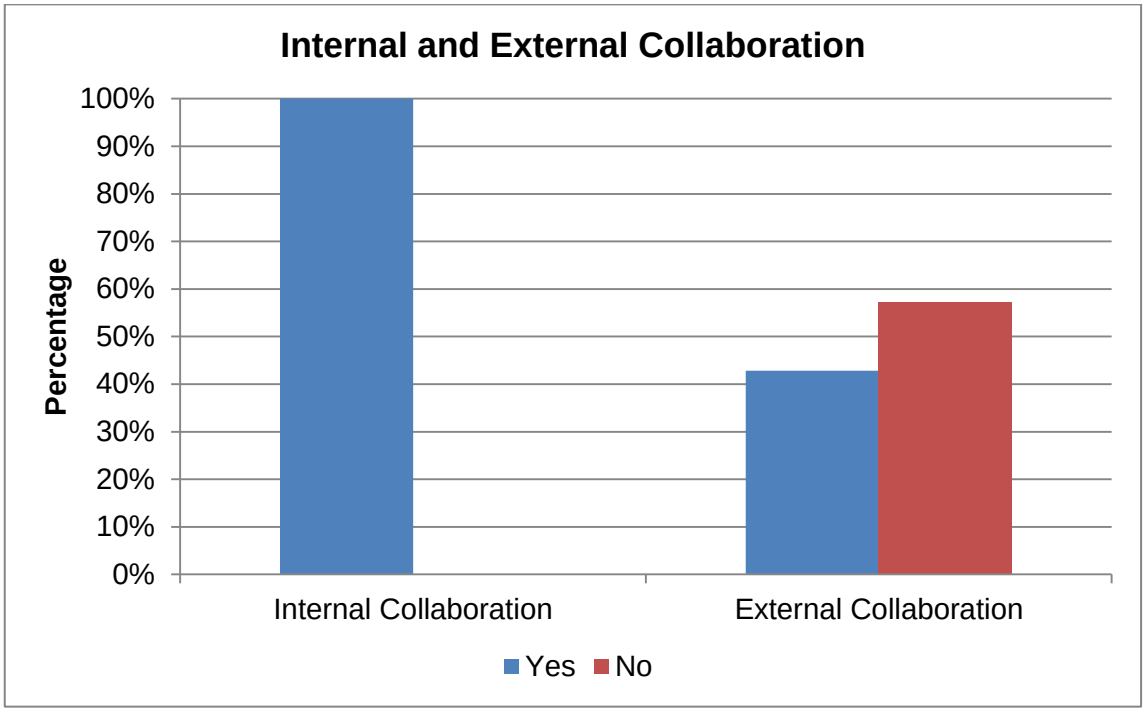
While several respondents discussed the implications on customers, shareholders, suppliers and employees, only three of the respondents (Respondents 8, 9 and 14) discussed the social implications and impact on the community. Respondent 9 discussed the concept of the triple-bottom line and adding value by stating, “It should not extract value from the community, it should always add value.”

It is important to take stakeholders along the journey of any initiative because the organisation is not isolated and its actions may impact various stakeholders. Only two respondents (Respondents 7 and 10) discussed having a formal stakeholder management process in the organisations. This process would allow for continual feedback where all stakeholders are intimately involved throughout all of the processes. Respondent 10 also indicated that their organisation has to present a “stakeholder management plan” through the company’s governance process when undergoing an innovation initiative by stating, “So in that process of taking an opportunity through the governance that I have described, you would normally present a “Stakeholder Management Plan” and that would cover internal and external stakeholders that are linked to the opportunity.”

5.7.1.1 Collaborative relationships

Organisations discussed having both internal and external sources of collaboration. All respondents (100%) mentioned internal sources of collaboration (e.g. cross-functional teams, inter-departmental initiatives, involvement through the various committees, etc.). However, only six respondents (43%) mentioned external sources of collaboration (e.g. getting new technologies, ideas coming from outside, bringing in consultants, use of partnerships, etc.). This may suggest that some respondents would initially think of their internal stakeholders as their primary stakeholders. This is shown by Figure 28:

Figure 28: Internal and external collaboration



The key emerging themes related to collaboration were seating vicinity, socialisation of ideas and concepts with various teams and committees, cross-functional teams, partnerships and co-creation, and avoiding silos by ensuring collaboration across business units within an organisation.

Table 22: Key themes related to collaboration

Collaboration	Evidence
Seating	"They've actually started by **physically seating** the R&D **teams in close proximity so that there's just this natural kind of collaboration** that's created." (Respondent 8, ***emphasis added***)
Socialisation	"And then a **more formal process** where the **idea needs to be socialised** with the rest of the product team, just to make sure they **agree, buy in** and that a**ll boxes have been ticked**." (Respondent 7, ***emphasis added***)
Cross-functional teams	"Well once you get your **cross-function teams going then you get some contribution**…" (Respondent 5, ***emphasis added***)

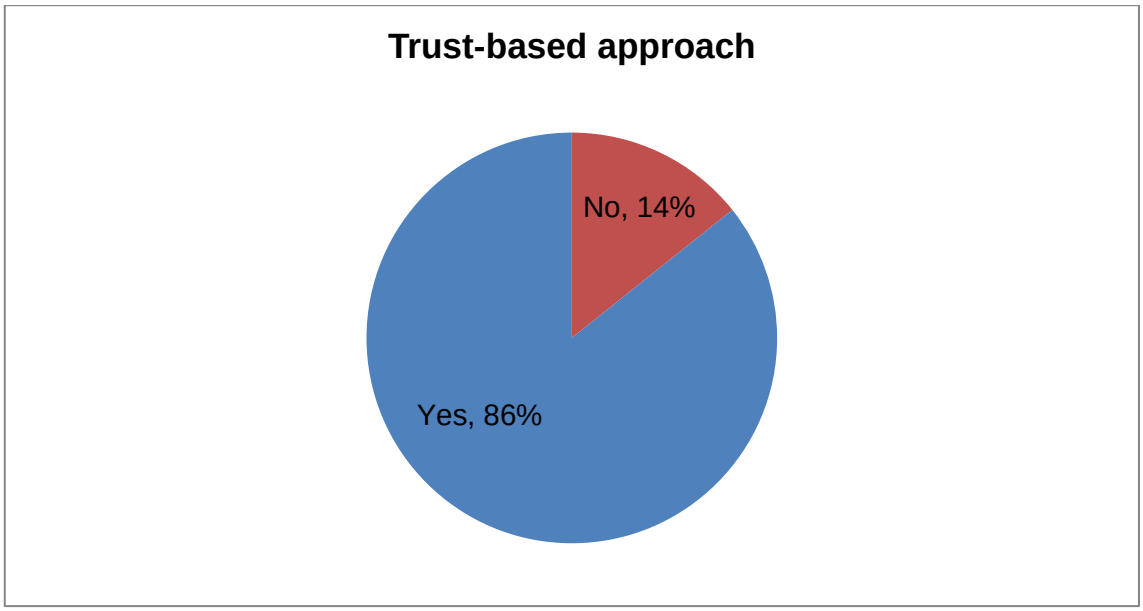
Collaboration	Evidence
Partnerships and co-creation	"So we have I guess the sort of **strategic co-ordinators** to make sure that **these partnerships are in place** also it allows at a higher level to say if a business unit wants to start a **partnership with another company** they can ask if somebody would have something already with them to get a much quicker introduction." (Respondent 1, ***emphasis added***) "Ja, so, **co-creation is big**. To what extent? Sometimes it could be a **partner developing the idea** and bringing it to us, and **we're just helping them implement it**. In some cases, it can be **us developing the total of the whole idea**, running it through our governance board and through theirs, through their structure, internal control, and **they buy it**. Sometimes it's us **sitting around the table**, thinking about how do we solve this problem, and the idea comes up and we go back and talk to our organisations and we come and implement it." (Respondent 9, ***emphasis added***) "Innovation is **not only about what we bring to the market**. It's **about what we bring and what our partners bring to the market** - and that's really important for us." (Respondent 13, ***emphasis added***) "We have **co-creation sessions with clients**, where we get them into a room and we have supper or whatever it may be and we speak about the problems that we're experiencing and how we actually solve that, sometimes our marketing companies get involved. We have a **lot of partners that we use to actually deliver value to clients**… so sometimes we **use our partners as well to help us solve problems** with clients." (Respondent 14, ***emphasis added***)
Business units	"Although the organisation is structured hierarchal, there should also be the **cross-reference availability**, more like a matrix, so that first of all, it also **mitigates against silo forming** and colleague control almost, that **people also look sideways**." (Respondent 6, ***emphasis added***) "The organisation has **quite different business units within it**… And I think to an extent **those businesses work a little bit in silos**. So, I'll **say strong collaboration within the business becomes more challenge**, except if you work within a business unit then it becomes a lot easier." (Respondent 10, ***emphasis added***) "… but we trying to **move away from this end-to-end business unit**, we **want more collaboration**, so that's why we're **not using owner-manager** going forward…" (Respondent 14, ***emphasis added***)

5.7.2 Trust-based approach to management of innovation

In general, there did seem to be a trust-based approach to the management of an organisation's innovation efforts, where 86% of respondents had a positive affirmation (see Figure 29). The more an individual was trusted, the more leeway that person would be given to execute in contrast to the less an individual was trusted, the shorter the leash they would have to operate. Trust is important for innovation where

Respondent 11 said that “trust is a key thing for innovation, without trust you don’t have conversation and collaboration, without collaboration you don’t have innovation”.

Figure 29: Trust-based approach to the management of an organisation's innovation efforts



Trust is also associated with risk management where there needs to be trust to ensure that the relevant work is completed. It was suggested that it is a “self-imposed risk mitigation strategy if there is no trust, where Respondent 14 said:

> “**We want people to trust us but in converse, we trust our people to do what is right**. And I think if you don't have that trust, it’s almost like a **self-imposed risk mitigation strategy**. If you don’t trust the people to do what they are supposed to be doing, they are not going to do it. And it eradicates that fear blocker.” [***emphasis added***]

Only two of the 12 respondents (17%) indicated that there was not a trust-based approach. Respondent 10 highlighted that when there are numerous governance and controls, it is not trusted. This led to the concept of “trust but verify”: “We have got lots of governance and control systems around it, so it is not trusted. It what we used to say in audit, it’s ‘trust but verify’.”

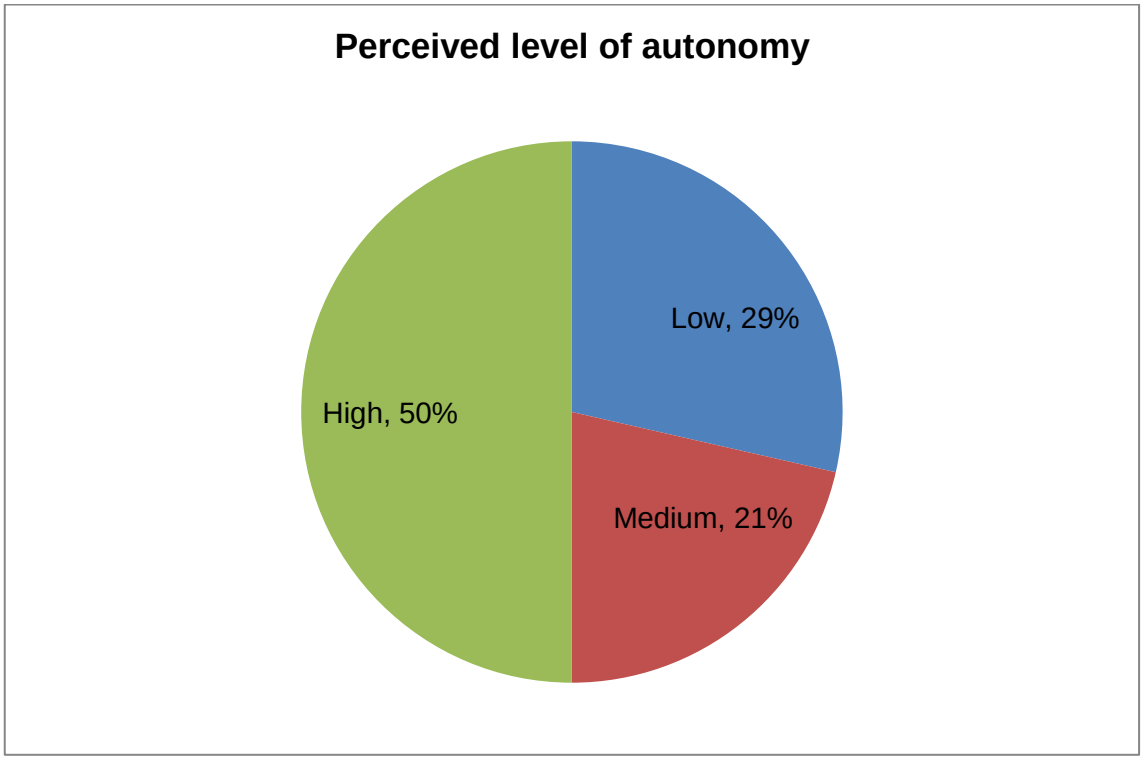
Some respondents also indicated the natural links that a trust-based approach has to open flow of information, culture, collaboration, decision-making and empowerment. Respondent 8 indicated that it is not about “distrust” but rather about finding the optimum or best possible solution.

5.7.2.1 Perceived level of autonomy

To ascertain the respondents' perception to the level of autonomy provided by their respective organisations, they were asked to rate this on a scale from 1 (very low) to 10 (very high). The autonomy level was categorised into three groups: low (1-3), medium (4-6) and high (7-10).

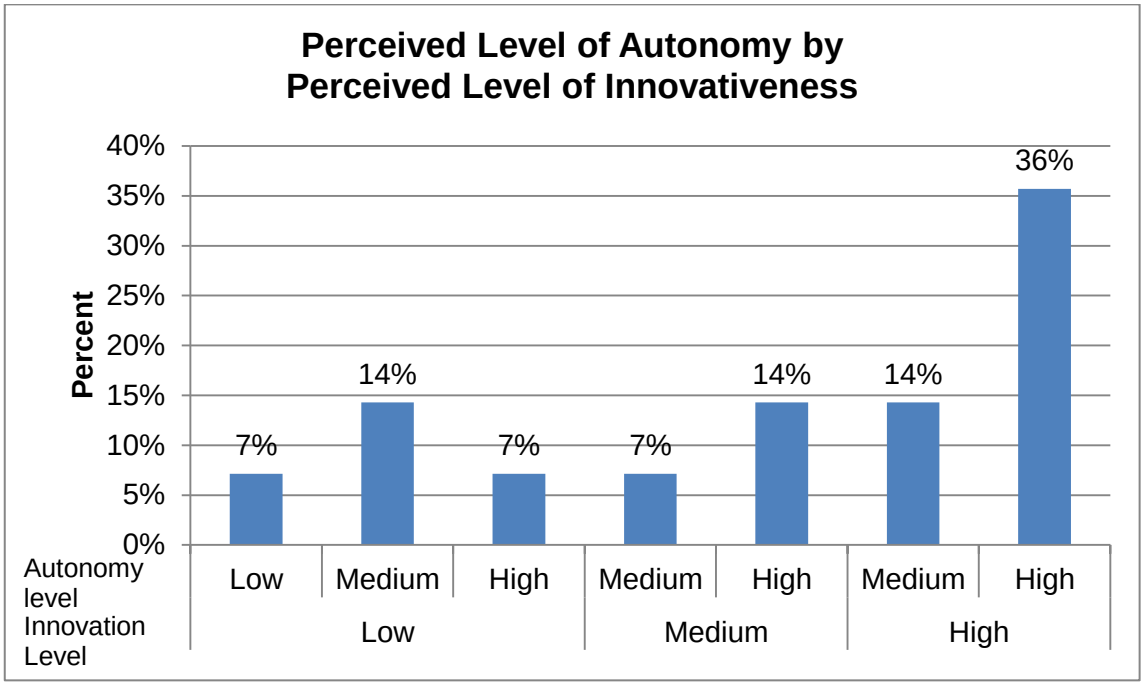
Half of the respondents (50%) indicated that they were granted a high level of autonomy in the organisation, while the remaining respondents were granted low or medium levels of autonomy (at 29% and 21% respectively).

Figure 30: Perceived level of autonomy in the organisation



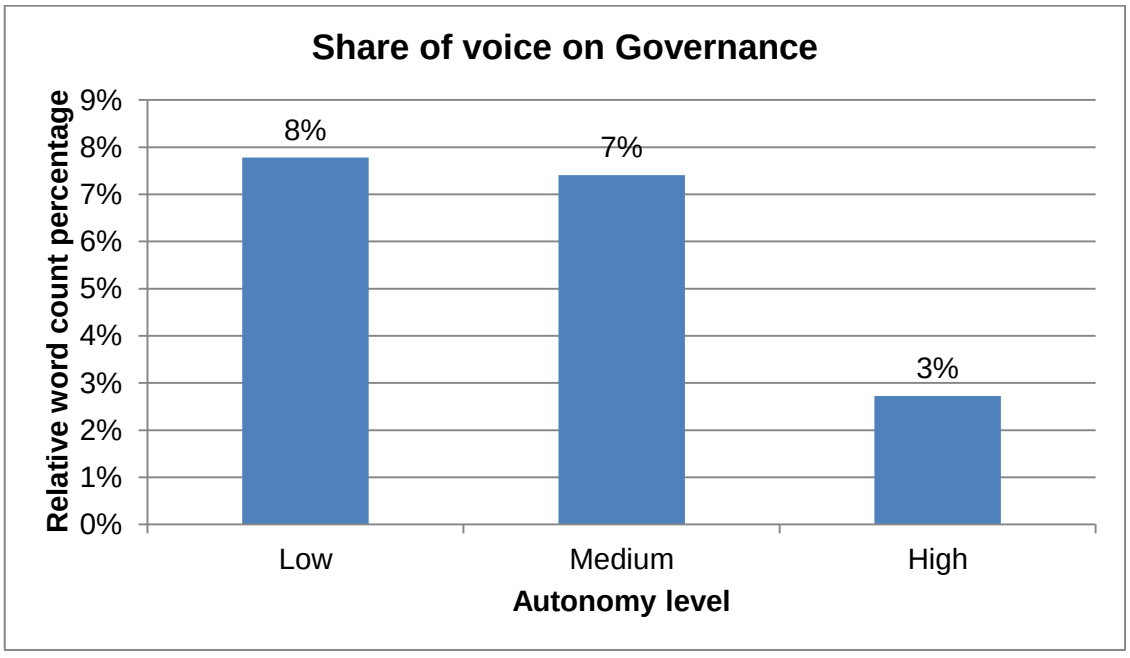
Firms with high levels of perceived innovation were more inclined to grant high levels of perceived autonomy to their staff. Figure 31 compared the perceived level of innovativeness to the perceived level of autonomy:

Figure 31: Perceived level of autonomy by perceived level of innovativeness



In addition, when splitting the data by the perceived level of autonomy provided by the organisation, respondents with low to medium perceived levels of autonomy spent a disproportionate amount of time (at 8% and 7% respectively) discussing governance compared to those with high perceived levels of autonomy (at 3%). Overall, respondents spent 5% of the total interview time as their discussing governance. This is shown by Figure 32:

Figure 32: Relative word count analysis of governance by perceived level of autonomy



5.7.3 Decision-making

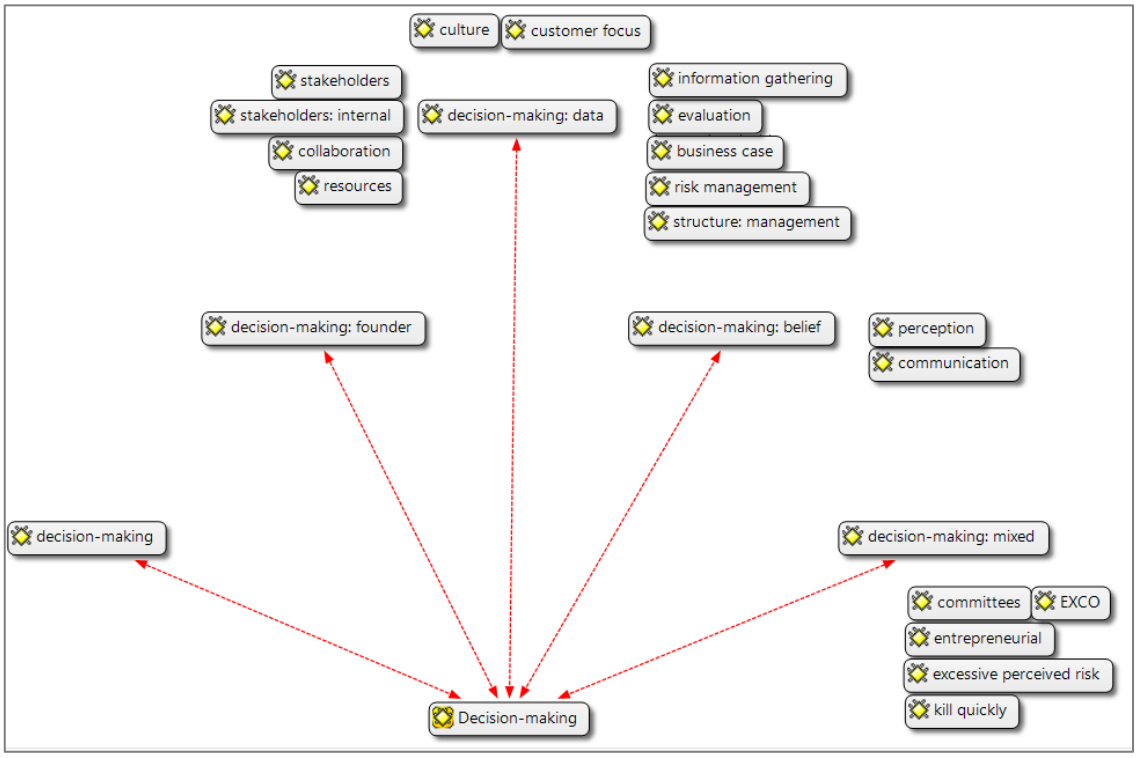
When looking at decision-making in the respective organisations, few organisations made decisions based on perceptions, intuition or beliefs. Similarly, few organisations made decisions solely based on data. Many organisations made decisions on both quantitative and qualitative means (referred to as mixed decision-making). Of these organisations, many respondents referred to being largely data-driven, though a decision would still be made despite the data not being available in certain circumstances. In addition, two of the organisations were founder-led, where the decision-making process was largely influenced by the views of the founders of the organisation.

Figure 33 shows the co-occurring codes for decision-making. As expected, data-driven decision-making is largely influenced by an information-gathering approach thorough evaluation and monitoring, and supported by a business case. These represent risk management and decisions are often made through the relevant management structures and committees. Thus, it involved collaboration across multiple internal stakeholders. Culture and customer focus were co-occurring themes for decision-making, where some respondents discussed that data is gathered from customers in order make relevant decisions.

For belief-driven organisations, decisions were largely made based on perceptions. However, the other co-occurring code related to this was communication. This could suggest the importance of effective communication when making a decision based on an intuition.

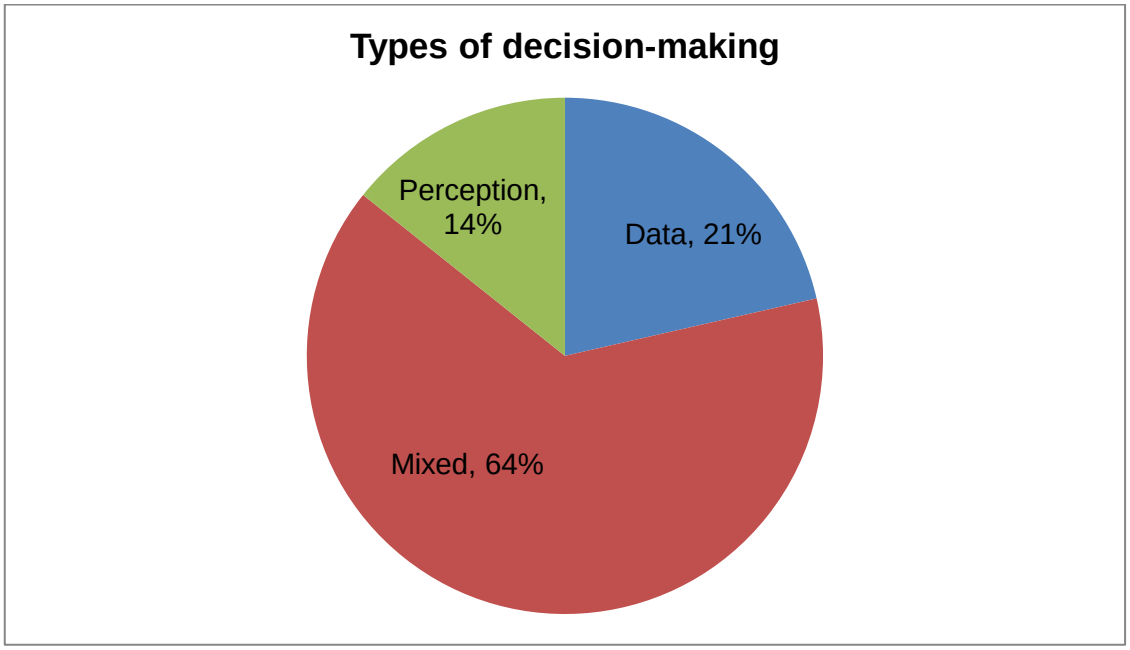
Finally, for organisations that make decisions on both quantitative and qualitative aspects, the decision-making bodies would usually be in committee structures or at a relevant executive committee. However, it was noted by Respondent 6 that if one had “to escalate all decisions up can be very stifling. There should be room for decision-making at the levels where the decisions can be made. The lower down the hierarchy decisions are made, the better normally”. In addition, these organisations would be aware of the excessive perceived risks they face and would also “kill quickly” any negative perceived risks through quick decision-making.

Figure 33: Co-occurring words of decision-making



Most respondents (64%) indicated that their organisations used mixed decision-making. Few respondents (at 14% and 21%) indicated that their organisations used data-driven or perception-driven decision-making. This is visually represented by Figure 34 below:

Figure 34: Types of decision-making in the organisation



There may also be some very simple frameworks for decision-making. The decision-making process must be aligned to the strategic objectives of the organisation. For example, Respondent 2 indicated that their organisation uses the following approach:

> "Our decision-making process is quite simple. We have got a very **simple set of frameworks**… **'Is it feasible, is it viable, is it scalable'**, you know, and if the answer to all these things is yes, you know, and it **aligns to our strategy**, normally you take it to EXCO and you sign it off." [***emphasis added***]

In contrast, other respondents would have more complicated and specialised decision-making processes through the establishment of multiple forums. For example, Respondent 14 indicated multiple decision-making bodies, "…we have forums, we have EXCOs that take place, we have Operational Committees, we have Financial Committees, we have a Strategic Committee which is our EXCO, set up to make specific decisions around the business."

Decision-making may also shift from being largely data-driven to belief-driven, depending on the level of seniority in the organisation. People in more senior positions are more likely to make decisions with not enough data available, compared to those at lower levels of seniority. Respondent 14 said, "We try to make it as data driven as possible, but at the same time not all data is available, so it is only natural the higher you go up in an organisation…. As you go lower you need to make decisions based on concrete data."

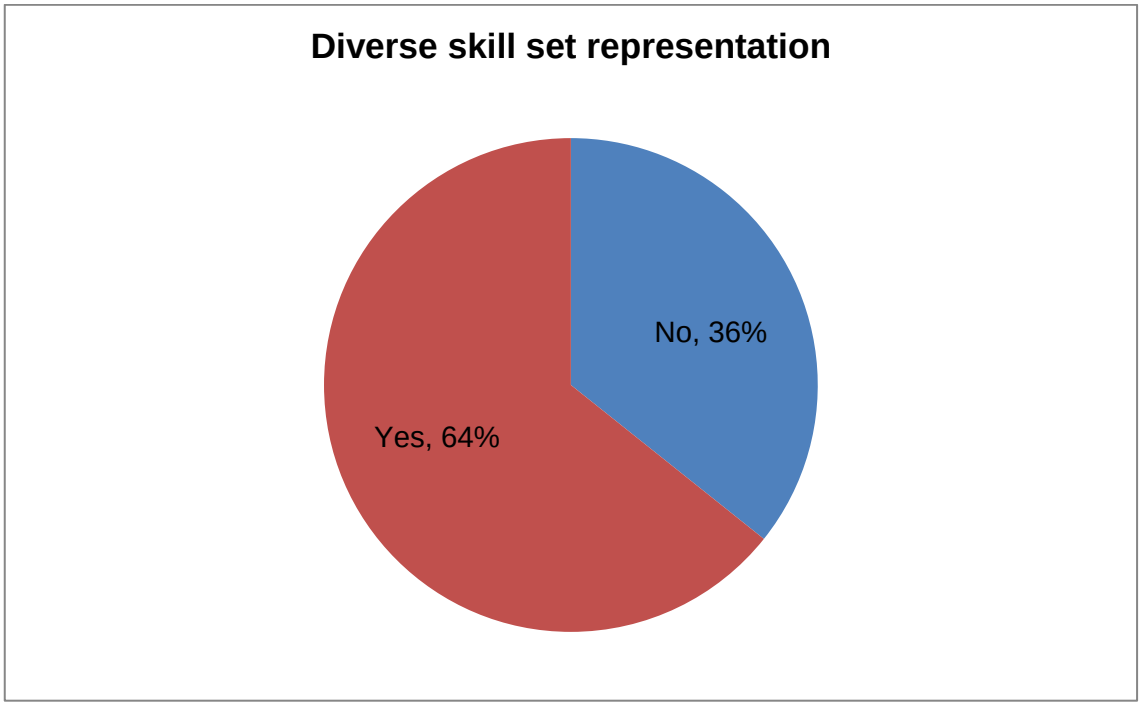
5.7.3.1 Diverse skill set representation for decision-making

Most respondents (64%) gave strong confidence that their organisations had diverse representation in terms of skill set in their decision-making bodies. This allowed for certain key stakeholder groups to be represented. Some respondents also mentioned that many of their projects are run using cross-functional teams. Respondent 13 said,

> "Yeah absolutely. I mean…**not only different skill sets but also different cultures**. And I think that's also important. **To be innovative, you need to be innovative to a wide diverse economy and most certainly diverse people**…. And **diversity is**… something that **we cherish a lot**. We **believe that it actually aids innovation process, we believe that it aids how we address the market in the best possible way**". [***emphasis added***]

The remaining respondents (36%) indicated that their decision-making body is either dominated by the founders of the organisation or strongly represented by a certain profession. This can be visually summarised by the Figure 35:

Figure 35: Diverse skill set representation in decision-making bodies



5.7.4 Conclusion

This research question sought to identify how stakeholder management integrated with management of innovation. It also looked at decision-making and diverse representation that could assist in managing conflicting tensions through better coordination and prioritisation of an organisation's innovation efforts. The key findings are summarised below:

- Many organisations recognise the importance that stakeholders (from both an internal and external perspective) play – that they are a key aspect of innovation. All respondents (100%) consider the implication of stakeholders in their innovation efforts, while some organisations would systemically and increasingly include certain stakeholders at the organisation progresses through the different stages of the innovation process, especially during the initial ideation phase. Only two respondents (14%) said there was a formalised process to stakeholder management within their organisations.

- While many respondents discussed the considerations on direct stakeholders, only three respondents (21%) looked beyond their business returns and discussed the broader impact on the community, or social implications that may benefit society through their actions. This suggested that some organisations are adapting to have long-term sustainability in mind.
- All respondents (100%) utilised internal sources of knowledge and collaboration. However, only 50% of respondents utilised external sources of collaboration in their innovation efforts through partnerships, co-creation, hiring external consultants, and utilising new technologies. This suggests that organisations tend to view their primary stakeholders as internal stakeholders to gain sources of knowledge and information.
- Collaboration could be enhanced through closer vicinity of seating arrangements; socialisation of ideas; setting up cross-functional teams to encourage broader thinking; utilising partnership and co-creation at different or all stages of the innovation process; and strong collaboration between business units to prevent silos from forming.
- Most respondents (83%) said there was a trust-based approach to the management of an organisation's innovation efforts. The concept of "trust-but-verify" was raised by respondents who felt that because of the numerous governance and controls, it is not necessarily trusted as there should be sufficient oversight. Trust is also associated with culture; collaboration; open flow of information; decision-making; and empowerment.
- Firms with high levels of perceived innovativeness believed that they were given more autonomy compared to firms with lower levels of autonomy. Half of the respondents (50%) indicated that their organisation provided a high level of autonomy. This could be related to the trust given by the organisation to that particular individual rather than the organisation in general.
- Trust in idea generation and the implementation phase, as well as in stakeholder management, was a key component within the organisation as a culture for innovation. However, risk management and governance processes could be seen to hinder innovation if there is a lack trust, empowerment and collaboration within the organisation and could. Trust could be viewed as a self-imposed risk mitigation strategy about finding the best or most optimal solution.
- Decision-making for innovation was driven by quantitative and qualitative data. Most organisations (64%) used a mixed approach that was both data-driven and perception-driven in its decision-making ability. Organisations would tend to

make decisions that were data-driven, supported by information and assessed through constant monitoring and evaluations. However, where information was not easily available and time was an essential factor, an organisation would make decisions based on perception, intuition or belief.

- Decision-making had various channels ranging from senior management, diverse skill set and thinking processes, perceptions and belief, and data (customer trends, risk management and returns). It was important for quick decision-making to quickly kill excessive perceived risks.
- There was diverse representation of skill set for most organisations (64%), where diversity was believed to aid the innovation process, especially in a wide economy with diverse representation. Where there was not diverse representation, this tended to be founder-led or dominated by a certain profession.

Chapter 6: Discussion of Results

6.1 Introduction

This chapter will discuss the results presented in Chapter 5 for each research question in relation to literature reviewed in Chapter 2. Through the analysis of the results from the in-depth interviews, this will be corroborated, refuted or expanded against the literature review to answer the research questions that were identified in Chapter 3. Finally, an *ex post facto* model is presented based on the key findings. This simplified innovation management model integrates risk management and governance within the innovation process and includes the contextual attributes.

6.2 Research question 1: Innovation process in relation to governance and risk processes and contextual attributes

The first research question sought to ascertain how governance and risk management integrate with the innovation process, as well as to understand how this is influenced by the contextual attributes.

6.2.1 Innovation process

Innovation is regarded as an imperative to pursue by all organisations in order to remain competitive (Merriman & Nam, 2015), as evidenced by the word cloud analysis in Table 7 which showed all organisations having innovation at top of mind irrespective of their current level of innovativeness. Half of the respondents (50%) indicated that they use a stage-gate approach to the management of the innovation process in section 5.5.1. Respondents believe that the stage-gate process has checkpoints that provide them with the opportunity to add value and adjust their thinking, where appropriate. The literature argued that the stage-gate approach to innovation has become obsolete and largely redundant because the process is generally neither linear nor sequential (Poutanen et al., 2016; Takeuchi & Nonaka, 1986). Furthermore, it is a complicated and iterative process that involves multiple stakeholders (Berglund, 2007; Poutanen et al., 2016; Salerno et al., 2015).

Mohnen and Roller (2005) agreed that innovation is a complex process that is influenced by often interrelated factors. Leiponen (2005) suggested that there should

be interaction and iterative feedback processes between complementarities of innovation activities and external and internal knowledge sources for innovation to be successful. While it is agreed that the innovation process is complex, it is evident that the stage-gate approach is still utilised by several respondents across different organisations and therefore contradicts the statement that is largely redundant and obsolete. This may be because it is easier to conceptualise and components of it largely remain relevant and practical to apply in the business environment. The stage-gate approach does provide an opportunity as an iterative feedback process to test decision-making and adjust thinking.

6.2.1.1 Ideation

In this “thinking” or conceptual phase, several respondents (57%) described this process as devising the innovative idea in 5.5.1.1. The key ideation sources were market research, processes, customers, partnerships, and brainstorming workshops. Given that 50% of respondents discussed having customer focus in the ideation phase, this emerged as an important theme. In literature, this view is supported where it is believed that customer participation leads to innovation success (Chang & Taylor, 2016). This suggests that organisations should partner with customers to validate with them.

An emerging theme was that there should not be any restrictions at this stage of the process. This view is confirmed in section 5.5.1.1and is supported by literature where an innovative idea could potentially be killed an intensive screening process takes place too early in the ideation phase (Florén & Frishammar, 2012). This suggests that there should be limited risk management and governance controls in the ideation phase of the innovation process.

6.2.1.2 Implementation

The idea has been refined in the implementation phase compared to the initial conceptualisation in the ideation phase. Many respondents said that once they have taken an idea, it starts going through the normal risk management and governance structures. This was discussed in section 5.5.1.2, where respondents indicated in Table 10 that “they have their normal corporate risk management framework that this needs to go through”, or that they go through “a very vigorous process of legal governance”. Furthermore, the process becomes more stringent with greater level of oversight,

monitoring and governance. The literature contends that innovation is much more that simply coming up with the idea (Tidd & Bessant, 2009). This is supported by the views of several respondents, who suggested the importance of ensuring you involve more people and that every stakeholder “buys into the model”.

Respondents furthermore highlighted in Table 10 that they may be required to have “developed a business case that they got approved by the business and business unit”. This ensures that a strong business case includes the various considerations and impacts that the innovation would have on the organisation. Most notably, it would assess the financial commitments required to be made by the organisation. The literature confirms this view, where the implementation phase is also a much more expensive exercise which usually requires greater investment compared to the creative ideation stage of innovation (Bowers & Khorakian, 2014).

6.2.1.3 Evaluation

In the evaluation phase of the innovation process, it was evident that risk management and governance was increasingly important where 71% of respondents utilised this. This is evidenced by Figure 9 of co-occurring codes linked to the innovation process in section 5.5.1.3, where there are strong associations between the primary constructs of this research, and the interplay between corporate innovation, risk management and internal governance is visible. In the reviewed literature it was argued that greater value would be derived if risk management is made more explicit in the integration of the innovation process, as evaluation is an aspect that runs across the entire innovation process with multiple decision-making points (Bowers & Khorakian, 2014). This is confirmed by the views of the respondents, where those respondents who believe their organisations are highly innovative spent more time talking about evaluation and constant monitoring as shown in Figure 10 in section 5.5.1.3. However, in section 6.2.1.1, it was suggested that there should be little governance and risk management at the ideation phase of the innovation process. This contends with the literature that evaluation runs across the entire innovation process, because the views from respondents are that there should not be any barriers to restrict ideas in the early stages of the innovation process.

It also became clear that constant monitoring is an important aspect of the innovation process. This insight was raised by Respondent 7 as an example, “So the continuous monitoring of the products’ performance relative to the market, relative to its original

business case and intention". In the literature, evaluation is considered to be an essential component to monitor and manage the innovative performance effectively, as there is a constant need to adapt the tension between discipline and creativity in the innovation process (Nagano et al., 2014). This view therefore corroborates to that of the literature. The constant monitoring would certainly be considered a form of risk management, and provide an opportunity to gather information, analyse the situation and take management action where necessary by determining the prospects for innovation and by making choices about the course of action (Bowers & Khorakian, 2014).

During the analysis of the results, a nuanced approach was observed in the evaluation criteria. Most respondents referred to evaluation metrics according to quantitative metrics as shown by Table 11 in section 5.5.1.3, while only half of the respondents considered both the quantitative and qualitative aspects in their evaluation criteria and decision-making approach. This nuanced approach is highlighted by the following comment made by Respondent 9 in Table 12, "And that tells you, over the life of this product, what do we expect the financial benefits to be, the customer impact, the safety impact to be. Whether they're quantitative or qualitative indicators…" This does extend the literature to be cognisant of both qualitative and quantitative indicators in the evaluation criteria, although the literature (Perez-Freije & Enkel, 2007) did infer that there should be some level of flexibility and controls in place to prevent diverting away from the strategy, extending resources beyond the capacity of the organisation, having unproductive arguments, or having poor execution that may result in missed deadlines and budgets.

6.2.2 Governance and risk management processes

It is important to ensure that there is a balance in risk management and governance when undergoing any innovation activities. This was mentioned by Respondent 13, who said, "You've got to take risk to be innovative. So, striking a balance is important". According to the literature review in section 2.3, a new innovation may change the trade-off between risk and return, and while the consequences of this are perfectly clear in hindsight, it is difficult to possibly predict these. Therefore, it is necessary to accept and manage these risks (Merton, 2013). Furthermore, often conflicting tensions and disparate agendas need to be prioritised and managed, as innovation encourages risk-taking and results in greater uncertainty but internal governance seeks to reduce uncertainty through control mechanisms (Wu, 2008). Figure 11 of the co-occurring

codes for risk management and governance confirms the associations and interrelated of risk management and governance to the innovation process, especially for the implementation and evaluation phases.

6.2.3 Impediments and challenges to innovation

Culture, resources and capital were the top three impediments or challenges to innovation from the research, as can be seen in Figure 12 in section 5.5.3. This corroborates to the literature review, where Nagano et al. (2014) described an innovation culture affecting the positive outlook towards risk-taking and representing a basis for successful innovations. Culture also ties into resistance to change in the enterprise as one of the common obstacles to innovation in the Table 1 in section 2.2.3. The potential obstacles to innovation were categorised into four categories: risk and finance, competencies within the organisation, external competencies outside of the organisation, and regulation (Mohnen & Roller, 2005). Resources and capital as the other main impediments also tie into risk and finance, and knowledge-skill categories in the common obstacles to innovation table. However, decision-making and prioritisation were also listed as common impediments or challenges to innovation by respondents, and this was not listed explicitly as one of the key factors in the common obstacles table in the literature. Therefore, this research extends the literature by adding these two factors (decision-making and prioritisation) as common impediments or challenges to innovation. Managers have to balance competing priorities rather than compromise on them, as it requires a complex system with greater diversity in terms of measures and controls (Bedford, 2015). This is because innovation initiatives run more smoothly when these uncertainties are better managed (Salerno et al., 2015).

The results also highlighted that risk management and governance were not explicitly cited as key impediments or challenges to innovation. Despite innovation remaining difficult to manage (Holmstrom, 1989) where there is a lot of uncertainty based on complex systems with constant change (Poutanen et al., 2016), risk management and governance (as key tools to manage innovation) were not viewed as key obstacles. Therefore, this could suggest that governance continues to play an important role in innovation (Shapiro et al., 2015). Furthermore, the internal governance processes are adapted and improved in line with an evolving business model and changing competitive environment, contrary to the views of Prahalad and Oosterveld (1999). This is because it could be seen as being essential to the sustainability and competitiveness of the organisation (see section 5.6.1.2).

6.2.4 Contextual attributes

6.2.4.1 Structures

In section 5.5.4.1, management and organisational structures were discussed. Through the synthesis of results, structures played an important role in effective decision-making. Furthermore, the results showed both formal and informal means of socialisation of innovative practices to ensure effective decision-making. While some organisations assigned ownership or responsibility to certain innovation teams or key champions, others encouraged innovative thinking across the organisation by democratising innovation. However, the structures should be conducive to the empowerment of effective decision-making. The literature supports this view that organisational structures influence the flexibility and agility where information may not readily flow to the top (Teece et al., 2016). This also suggests the positive view expressed by Respondent 10 who said that structures provided “governance around the organisation taking the right opportunities” and “definitely helps finesse an opportunity”.

In terms of organisational structures (see section 5.5.4.1.2), the results indicated differing structures among organisations, where some were quite flat and others were hierarchical. The view by one of the respondents was that the organisational structure was deemed to be put in place to run and operate existing business where it was said that the structure “is designed for us to run and operate the legacy business”. Therefore, three of the organisations that were interviewed had set up separate innovation hubs, while four organisations mentioned considering venture capital agreements or setting up a separate innovation unit.

In the literature, the internal contextual dimension of an organisation cannot be ignored in terms of its organisational structure and management of innovation processes and practices (Nagano et al., 2014). Berglund (2007) also mentioned that innovation required internal support structures. The results advocate that the structures should encourage empowerment and effective decision-making. A few organisations found that setting up separate innovation units, making use of innovation hubs or entering venture capital agreements, proved beneficial to encourage broader innovative thinking. The support structures should ideally provide accessibility and quick decision-making. Miozzo and Dewick (2002) asserted that corporate governance theory must come to terms with innovation by explaining how organisational structures and management support the commitment of resources to innovation.

6.2.4.2 Culture

Sections 5.5.3 and 6.2.3 discussed culture as being the top impediment or challenge to innovation. In this section, we discuss culture as a contextual factor and the influence it has on innovation. Organisations believed to have a high level of innovativeness spend far less time discussing culture (see section 5.5.3). This could suggest that less innovative organisations spend too much time focussing on culture or this is deemed to be a constraint that prevents it from being more innovative. In the literature, the management system must take culture into consideration in innovation (among other elements such as organisational structure, leadership, decision-making, and evaluation criteria) (O'Connor & Ayers, 2005). Furthermore, an innovative culture is considered a softer element that should provide room for sufficient creativity, autonomy and motivation (Nagano et al., 2014). This must be balanced against more rigid control systems and processes in risk management (Lam, 2003).

In terms of balancing rigid risk management systems against softer aspects such as culture, most respondents did not believe their organisations to be bureaucratic as shown in Figure 14 in section 5.5.4.2.1. This suggests that there is a sufficient creativity, autonomy and motivation and that there is a balance between the risk controls and cultural nuances. However, half of the respondents (50%) thought their organisations were risk averse while only 29% of respondents thought it was bureaucratic. This supports the in literature that the more bureaucratic an organisation is, the more risk averse is its culture (Osborne & Flemig, 2015). This could potentially suggest that although there is a balance, organisations are conscious about protecting their existing business or would only make decisions on higher risk initiatives considering further evidence and information.

It was also evident in section 5.5.4.2.2 that innovation was regarded as a learning process. Respondents discussed the concept of continuous improvement and recognising the value of taking small steps so decisions can be quickly taken to take corrective measures aligned to the other concept of failing fast. Considering this, section 5.5.4.2.3 dealt with how failure is handled within organisations. The key themes that emerged were empowering staff to take decisions by actively encouraging mistakes within reasonable circumstances, accountability, and failing fast to recover quickly. However, despite the overwhelming view that innovation is considered as a learning process, the majority found there to be resistance to change. A respondent

likened the organisation to an organism by saying, “Any organism, like an organisation, always resists change. You always have to be aware of resistance to change. It is always there. It is human nature”. Resistance to change was cited as one of the obstacles to innovation when looking at knowledge-skill within the organisation (Mohnen & Roller, 2005). As discussed in the literature, this is related to stakeholder theory, organisational slack and management control systems. The key themes that emerged from the results related to getting buy-in from stakeholders, leadership and effective communication, which link directly to stakeholder management of an organisation.

6.2.4.3 Resources

There was an equally split view on whether the respondents’ organisations had spare capacity. There were contrasting views where some viewed organisational slack in a negative light, given that time is a precious commodity. However, others mentioned that it depends on who you ask in the organisation, as one may have built excess capacity in some parts of the organisation. Most organisations with a high level of perceived innovativeness did not believe that they had much organisational slack. This corroborates with the scarcity-driven view, which argues that higher levels of slack result in decreased risk-taking, given that highly innovative firms tend to be more risk seeking, as shown in 5.6.3 above (Wu, 2008). This contradicts a more recent literature study which showed a positive relationship between slack and entrepreneurial propensity to innovation (De Falco & Renzi, 2015).

Another interesting concept that emerged pertained to the prioritisation of spare capacity. The findings also suggested that spare capacity should be channelled into implementing strategic objectives. This is supported by the view that dynamic capabilities and good strategy are key determinants to sustain better performance by deploying resources to create a competitive advantage for the organisation (Pitelis & Teece, 2015). Furthermore, organisations must be able to allocate resources to reduce risk in an increasingly uncertain environment (Teece et al., 2016). Therefore, this suggests that even if there is a mixed view on organisational slack, highly innovative firms tend to be better at effectively allocating and prioritising their resources to achieve their strategic initiatives.

Almost all respondents viewed human capital as an enabling factor for innovation. It was even argued that “it is an essential factor; it is the only factor”. Other emerging

themes related to diversity of viewpoints, skill set and passion for innovation. This is supported by literature where human capital is an enabling factor for innovation and collaborative relationships have become an essential component of an organisation's innovation activities (Leiponen, 2005). Furthermore, organisations would not benefit as much without having sufficient skills and competencies.

6.2.5 Conclusive findings for research question 1

To explore the interplay between corporate innovation, risk management and internal governance, this research question explored the innovation process in relation to risk management and governance. In summary, the following salient conclusions can be drawn based on the findings of this research question and the discussions presented in section 6.2 in relation to the literature:

- Innovation is a complex process influenced by the interplay between corporate innovation, risk management and internal governance. It should strike a balance between risk and return, especially where risk management and governance becomes more stringent, with greater oversight in the later stages (implementation and evaluation).
- A stage-gate approach to innovation is still relevant and allowed senior leaders to add value in their organisations by using checkpoints to test their thinking.
- The implementation phase is more expensive and requires a greater investment than the ideation phase. Senior leaders should ensure that there is greater involvement of stakeholders in the implementation phase of the innovation process to ensure that various considerations are considered.
- In the evaluation phase, risk management should be made more explicit in the integration across the innovation process. However, risk management and governance would increase as it progresses with the innovation process where there would be little to no risk controls in the early stages of the innovation process. The evaluation criteria should make use of both qualitative and quantitative metrics when making decisions.
- Risk management and governance remain key tools to manage innovation. Culture, resources and capital were the top three impediments or challenges to innovation. Risk management and governance were not explicitly listed as the key obstacles to innovation and should continually be adapted to remain relevant for the current business model.

- Even though there may be different structures in organisations, senior leaders should recognise the need for quick decision-making and encourage empowerment that is conducive to innovation. There is little evidence to suggest which type of structure (whether formal or informal) is better than another but it must allow for accessibility and accountability.
- Culture is a softer aspect in innovation that must be taken into consideration by providing sufficient room for autonomy, creativity and motivation. Innovation must be regarded as a learning process such that the organisation tolerates failure and can quickly recover from these situations. While there may be resistance to change, senior leaders should overcome this through effective communication, taking people along the journey through leadership, and getting the necessary buy-in.
- Human capital is regarded as an enabling factor for innovation. The deployment and prioritisation of resources in an uncertain environment is a key determinant to sustain better performance.

6.3 Research question 2: Managing uncertainty by utilising risk management, control systems and internal governance

The second research question sought to understand how the control systems, risk management and governance processes, as well as the perceptions towards risk, aided in managing uncertainty such that these become conducive to innovation efforts.

6.3.1 Risk management processes and internal governance

Risk management and internal governance are inextricably linked to innovation. Furthermore, there may also be aspects of prioritisation and culture that inform the innovation process. It is therefore important that there is an effective balance to address this dynamic tension. One interviewed CEO said, “There has to be a balance. You have to have a tolerance for risk. Let’s take the implementation or the start-up of a new process: You have to actually think through every step of what could go wrong, what are the various scenarios. Try to plan for it, or try to eliminate that possibility of it happening. In a highly risky business… you live with risk all the time and it’s about managing those risks and it becomes second nature really. And it is a very important aspect of your organisational culture to think before you actually do, or open a specific process”. This is supported by the view in literature that risk management should

recognise the need to balance more rigid control systems against softer aspects such as risk culture, leadership and communication (Lam, 2003).

Risk management processes and governance were largely associated with the implementation and evaluation stages of the innovation process. This is shown in Figure 17 in section 5.6.1. In terms of management and risk control systems, this was largely about risk and impact assessments, procedures and policies, frequent reporting, limits and controls through delegation of authority or tracking of financial cash flows. Risk control systems will be discussed in further detail in section 6.3.2.

Risk management should evolve to become embedded as part of the business function. This view highlighted the mind-set shift that risk management is no longer just about managing risks but also about focussing on opportunities to create partnerships with the business. This is supported by the view in the literature that the process of responding to not only the problems but also the opportunities that arise from an outcome being different to what was expected (Sweeting, 2011). Furthermore, the literature argued that risk should not only be interpreted in a probabilistic manner but also in the context of a leader's responsibility to assess and supervise the risk (Ruefli et al., 1999). This suggests that the softer aspects of leadership and accountability are vital components in risk management.

Governance, conversely, was largely associated with decision-making forums such as Executive Committees or Prioritisation Committees. Highly innovative organisations spent far less time discussing governance relative to firms with lower levels of perceived innovativeness as shown in Figure 18 in section 5.6.1. This could potentially suggest that people may view governance to be a perceived impediment rather than focussing on the actual impediments or challenges that constrain the firm's innovation efforts (refer to section 5.5.3). This view is suggested by Respondent 11, who said, "I think some control systems are just virtually there; they not necessarily actual barriers but perceived barriers that people can't get by" in section 5.5.2. Given that both risk and governance play a central role in innovation, it is important that there is a balance between these constructs to promote innovation (Bowers & Khorakian, 2014; Shapiro et al., 2015).

6.3.2 Risk control systems

In section 5.6.2.1, the risk control systems were largely formal in nature. Highly innovative organisations were more inclined towards using risk control systems that had both formal and informal elements of decision-making present, while firms with lower levels of innovativeness tended to resort to only formal means of decision-making. Respondents also displayed positive connotations towards risk control systems where both formal and informal elements were presented, as shown in Table 20 in section 5.6.2.1. For firms with lower levels of innovativeness, literature supports that management control systems significantly impeded creativity in innovation organisations through the use of formal controls, red tape, poor organisational support and evaluation (Amabile, 1988). This could suggest that decision-making in highly innovative firms happens through better socialisation in a conducive and collaborative manner. This is also supported by the view in literature that creativity is enhanced where organisations utilise formal controls in a collaborative and facilitative manner (Bedford, 2015; Haustein et al., 2014).

Formal systems would indicate that diagnostic and interactive control systems are largely used to manage the dynamic tension to encourage performance. This is supported by the emerging themes of traditional control and monitoring (through adherence to policies and procedures, reporting, committees, delegation of authority) as set out in Table 19 in section 5.6.1. This shows that it would largely be based on diagnostic control systems (Bedford, 2015; Davila et al., 2009). There was predominantly positive connotation associated with the direct involvement of senior leadership to shape innovation where respondents used a blended risk control systems. This corroborates with the literature where senior leaders use interactive control systems in decision-making through open dialogue and shaping innovation (Bisbe & Malagueño, 2009; Davila et al., 2009).

Other key themes that were present related to empowerment and accountability, which pertain to culture. In Table 19 and in section 5.6.2.2, it was important to empower individuals to make decisions, especially at the frontline. Furthermore, where there was not necessarily direct involvement from senior management to shape innovation, empowerment was also discussed in the context that technical decisions should be left to the technical experts, depending on the type of innovation. This is supported by literature, as management and risk control are central to the success of an innovation and managers must take responsibility for innovation activities (Biais et al., 2015).

Furthermore, clear roles and responsibilities should be defined by the risk management and governance frameworks to hold people accountable.

6.3.3 Perceived risk

Highly innovative organisations tend to be more risk-seeking compared to firms with lower levels of innovativeness, as shown in Figure 25 in section 5.6.3.1. Although most organisations tended towards being risk neutral, this seemed to result in being risk conscious by erring on the side of caution. This is shown in Figure 27 in section 5.6.3.2. In the literature, this view is supported where a certain risk tolerance is required for risk-taking when venturing into new innovation initiatives, and an optimistic view may lead to higher risk-taking in seeking opportunities (Dai et al., 2014). It is also supported by the view in literature (Shapiro et al., 2015) that individuals involved in innovation may be more risk-averse if there are fewer options to reduce risks. There may also be a bias in the results that have shown that respondents err on the side of caution, as most of the respondents were involved with innovation.

6.3.4 Conclusive findings for research question 2

The second research question sought to understand how the control systems, risk management and governance processes, as well as the perceptions towards risk, aided in managing uncertainty such that these become conducive to innovation efforts.
In summary, the following salient conclusions can be drawn based on findings of this research question and the discussions presented in section 6.3 above in relation to the literature:

- The results supported the view that greater value would be derived if risk management is made more explicit in the integration of the innovation process (Bowers & Khorakian, 2014). It should evolve to become embedded within the business function. It is usually considered an implicit aspect that runs throughout the process. However, the results extend to the literature that risk management does not necessarily run throughout the innovation process but rather increases when stepping through the innovation process (with little in the early ideation phase and becoming more stringent towards the later phases of implementation to evaluation). Therefore, the results indicate the integration of the primary constructs within the process to better manage innovation.

- The constant monitoring and evaluation aspects (as discussed in section 6.2.1.3) for highly innovative firms suggest that the innovation process is iterative.
- Governance and risk management play a central role in the innovation process. Governance was largely associated with decision-making forums and could be seen as a perceived impediment to innovation rather than an actual challenge preventing the organisation from innovating.
- Management risk control systems should incorporate both formal and informal elements of decision-making, if the controls are used in a productive and collaborative manner through better socialisation and communication. This suggests that a blended approach predominantly based on diagnostic control systems (based on traditional control and monitoring), with interactive control systems (based on senior leader involvement to shape innovation through open communication), should be utilised.
- While management control systems could stifle creativity in organisations with low levels of perceived innovation due to stringent control, red tape and bureaucracy, it could be argued that it is only a perceived barrier to innovation and not an actual barrier. However, the control systems should be structured such that it is supportive of innovation initiatives.
- Business leaders should have an optimistic view and a greater tolerance for risk-taking when seeking new opportunities. There should, however, be a balance where there is a realistic risk assessment with ongoing monitoring and evaluation.

6.4 Research question 3: Integration of stakeholder management in innovation process and decision-making

The third research question sought to identify how stakeholder management integrates with the management of the innovation process. Through integration of multiple stakeholder issues, it may require collaborative relationships and a trust-based approach to the management of an organisation's innovation efforts. Therefore, the coordination and prioritisation of innovation activities should be important through effective decision-making and evaluation criteria.

6.4.1 Stakeholder implications

It was unanimously agreed by all respondents that stakeholder implications were considered when undergoing innovation activities (section 5.7.1). However, certain stakeholders were deliberately ignored at the early stages of the innovation process. Typically, risk managers and governance would only be involved later in the process. Some common practical issues associated with stakeholder management include limiting and managing the size of the number of stakeholders involved in the process. While all the stakeholders' implications would be considered, the stakeholders would not necessarily be involved, suggesting a systematic approach to stakeholder management. This supported the view by literature that a variety of stakeholders is typically identified by organisations as part of the innovation process, and that the integration of multiple stakeholder issues assists in balancing a variety of often-conflicting stakeholder interests (Driessen & Hillebrand, 2013). It did not, however, address the systematic inclusion or exclusion of certain stakeholders during different stages of the innovation process.

The combination of different stakeholder concerns and issues may result in tensions (Hill & Jones, 1992). Therefore, the results support the view that certain stakeholders are deliberately ignored or not wholly involved at certain stages of the innovation process, especially at the early ideation phase of the process. Given that most respondents (86%) did not discuss having a formalised approach to stakeholder management and engagement, tensions could be reduced if more organisations adopted a more formalised approach to deal with conflicting agendas and different views.

While stakeholder theory does consider the implications on both internal and external stakeholders, Figure 28 in section 5.7.1.1 showed that very few respondents considered broader external stakeholders, such as the social implications or the impact an initiative would have on the community at large. This is supported by literature that stakeholder theory is a framework for managing relationships across the political, economic and social environment by considering the interests of various stakeholders such as employees, customers, shareholders, government and the community at large (Carroll & Buchholtz, 2012). This could suggest that some organisations would initially only think of their internal stakeholders as their primary stakeholders, especially given that other stakeholders could largely reside in the periphery. In order to increase organisational survival, external events should be recognised by opening up the

organisation's boundaries to external sources of innovation and knowledge (Poutanen et al., 2016). This suggests that organisations should learn to embrace uncertainty by utilising new sources to knowledge procurement that they may not necessarily have internally.

In terms of key themes of collaboration, cross-functional teams, inter-departmental initiatives, initiatives running across different business units or subsidiaries to prevent silos, informal and formal socialisation of concepts, and the involvement through various committee structures and teams were discussed as internal sources of collaboration. Only a few organisations referred to external sources of collaboration through co-creation and partnerships. The physical seating arrangement was also an important aspect that created a natural collaboration where teams are in close proximity to one another. In the literature, collaborations that share sources of knowledge from both an internal and external perspective are vital to encourage innovation through information transfer (Leiponen, 2005). Miozzo and Dewick (2002) contend that one of the factors that innovation and capabilities depend on is relationships and collaborations for internal and external sources of knowledge. The results reflect that internal collaboration does occur; however, external collaboration is not widely utilised. This could suggest that some organisations believe they have the right competences and capabilities for innovation, they prefer to hold onto their intellectual capital, or they prefer to be more internally focussed by not partnering with external stakeholders. Other organisations viewed co-creation as vital element within innovation where partners could assist with different or all stages of the innovation process from coming up with the idea to final implementation.

6.4.2 Trust-based approach to the management of innovation

A positive view was evident where there appeared to be a trust-based approach to the management of an organisation's innovation efforts. Trust was indicative of conversation and collaboration occurring within and across the organisation, where without collaboration, one does not have trust. It was even argued that if there is no trust, it would lead to a self-imposed risk mitigation strategy, as people want to be trusted by others but organisations want to trust their people to do what is right. The minority indicated that there was not a trust-based approach, given that organisations impose numerous controls and governance measures. This reflects that it is non-trusted and led to the emerging concept of "trust-but-verify", where, despite there being trust, it is important for (independent) validation and verification.

In literature, stakeholder theorists favour a more organic “trust-based” approach to the management, with less stringent governance control measures and evaluations (Robeson & O’Connor, 2007). However, it was observed in section 5.5.1.3 that highly innovative firms were more conscious of evaluation and constant monitoring compared to firms with lower levels of innovativeness. This therefore extends to the literature that a “trust-based” approach could be favoured despite there being more stringent evaluation criteria in place. Depending on the perception, there could also be significant trust in place with the understanding that there will be verification and validation (i.e. “trust-but-verify”) through the stakeholder management process.

It was evident in section 5.7.2.1 that most respondents (71%) indicated a medium to high perceived level of autonomy. When comparing this to the perceived level of innovativeness, it was anticipated that highly innovative organisations would have a greater sense of autonomy than those with lower levels of innovativeness. This was also evident in Figure 31 in section 5.7.2.1. This view is supported by literature where a culture that provided greater autonomy would allow for improvement of the organisation’s competitive advantage (Agostini et al., 2016). It was observed that highly autonomous organisations spent less relative time discussing governance compared to firms with lower levels of innovativeness. This could suggest that firms with lower levels of innovation attributed governance as a perceived barrier to innovation. In literature, internal governance and control with adequate autonomy is a risk that needs to be managed (Berglund, 2007; Tidd & Bessant, 2009). This corroborates with the literature but also alludes that a balance needs to be present to have sufficient governance and controls that provide adequate autonomy. Nagano et al. (2014) furthermore described one of the contextual attributes being an innovative culture that provided autonomy, motivation and creativity.

6.4.3 Decision-making

Decisions could be made based on data; perceptions, intuition or beliefs; or utilising a combination of the former aspects. The data-driven element largely relied on gathering data to evaluate this against a business case or utilising evaluation criteria in decision-making. This largely resided in the quantitative metrics of decision-making. Risk management aspects were important by utilising appropriate management and control systems, establishing limits or controls, and adhering to any policies or procedures. This is shown by the co-occurring set of codes shown in Figure 33 in section 5.7.3.

Belief-driven decision-making was largely based on one's perceptions, intuition or personal values and beliefs. Therefore, open communication was emphasised as important to gain buy-in. However, in some cases where the organisations were founder-led, group decision-making was not a priority. In literature, boundary and belief control systems are considered to be value systems that frame an organisation's strategic purpose (Bisbe & Malagueño, 2015).

Most organisations prefer to use a blended approach to decision-making based on both quantitate and qualitative aspects. However, it is important that decisions are made by consensus in a committee or forum as a group, and that excessive perceived risks are "killed quickly". This integrated, agile approach is supported by the views of Cooper (2009) to foster relationships between different functions and develop decision-making processes and metrics with a focus on effective governance. Furthermore, it is supported by literature that despite there being tensions (including the interplay of controls and decision-making in managing innovation between different stakeholders), each decision provides an opportunity to gather information, re-evaluate the situation and take appropriate action (Bowers & Khorakian, 2014). It was interesting that decision-making differs depending on level of seniority, where people at lower levels use more "concrete" data and people in relatively senior positions may not have all the data available. This agreed with the view of Leiponen (2005), who argued that there should be some level of flexibility, provided that the controls aided in focussing on strategic objectives, prioritising resource capacity, preventing unproductive arguments, and good execution.

Most teams also discussed that they had diverse representation in terms of skill set in their decision-making bodies. It was suggested that to be innovative, a wide and diverse economy should be represented. This was also cherished by some organisations where they believed it aided the innovation process. Where there was no diverse representation in terms of decision-making bodies, there was either an over-representation of a certain professional skill set or it was founder-led. Diverse representation is important from a literature perspective, as stakeholder theory provides an appropriate lens which extends beyond only economic performance when considering the complex perspective of value that different stakeholders look for (Harrison & Wicks, 2013). This suggests that it is important to hear the views from different representatives in decision-making, and could indicate issues arising if certain stakeholders are deliberately ignored in different stages of the innovation process, as mentioned in section 6.4.1.

6.4.4 Conclusive findings for research question 3

This research question sought to identify how stakeholder management integrated with management of innovation. It also looked at decision-making and diverse representation that could assist in managing conflicting tensions through better coordination and prioritisation of an organisation's innovation efforts. In summary, the following salient conclusions can be drawn based on the findings of this research question and the discussions presented in section 6.4 in relation to the literature:

- Stakeholder implications are considered when undergoing innovation initiatives. However, certain stakeholders are deliberately ignored or are not involved in the early stages of the innovation process. More stringent stakeholder management is required in the later phases of the innovation process when more people are systematically included, become involved, or are taken on the journey to get buy-in.
- Business leaders should place greater emphasis by not only taking internal sources of knowledge into consideration but also opening organisational boundaries to external sources of knowledge and innovation. Stakeholder management should extend to engrain the broader social, political and economic implications in its innovation efforts. Business leaders may gain a competitive advantage by utilising external sources of collaboration through partnerships and co-creation in addition to internal sources of collaboration commonly utilised by most organisations.
- A more formalised approach to stakeholder management could reduce tensions caused by different agendas. This could balance a variety of often-conflicting stakeholder interests.
- A trust-based approach to the management of an organisation's innovation efforts was favoured. This was indicative that there was collaboration within the organisation despite there being more stringent evaluation criteria. Depending on the perception of the beholder, there could still be significant trust even if there are validations and verifications as described by the concept of "trust-but-verify".
- Organisations should provide their staff with sufficient autonomy to encourage greater levels of trust, empowerment and collaboration within the organisation. The innovation culture should balance the risk of governance and control with adequate autonomy.
- Business leaders preferred to make data-driven decisions based on quantitative evaluation criteria. However, a blended approach is preferred that considered

both quantitative and qualitative aspects. Decision-making should foster relationships with focus on governance. Decisions should be made quickly by consensus in decision-making forums to manage innovation uncertainty and failing initiatives should be "killed quickly". It should provide flexibility to ensure that there is focus on achieving strategic objectives.

- Business leaders should ensure that their decision-making bodies have diverse representation in terms of skill set to provide appropriate lenses that consider the complex perspective of value that different stakeholders seek.

6.5 Formulation of the *ex post facto* model of innovation management

The original integrated innovation management model by Nagano et al. (2014) has been presented in Figure 1 in the literature review. This model will be used as the starting point for the formulation of the *ex post facto* model of innovation management with the integration of risk management and governance that will be presented below.

6.5.1 Changes to the original integrated innovation management model

The original integrated innovation model (refer to Figure 1) will be adapted to incorporate changes and additions to the findings and discussions of results presented in Chapter 5 and Chapter 6.

6.5.1.1 Innovation process

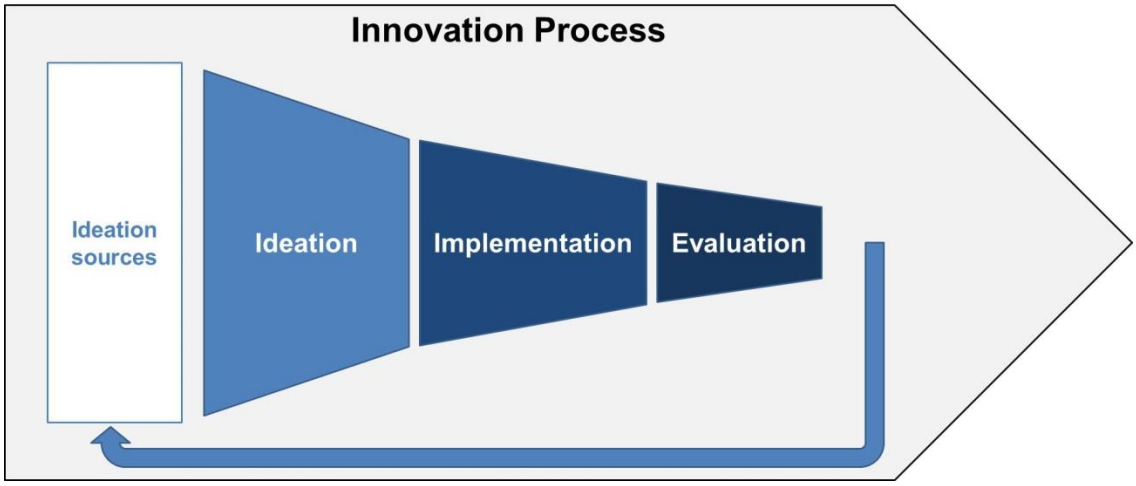
The stage-gate approach to the innovation remains relevant based on the findings and discussion of the results in section 6.2.1. However, it is not linear or sequential and should account for iterative feedback processes. This feedback loop has been incorporated as a change to the integrated innovation management model.

Respondents did not discuss the starting point of the innovation process in terms of prospection or signs, as per the original integrated innovation model proposed by Nagano et al. (2014). Respondents discussed ideation sources but saw the idea as the initial starting point of the innovation process.

Respondents did discuss strategic alignment in terms of the decision-making in section 5.7.3, and the prioritisation of resources and spare capacity to achieve the strategic

objectives of the organisation in section 6.2.4.3. While these were important elements of the innovation process, they were enabling attributes of the innovation process rather than part of process itself. Therefore, for simplicity, the innovation process model presented has three stages, from ideation to implementation to evaluation, and is an iterative process. The funnel shape of the innovation represents that an organisation begins the process with many ideas in the ideation where there are many available options available with little restrictions. The ideas get refined and narrowed down as they evolve with the innovation process. This is depicted by the narrowing of the funnel in the implementation and evaluation phases of the innovation process.

Figure 36: Simplified iterative innovation process



Source: Author's own

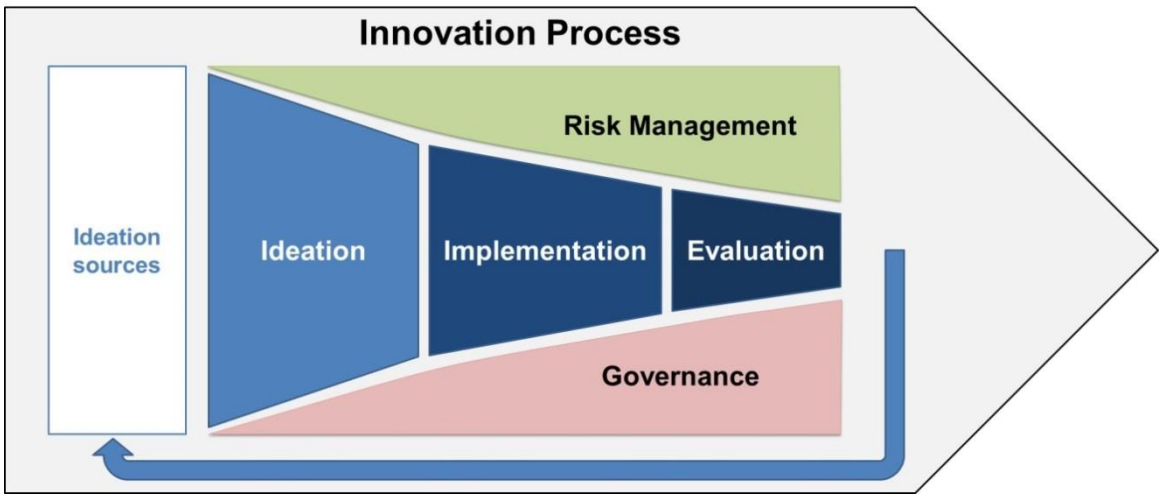
6.5.1.2 Risk management and governance

Risk management and governance play a central role in innovation to manage uncertainty, especially in the later phases (implementation and evaluation) of the innovation process as shown in sections 5.5.1.2, 5.5.1.3 and 5.5.2, where there were strong associations between risk management and governance. In the ideation phase of the innovation process, there should be little restrictions put in place.

The view was that risk management should evolve and become well embedded within the organisation's innovation efforts (section 5.6.1). Internal governance, when viewed as wealth-creation process, is seen as a potential differentiator for the organisation and is "essential for the sustainability and competitiveness of an organisation to always innovate" (section 5.6.1.2).

Risk management and governance are interdependent and interrelated with innovation, as shown by the results in section 5.5.2. Innovation carries risks, and these risks need to be accepted and managed appropriately. There needs to be a balance when managing innovation through risk management and governance. Therefore, it was incorporated as part of the innovation process where risk management and governance increased as the innovation evolved along the process.

Figure 37: Simplified iterative innovation process with the integration of risk management and governance



Source: Author's own

6.5.1.3 Contextual attributes

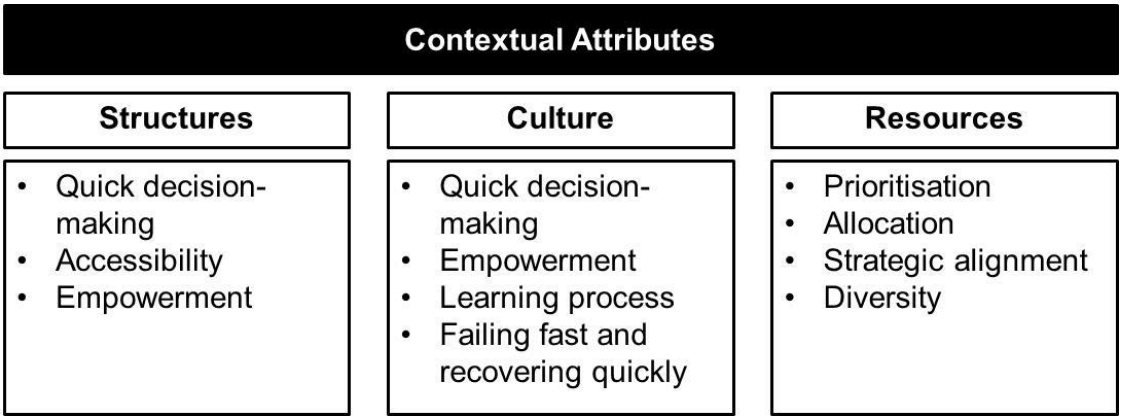
The contextual attributes would assist with innovation and are discussed below.

Structures: The organisational and management structures must be supportive of innovation. The structures must enable quick decision-making, accessibility and empowerment for improved innovation, as discussed in section 6.2.4.1.

Culture: Business leaders should pay special attention to culture, which was regarded as a key impediment or challenge to innovation in section 5.5.3. The culture should allow for creativity, autonomy and motivation, where innovation is regarded as a learning process in the organisation. It should not be too bureaucratic and people should have sufficient room available to make mistakes within reasonable grounds. The culture must allow for empowerment and quick decision-making such that failure is dealt with timeously and the organisation can overcome and recover quickly from this situation. This is discussed in section 6.2.4.2.

Resources: This was the second most frequently listed impediment or challenge to innovation in section 5.5.3. Human capital is regarded as an enabling factor for innovation. Spare capacity should be channelled into achieving the strategic objectives of the organisation. A theme that emerged was the prioritisation of spare capacity to reduce any organisational slack that may have been present through the effective allocation of resources. There should also be diverse representation in terms of skill set where people have a passion for innovation. This is discussed in section 6.2.4.3.

Figure 38: Contextual attributes to the innovation process



Source: Author's own

6.5.2 Conclusion

The original integration innovation management model has been revised to incorporate the findings and discussions from the research study presented in Chapters 5 and 6. The additions and amendments to the original model have been listed above and will be incorporated into a revised integrated model. An *ex post facto* model of innovation management with the integration of risk management and governance will be presented in the next and final chapter. This will adapt an existing model that has been presented in literature and will contribute to the existing body of knowledge available. This model can be used as an integrated framework to manage successful innovation.

Chapter 7: Conclusion and Recommendations

7.1 Introduction

In this chapter, a summary of the key findings of this research study are presented. The Integrated Innovation Management *Ex Post Facto* Model is discussed in terms of the conceptualisation and formulation in section 6.5, along with the application and implications it would have for business. The implications and recommendations that this research would have for management are also briefly discussed. Finally, the limitations and potential suggestions for future research are discussed.

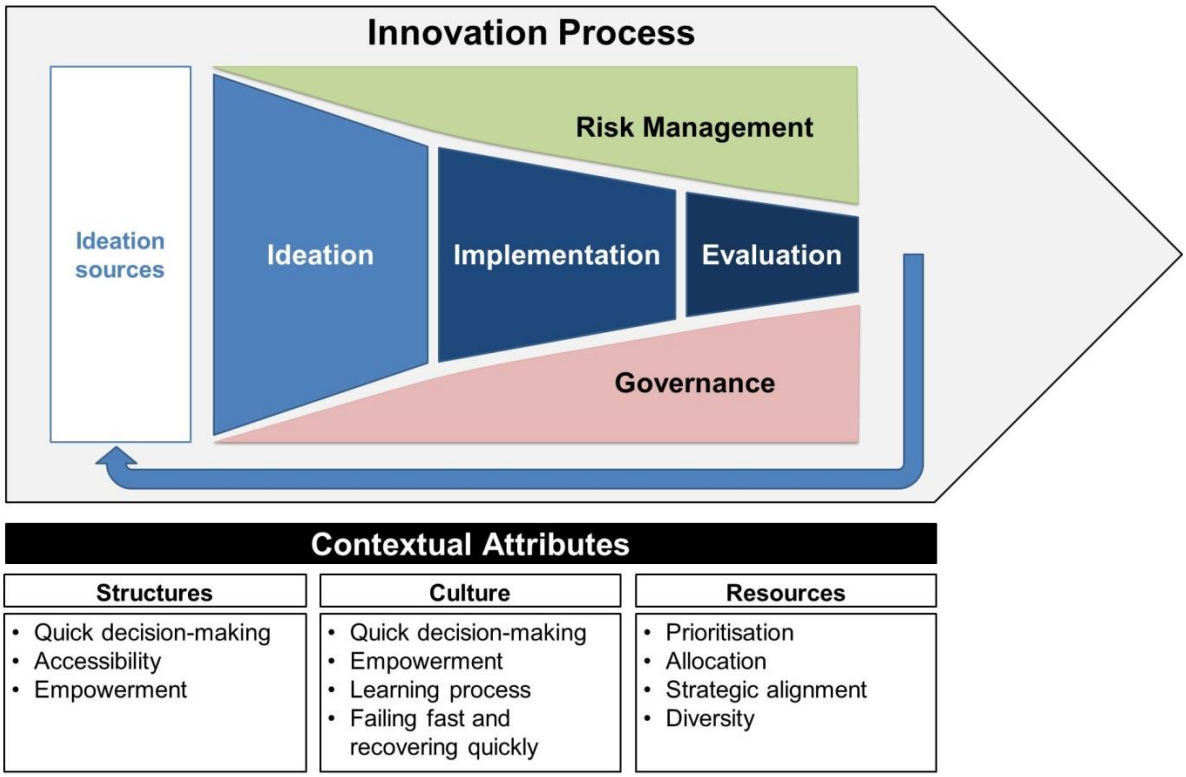
7.2 Principal findings

7.2.1 *Ex post facto* model of innovation management with the integration of risk management and governance

The formulation of the *ex post facto* model was conceptualised in section 6.5 based on the findings of this research study and the model in Figure 1. This was developed through careful consideration by integrating the primary constructs and key themes such that an interplay and balance of these aspects was achieved. This will assist organisations in managing innovation uncertainty by shaping the design of the innovation process through risk management and governance. Furthermore, it should assist in reducing the challenge of managing innovation uncertainty.

The model should be viewed from left to right, where the innovation begins with ideation sources and these numerous innovative ideas move into a simplified iterative process from ideation to implementation to evaluation. Risk management and governance is well embedded within this innovation process and becomes more significant as the innovation evolves. The contextual attributes of structures, culture and resources that contribute to the success of an organisation's innovation efforts are also included as part of the model. It is envisaged that further research can build on this model to assist organisations with achieving greater effectiveness through their innovation efforts. The consolidated 'Innovation Management *ex post facto* model with the integration of Risk Management and Governance' is presented in Figure 39 below.

Figure 39: Innovation management *ex post facto* model with the integration of risk management and governance



Source: Author's own

7.2.2 Synthesis of research findings

The main aim of this research was to understand the dynamics between corporate innovation, risk management and internal governance, as well as to explore the contextual attributes that influence the relationship between these constructs. Several concluding observations came through the analysis and findings.

Firstly, the insights obtained from the empirical research based on thematic analysis highlighted the interplay between the primary constructs of corporate innovation, risk management and internal governance, as collated into the model presented in section 7.2.1. This is pertinent as innovation is recognised as an imperative to pursue to remain competitive and sustainable (Merriman & Nam, 2015). However, innovation means that risks need to be taken to remain relevant, and the risk management thereof is essential (Vargas-Hernández, 2011).

Secondly, evaluation remains a critical component of risk management and governance (Bowers & Khorakian, 2014). By making risk management and governance

explicit in the iterative innovation process, multiple decision-making checkpoints can be taken into consideration through evaluation. A blended approach to decision-making based on quantitative and qualitative criteria should be utilised by fostering relationships with a focus on governance. Despite there being stringent evaluation criteria, a trust-based approach to the management of an organisation's innovation efforts can still exist depending on the perception of the individual that governance could be regarded as a wealth-creation process. This is pertinent given that human capital is seen as an essential enabling factor to the success of an organisation's innovation efforts. In addition, there should be sufficient autonomy if resources are effectively allocated and prioritised to achieve the strategic objectives of the organisation.

Thirdly, risk management and governance remain key tools to manage innovation. These were not cited as key impediments or challenges to innovation but may only be a perceived barrier (rather than an actual barrier) to innovation. Management risk control systems should incorporate both formal and informal elements in their decision-making criteria. Better socialisation and communication of the organisation's innovation efforts as well as the involvement of senior management will allow for innovation to be performed in a productive and collaborative manner. While it should strike a balance, the culture and structure of the organisation must allow for empowerment and quick decision-making. Although culture is regarded as a softer element, it must provide sufficient autonomy, creativity and motivation (Nagano et al., 2014).

Finally, through diverse representation of skill set in decision-making bodies, greater value would be generated in terms of recognising the complexity of value that is sought by different stakeholders. A variety of stakeholders should be considered and identified by organisations as part of the innovation process to assist in balancing a variety of often-conflicting stakeholder interests (Driessen & Hillebrand, 2013). This systematic approach to stakeholder management may deliberatively include or exclude certain stakeholders at different stages of the innovation process. External sources of knowledge through the collaboration with external stakeholders could be utilised by opening organisational boundaries to potentially gain a competitive advantage.

7.2.3 Contribution to literature

The following contributions are made to literature through this research study, based on the findings and discussion of results in Chapter 6:

- The interplay between the primary constructs remains fairly nascent from an academic perspective (Sapra et al., 2014). This research study has extended to the literature through the conceptual integration innovation model with the integration of risk management and governance (see section 7.2.1). It highlighted the importance of managing uncertainty in the innovation process through appropriate governance controls and risk management. This interplay is noteworthy as there has been limited research on the relationship between innovation and aspects of corporate governance (Shapiro et al., 2015).
- The interplay between the primary constructs also considered the implications that the contextual attributes of structures, resources and culture have on shaping innovation (see section 6.2.4). The organisational and management structures should be conducive to the empowerment of effective and quick decision-making. This addressed the limitation where consideration of the organisational and institutional contexts shaped the innovation process and innovative choices through corporate governance and risk management (Nagano et al., 2014; Sapra et al., 2014).
- While greater value would be derived if risk management is made more explicit as part of the innovation process (Bowers & Khorakian, 2014), risk management should not run uniformly throughout the innovation process (see section 6.3). It should increase when stepping through the innovation process (with little in the early ideation phase and becoming more stringent towards the later phases of implementation to evaluation).
- Decision-making and prioritisation are important factors in the innovation process. These were found to be one of the common impediments or challenges to innovation (see section 5.5.3) and could not be directly attributed to a common category of the obstacles to innovation (Mohnen & Roller, 2005). These factors should be considered as a separate category that impedes innovation.
- The systematic inclusion or exclusion of certain stakeholders during different stages of the innovation process allowed for the different stakeholders' implications to be considered, while not necessarily requiring the involvement and integration of multiple stakeholders. This extended to the literature, which only recognised the identification of multiple stakeholder issues in balancing a variety of often-conflicting stakeholder interests (Driessen & Hillebrand, 2013).
- A "trust-based" approach to the management of an organisation's innovation efforts is favoured despite there being more stringent evaluation criteria. There

could be significant trust in place with the understanding that there will be verification and validation (i.e. the concept of “trust-but-verify”) depending on the perception of those involved in the process (see section 6.4.2). This extends to literature which argued that a “trust-based” approach is favoured with less stringent governance control measures and evaluations (Robeson & O’Connor, 2007).

7.3 Implications and recommendations for management

Several implications and recommendations for management have been identified through this research, especially for large organisations that are undergoing innovation initiatives. Innovation remains a key activity to pursue in order to remain competitive and relevant in an uncertain environment (Merriman & Nam, 2015; Nagano et al., 2014).

Firstly, it is vital that managers are cognisant of risk management and governance in the innovation process. It is therefore recommended that managers should make use of the consolidated ‘Innovation Management *ex post facto* model with the integration of Risk Management and Governance’ as presented in this research study, which provides an integrated framework to manage innovation uncertainty. It should allow managers to assess their organisations against key elements of the contextual attributes that encourage successful innovation. By embedding risk management and governance, this could potentially reduce the high levels of innovation failure rates (Heindenreich & Spieth, 2013; Merriman & Nam, 2015).

Secondly, managers need to focus on and address the common impediments or challenges to innovation. Culture is a crucial aspect within the innovation process and needs to be instilled by leadership through their active involvement to overcome resistance to change. Managers need to ensure that staff are empowered to make quick decisions and take accountability and responsibility for their actions. Resources and capital should be effectively prioritised and allocated towards the strategic goals of the organisation.

Thirdly, managers should have a greater tolerance for risk-taking when seeking new opportunities and be aware of where risk control systems and governance may be stifling innovation. A productive and collaborative approach should be adopted where risk management is well embedded and is viewed as a partnership with business.

Finally, managers should consider the broader implications of the company's innovative efforts on all stakeholders and have a formalised, systematic approach to stakeholder management. They should encourage both internal and external collaboration to gain different perspectives and sources of knowledge. A blended approach to decision-making, considering both quantitative and qualitative evaluation criteria, should be adopted, and which is encouraged by having diverse representation in decision-making bodies to consider the complex perspective of value that different stakeholders seek.

7.4 Limitations of the research

7.4.1 Researcher bias

At the time this study was conducted, the researcher was employed by a major financial services organisation based in Gauteng. Furthermore, the researcher had roles in both product development (dealing with innovation) and enterprise risk management. Given that exploratory research is subjective and could be influenced by the perspectives of the researcher, this may have potentially allowed for some bias where the researcher's values, beliefs and identity may have influenced the outcomes of analysing qualitative data (Denscombe, 2008). However, some academics have argued that researchers should be group members of the sample studied in order to understand their experiences by having the necessary judgement and subjective knowledge (Silverman, 2011). To overcome this researcher subjectivity, it was important for the researcher to acknowledge these potential observer biases, as their context would have an influence on how the findings and results of the research were interpreted (Saunders & Lewis, 2012).

7.4.2 Time horizon

The research data gathered for this study was cross-sectional, as the data was collected through interviews during a specific period (Saunders & Lewis, 2012). This assumed that the data obtained and associated results would remain relatively stable over time. However, the development of innovation and the effects that risk management and governance would have on these innovation efforts would only be gradually realised over time to determine the success and value generated through

these initiatives. Therefore, a longitudinal research design may serve to validate the findings of this research.

7.4.3 Researcher limitations

The data-gathering process of conducting in-depth interviews for this research study was completed over a short period, though greater than two months (see section 5.3). The researcher also conducted interviews with senior leaders within their organisations (see section 5.2) and this depended on their availability. Therefore, the number of interviews was limited due to the time constraints.

7.4.4 Subject bias

Respondents may have provided information that is unreliable and would have potentially threatened the trustworthiness and credibility of any research results (Saunders & Lewis, 2012). Given that the sample consisted only of senior leaders (CEOs or senior managers), the research would not represent the voice of those in lower levels of seniority. Furthermore, respondents may have a biased view on innovation, risk management and internal governance, depending on the context and the industry in which they operate. The social capital of respondents may have shaped their view (Woolcock & Narayan, 2000). For example, it could be argued that people from a well-resourced background may likely have a higher risk appetite compared to those who have worked in resource-scarce environments where the cost of failure is higher. Four of the respondents knew the researcher and thus their responses may have been affected or influenced by this familiarity.

7.4.5 Sampling bias

The use of snowball sampling and purposive sampling may have limited the transferability of this research to other industries, especially given that the sample was skewed towards the financial services sector. Generalisation or transferability has issues in terms of how representative a sample may be and the use of judgement when applying to other similar circumstances (Denscombe, 2008). Other problems that related to this sampling technique include community bias (the first participant will have a strong impact on the sample), non-random selections, vague overall sampling size, and wrong anchoring (uncertainty as to whether the sample is an accurate representation of the population).

7.4.6 Sample applicability

A further limitation was that the primary sample was restricted and therefore may have influenced the generalisability of the study. It included only large companies and therefore, the applicability of the model for smaller organisations such as small and medium enterprises was unclear. Although the research considered the views across multiple industries, the results cannot be transferred across all industries as the sample was limited to six different sectors. Furthermore, half of the respondents (50%) were from the financial services sector (as outlined in section 5.2.1.1), and the research data gathered may have skewed the results towards this industry.

As the interviews were only conducted in South Africa and limited to employees who work for large organisations based in South Africa (apart from one interview candidate where the candidate is based in Europe), the outcomes will be particularly relevant for businesses in this country, though they could possibly be relevant to other emerging markets or large organisations in a broader context. The primary sample would consist of senior leaders and therefore the perspectives and views of lower-level employees were not included. This may have led to biased results, as a balanced view from all levels in the organisation was not obtained.

7.5 Suggestions for future research

Given the exploratory nature of this research with little empirical research available from an academic perspective, there are possible avenues for future research to focus on the interplay between innovation, risk management and governance:

- The research conducted was aimed at large organisations. Given that innovation is pursued by organisations regardless of size, it may be worthwhile to consider embedding risk management and governance that is “fit-for-purpose” within the innovation process. This will assist in enhancing the effectiveness of organisations at different levels when undergoing innovation initiatives by using adequate risk management and governance controls, and thereby assist in reducing the high levels of innovation failure rates.
- A longitudinal study could be performed over a gradual period to consider the implications of success and value that an innovation initiative has to different

stakeholders. This may be useful to also manage innovation uncertainty in a rapidly changing environment.

- The research could also be expanded to broaden the sample by including the views of people at lower levels of seniority in their respective organisations. The role and profile of senior leaders may have influenced the findings and provided a subjective perspective. A more balanced account of interplay between innovation, risk management and governance may be provided if the sample is expanded.
- It would be useful to understand how the contextual attributes would moderate innovation such that it is balanced appropriately with risk management and governance to create a business partnership. These relationships could be explored through a series of quantitative studies to overcome some of the common limitations and biases of qualitative research.
- The *ex post facto* model proposed in this research study could be used in large organisations to further validate its effectiveness and usability. Although the model is simplistic and conceptual, it could be developed to account for specific nuances or attributes that were not considered as part of this research.
- Research could also be conducted to understand the interplay of innovation, governance and risk management from the perspective of failed innovation initiatives. This may remain relatively unexplored given the stigma and sensitivity around failure. It would also consider the implications and effects where risk management and governance is not conducive to innovation efforts.

7.6 Conclusion

This study has explored the interplay between corporate innovation, risk management and internal governance, as well as the contextual attributes of structures, resources and culture. It contributed to literature by providing an integrated innovation model that incorporates risk management and governance, especially in an area of study that is relatively nascent. This graphic representation could be applied by practitioners to enhance the effectiveness of innovation efforts and reduce high failure rates. It also gauged the effectiveness of organisations when undertaking innovation activities by using adequate risk management and governance controls to encourage a partnership that is conducive to innovation.

The findings of this research have established the importance that risk management and governance plays in innovation, where risk management and governance should be well embedded within the process to encourage a partnership that could allow for a competitive advantage and improved sustainability.

References

Agostini, L., Nosella, A., & Filippini, R. (2016). Users and radical innovation performance: The moderating role of the organisational context. *Technology Analysis & Strategic Management*, *28*(7), 798–810. http://doi.org/10.1080/09537325.2016.1156667

Alon, A., Koetzier, W., & Culp, S. (2013). The art of managing innovation risk. *Accenture-Outlook, the Journal of High-Performance Business*, *2*(1), 1–4. Retrieved from https://www.accenture.com/us-en/insight-outlook-art-of-managing-innovation-risk

Amabile, T. (1988). A model of creativity and innovation in organizations. *Research in Organizational Behavior*, *10*(1), 123–167.

Andriopoulos, C., & Lewis, M. W. (2009). Exploitation-exploration tensions and organizational ambidexterity: Managing paradoxes of innovation. *Organization Science*, *20*(4), 696–717. http://doi.org/10.1287/orsc.1080.0406

Becker-Blease, J. R. (2011). Governance and innovation. *Journal of Corporate Finance*, *17*(4), 947–958. http://doi.org/10.1016/j.jcorpfin.2011.04.003

Bedford, D. S. (2015). Management control systems across different modes of innovation: Implications for firm performance. *Management Accounting Research*, *28*, 12–30. http://doi.org/10.1016/j.mar.2015.04.003

Berglund, H. (2007). Risk conception and risk management in corporate innovation: Lessons from two swedish cases. *International Journal of Innovation Management*, *11*(4), 497–513. http://doi.org/10.1142/S1363919607001849

Beswick, C., & Urban, B. (2012). Discovery Ltd: entrepreneurship in its DNA. *Emerald Emerging Markets Case Studies*, *2*(1), 1–27. http://doi.org/10.1108/20450621211214487

Biais, B., Rochet, J.-C., & Woolley, P. (2015). Dynamics of innovation and risk. *Review of Financial Studies*, *28*(5), 1353–1380. http://doi.org/10.1093/rfs/hhv003

Birkinshaw, J. (2016). How do firms adapt to discontinuous change? Bridging the dynamic capabilities and ambidexterity perspectives. *California Management Review*, *58*(4), 36–58.

Bisbe, J., & Malagueño, R. (2009). The Choice of Interactive Control Systems under Different Innovation Management Modes. *European Accounting Review*, *18*(2),

371–405. http://doi.org/10.1080/09638180902863803

Bisbe, J., & Malagueño, R. (2015). How control systems influence product innovation processes: Examining the role of entrepreneurial orientation. *Accounting and Business Research*, *45*(3), 356–386.

Bloomberg, L. D., & Volpe, M. (2012). *Completing your qualitative dissertation: A roadmap from beginning to end* (2nd ed.). Sage Publications.

Blumberg, B., Cooper, D. R., & Schindler, P. S. (2008). *Business research methods* (10th ed.). London: McGraw-Hill Education.

Bowers, J., & Khorakian, A. (2014). Integrating risk management in the innovation project. *European Journal of Innovation Management*, *17*(1), 25–40. http://doi.org/10.1108/EJIM-01-2013-0010

Carroll, A. B., & Buchholtz, A. K. (2012). The stakeholder approach to business, society and ethics. In *Business and society: Ethics and stakeholder management* (8th ed., pp. 62–87). Australia: Cengage Learning.

Chang, W., & Taylor, S. A. (2016). The effectiveness of customer participation in new product development: A meta-analysis. *Journal of Marketing*, *80*(1), 47–64. http://doi.org/10.1509/jm.14.0057

Cooper, R. G. (2009). How companies are reinventing their idea-to-launch methodologies. *Research Technology Management*, *52*(2), 47–57.

Costa Souza, J., & Bruno-Faria, M. de F. (2013). The innovation process in the organizational context: An analysis of helping and hindering factors. *Brazilian Business Review*, *10*(3), 108–129. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=91678530&site=ehost-live

Creswell, J. W., & Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory into Practice*, *39*(3), 124–130. http://doi.org/10.1207/s15430421tip3903_2

Dai, L., Maksimov, V., Gilbert, B. A., & Fernhaber, S. A. (2014). Entrepreneurial orientation and international scope: The differential roles of innovativeness, proactiveness, and risk-taking. *Journal of Business Venturing*, *29*(4), 511–524. http://doi.org/10.1016/j.jbusvent.2013.07.004

Davila, A., Foster, G., & Oyon, D. (2009). Accounting and control, entrepreneurship and innovation: Venturing into new research opportunities. *European Accounting Review*, *18*(2), 281–311. http://doi.org/10.1080/09638180902731455

De Falco, S. E., & Renzi, A. (2015). The role of sunk cost and slack resources in innovation: A conceptual reading in an entrepreneurial perspective. *Entrepreneurship Research Journal*, *5*(3), 167–179. http://doi.org/10.1515/erj-2015-0019

Deloitte. (2016). *10 questions you should be asking*. United Kingdom: Deloitte Development LLC. Retrieved from https://www2.deloitte.com/us/en/pages/risk/articles/ten-questions-you-should-be-asking.html

Denning, P. J., & Dew, N. (2015). Why our theories of innovation fail us. *Communications of the ACM*, *58*(12), 24–26. http://doi.org/10.1145/2835854

Denscombe, M. (2008). *The good research guide for small-scale social research projects* (3rd ed.). Berkshire, England: McGraw-Hill Education.

Deschamps, J. P., & Nelson, B. (2014). *Innovation governance: How top management organizes and mobilizes for innovation* (1st ed.). San Francisco: Jossey-Bass.

Dong, J., & Gou, Y. (2010). Corporate governance structure, managerial discretion, and the R&D investment in China. *International Review of Economics & Finance*, *19*(2), 180–188. http://doi.org/10.1016/j.iref.2009.10.001

Driessen, P. H., & Hillebrand, B. (2013). Integrating multiple stakeholder issues in new product development: An exploration. *Journal of Product Innovation Management*, *30*(2), 364–379. http://doi.org/10.1111/j.1540-5885.2012.01004.x

Du Toit, G. S., Eramus, B. J., & Strydom, J. W. (2009). Definition of a small business. In *Introduction to business management* (7th ed., p. 49). Cape Town: Oxford University Press.

Edmondson, A. C., & Mcmanus, S. E. (2007). Methodological fit in management field research. *Academy of Management Review*, *32*(4), 1155–1179. http://doi.org/10.5465/AMR.2007.26586086

Flemig, S., Osborne, S., & Kinder, T. (2016). Risky business—reconceptualizing risk and innovation in public services. *Public Money & Management*, *36*(6), 425–432. http://doi.org/10.1080/09540962.2016.1206751

Flick, U. (2014). Transcription as a crucial step of data analysis. In *The SAGE handbook of qualitative data analysis* (pp. 64–78). London: Sage Publications. http://doi.org/10.4135/9781446282243

Florén, H., & Frishammar, J. (2012). From preliminary ideas to corroborated product definitions: Managing the front end of new product development. *California*

Management Review, *54*(4), 20–43. http://doi.org/10.1525/cmr.2012.54.4.20

Gore, A. (2015). How Discovery keeps innovating. Retrieved May 5, 2016, from http://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/how-discovery-keeps-innovating

Hansen, M. T., & Birkinshaw, J. (2007). The innovation value chain. *Harvard Business Review*, *85*(6), 121–131.

Harrison, J. S., & Wicks, A. C. (2013). Stakeholder theory, value, and firm performance. *Business Ethics Quarterly*, *23*(1), 97–124. http://doi.org/10.5840/beq20132314

Haustein, E., Luther, R., & Schuster, P. (2014). Management control systems in innovation companies: A literature based framework. *Journal of Management Control*, *24*(4), 343–382. http://doi.org/10.1007/s00187-014-0187-5

Heindenreich, S., & Spieth, P. (2013). Why innovations fail — The case of passive and active innovation resistance. *International Journal of Innovation Management*, *17*(5), 1–42. http://doi.org/10.1142/S1363919613500217

Hill, C. W. L., & Jones, T. M. (1992). Stakeholder-agency theory. *Journal of Management Studies*. http://doi.org/10.1111/j.1467-6486.1992.tb00657.x

Holmstrom, B. (1989). Agency costs and innovation. *Journal of Economic Behavior and Organization*, *12*(3), 305–327. http://doi.org/10.1016/0167-2681(89)90025-5

Hoskisson, R. E., Hitt, M. A., Johnson, R. A., & Grossman, W. (2001). Conflicting voices: The effects of institutional ownership heterogeneity and internal governance on corporate innovation strategies. *Academy of Management Journal*, *45*(4), 697–716. http://doi.org/10.2307/3069305

IRMSA. (2015). *IRMSA risk report: South Africa risks 2015*. Johannesburg. Retrieved from https://c.ymcdn.com/sites/irmsa.site-ym.com/resource/resmgr/2015_Risk_Report/Low_Res_IRMSA_South_Africa_R.pdf

Jacobs, S. R., Weiner, B. J., Reeve, B. B., Hofmann, D. A., Christian, M., & Weinberger, M. (2015). Determining the predictors of innovation implementation in healthcare: a quantitative analysis of implementation effectiveness. *BMC Health Services Research*, *15*(1), 6. http://doi.org/10.1186/s12913-014-0657-3

Kahn, T. (2016). SA not investing enough in innovation. Retrieved April 28, 2016, from http://www.bdlive.co.za/national/2016/04/20/sa-not-investing-enough-in-innovation

Klingebiel, R., & Rammer, C. (2014). Resource allocation strategy for innovation portfolio management. *Strategic Management Journal*, *35*(2), 246–268. http://doi.org/10.1002/smj

Lam, J. (2003). *Enterprise risk management: From incentives to controls* (1st ed.). New Jersey: Wiley.

Leiponen, A. (2005). Skills and innovation. *International Journal of Industrial Organization*, *23*(5–6), 303–323. http://doi.org/10.1016/j.ijindorg.2005.03.005

Manzini, S. T. (2012). Creating and sustaining an innovation culture in South Africa: A systems perspective. *Management Today*, *30*(8), 76–78.

McCracken, G. (1988). *The long interview*. California: Sage Publications.

Merriman, K. K., & Nam, D. (2015). A managerial perspective on risk and return for corporate innovation projects. *Organization Management Journal*, *12*, 200–207. http://doi.org/10.1080/15416518.2015.1081553

Merton, R. C. (2013). Innovation risk: How to make smarter decisions. *Harvard Business Review*, *91*(4), 48–56.

Miozzo, M., & Dewick, P. (2002). Building competitive advantage: innovation and corporate governance in European construction. *Research Policy*, *31*(6), 989–1008. http://doi.org/10.1016/S0048-7333(01)00173-1

Mohnen, P., & Roller, L. H. (2005). Complementarities in innovation policy. *European Economic Review*, *49*(6), 1431–1450. http://doi.org/10.1016/j.euroecorev.2003.12.003

Nagano, M. S., Stefanovitz, J. P., & Vick, T. E. (2014). Innovation management processes, their internal organizational elements and contextual factors: An investigation in Brazil. *Journal of Engineering and Technology Management*, *33*, 63–92. http://doi.org/10.1016/j.jengtecman.2014.02.004

O'Connor, G. C., & Ayers, A. D. (2005). Building a radical innovation competency. *Research Technology Management*, *48*(1), 23–31.

O'Sullivan, M. (2000). The innovative enterprise and corporate governance. *Cambridge Journal of Economics*, *24*(4), 393–416. http://doi.org/10.1093/cje/24.4.393

Osborne, S. P., & Flemig, S.-S. (2015). Conceptualizing risk and social innovation: An integrated framework for risk governance. *Society and Economy*, *37*(2), 165–182. http://doi.org/10.1556/204.2015.37.2.2

Ouakouak, M. L., Ouedraogo, N., & Mbengue, A. (2014). The mediating role of

organizational capabilities in the relationship between middle managers' involvement and firm performance: A European study. *European Management Journal*, *32*(2), 305–318. http://doi.org/10.1016/j.emj.2013.03.002

Perez-Freije, J., & Enkel, E. (2007). Creative tension in the innovation process: How to support the right capabilities. *European Management Journal*, *25*(1), 11–24. http://doi.org/10.1016/j.emj.2006.11.005

Pitelis, C. N., & Teece, D. J. (2015). *Dynamic capabilities, the multinational corporation, and (capturing co-created value from) innovation*. Retrieved from http://ssrn.com/abstract=2706426

Poutanen, P., Soliman, W., & Ståhle, P. (2016). The complexity of innovation: An assessment and review of the complexity perspective. *European Journal of Innovation Management*, *19*(2), 189–213. http://doi.org/10.1108/EJIM-03-2014-0036

Prahalad, C. K., & Oosterveld, J. P. (1999). Transforming internal governance: The challenge for multinationals. *Sloan Management Review*, *40*(3), 31–39.

Raisch, S., Birkinshaw, J., Probst, G., & Tushman, M. L. (2009). Organizational Ambidexterity: Balancing Exploitation and Exploration for Sustained Performance. *Organization Science*, *20*(4), 685–695. http://doi.org/10.1287/orsc.1090.0428

Robeson, D., & O'Connor, G. (2007). The governance of innovation centers in large established companies. *Journal of Engineering and Technology Management*, *24*(1–2), 121–147. http://doi.org/10.1016/j.jengtecman.2007.01.007

Ruefli, T. W., Collins, J. M., & Lacugna, J. R. (1999). Risk measures in strategic management research: Auld lang syne? *Strategic Management Journal*, *20*(2), 167–194.

Salerno, M. S., Gomes, L. A. D. V., Da Silva, D. O., Bagno, R. B., & Freitas, S. L. T. U. (2015). Innovation processes: Which process for which project? *Technovation*, *35*, 59–70. http://doi.org/10.1016/j.technovation.2014.07.012

Sapra, H., Subramanian, A., & Subramanian, K. V. (2014). Corporate governance and innovation: Theory and evidence. *Journal of Financial and Quantitative Analysis*, *49*(4), 957–1003. http://doi.org/10.1017/S002210901400060X

Saunders, M., & Lewis, P. (2012). *Doing research in business & management: An essential guide to planning your project* (1st ed.). Edinburgh Gate: Financial Times Prentice Halll.

Shapiro, D., Tang, Y., Wang, M., & Zhang, W. (2015). The effects of corporate

governance and ownership on the innovation performance of Chinese SMEs. *Journal of Chinese Economic and Business Studies*, *13*(4), 311–335.

Silverman, D. (2011). *Qualitative research* (3rd ed.). London: Sage Publications.

Sweeting, P. (2011). *Financial enterprise risk management* (1st ed.). New York: Cambridge University Press.

Takeuchi, H., & Nonaka, I. (1986). The new new product development game. *Harvard Business Review*, *64*(1), 137–147.

Teece, D., Peteraf, M., & Leih, S. (2016). Dynamic capabilities and organizational agility: Risk, uncertainty, and strategy in the innovation economy, *58*(4), 13–36. http://doi.org/10.1525/cmr.2016.58.4.13

The Economist Intelligence Unit. (2014). *Risk-informed Innovation: Harnessing risk management in the service of innovation*. London, United Kingdom: The Economist Intelligence Unit Limited. Retrieved from http://www.gbm.hsbc.com/~/media/gbm/reports/insights/risk-informed-innovation.pdf

Tidd, J., & Bessant, J. (2009). *Managing innovation: Integrating technological, market and organizational change* (4th ed.). West Sussex, England: John Wiley & Sons.

Tucker, M. L., Powell, K. S., & Dale Meyer, G. (1995). Qualitative research in business communication: A review and analysis. *The Journal of Business Communication*, *32*(4), 383. http://doi.org/10.1177/002194369503200405

Urhahn, C., & Spieth, P. (2014). Governing the portfolio management process for product innovation — A quantitative analysis on the relationship between portfolio management governance, portfolio innovativeness, and firm performance. *IEEE Transactions on Engineering Management*, *61*(3), 522–533. http://doi.org/10.1109/TEM.2014.2327254

Valsamakis, A. C., Vivian, R. W., & du Toit, G. S. (2010). *Risk management* (4th ed.). Cape Town: Heinemann Publishers (Pty) Ltd.

Vargas-Hernández, J. G. (2011). Modeling risk and innovation management. *Advances in Competitiveness Research*, *19*(3/4), 45–57. Retrieved from http://eserv.uum.edu.my/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=66189923&site=ehost-live&scope=site

Woolcock, M., & Narayan, D. (2000). Social capital: Implications for development theory, research, and policy. *World Bank Research Observer*, *15*(2), 225–249. http://doi.org/10.1093/wbro/15.2.225

Wu, H. L. (2008). When does internal governance make firms innovative? *Journal of Business Research*, *61*(2), 141–153. http://doi.org/10.1016/j.jbusres.2007.06.010

Xu, E., Yang, H., Quan, J. M., & Lu, Y. (2015). Organizational slack and corporate social performance: Empirical evidence from China's public firms. *Asia Pacific Journal of Management*, *32*(1), 181–198. http://doi.org/10.1007/s10490-014-9401-0

Yi, Y., Liu, Y., He, H., & Li, Y. (2012). Environment, governance, controls, and radical innovation during institutional transitions. *Asia Pacific Journal of Management*, *29*(3), 689–708. http://doi.org/10.1007/s10490-010-9231-7

Appendices

Appendix 1: Ethical clearance

Dear Premal Bhima

Protocol Number: **Temp2016-01003**

Title: **Exploring the interplay between corporate innovation, risk management and internal governance**

Please be advised that your application for Ethical Clearance has been APPROVED.

You are therefore allowed to continue collecting your data.

We wish you everything of the best for the rest of the project.

Kind Regards,

Adele Bekker

Appendix 2: Initial interview guide

Background questions

- Briefly describe what the organisation does.
- Briefly describe the chosen industry your organisation operates in.
- Describe your role in the organisation.
- Describe your involvement or understanding of corporate innovation within the organisation.
- Describe your involvement or understanding or risk management and internal governance for the innovation process.

Interview question 1: How is the innovation process in organisations influenced in relation to their internal governance and risk processes and organisational contexts?

- Briefly describe the innovation process in your organisation?
- Briefly describe the governance and risk management process in your organisation?
- Briefly describe the major impediments or challenges within the context of your organisation that prevents innovation?
- Describe how the diffusion of new processes and practices across different functions affect the organisation's innovation and capabilities?
- What level of innovativeness do you believe your organisation has?

Contextual factors:

- Describe the type of management and ownership structure/s in your organisation?
- Does this support innovative processes and practices?
- Describe to what extent does management structure and ownership influence the innovation process in relation to its governance and risk processes?
- Describe to what extent does the organisational structure influence the innovation process in relation to its governance and risk processes?
- Describe the culture towards innovation in the organisation?
    - Is the process viewed as bureaucratic and risk-averse?
    - Does it constrain the implementation of innovative activities?
    - Is innovation regarded as a learning process within the organisation?
    - Is there resistance to change within your organisation?

- How do resources contribute to the success of innovative efforts?
    - Is there any organisational slack in your company?
    - Would you describe human capital as an enabling factor in your organisation's innovation activities?

Interview question 2: How can the management of innovation uncertainty by utilising risk management (i.e. control systems and effective decision-making) be conducive to innovation efforts?

- What is your view of the risk management processes and internal governance to innovation?
- Briefly describe the management and risk control systems in your organisation in respect of its innovation process?
    - Is it formal or informal?
    - Is there direct involvement in senior management to shape innovation?
    - Are there limits and controls that managers need to adhere to?
- To what extent is internal governance viewed by the organisation as a wealth-creation process in pursuit of innovation and growth?
- Do the control systems within your organisation assist and encourage innovation?
- To what extent is risk management embedded within your innovation efforts?
- How is excessive perceived risk of its innovation activities handled within the organisation's governance and risk management?
    - What perceived level of risk do you believe your organisation has?
    - Is your business inclined towards low or high risk initiatives?

Interview question 3: How does the integration of stakeholder management in the innovation process impede an organisation's decision-making and evaluation ability in relation to less stringent governance controls?

- Does your organisation consider the implications on different stakeholders in its innovation efforts?
- Is there a "trust-based" approach to the management of an organisation's innovation efforts?
    - How does this align to the control measures and evaluation criteria?
    - What level of autonomy do you believe your organisation provides?
- Describe the collaborative relationships within your organisation in respect of its innovation activities?

- Describe how relationships and collaborations for internal and external sources of knowledge contribute to an organisation's innovation efforts?
- Do your decision-making bodies have diverse representation of different views for its innovation activities?
- How does your organisation make decisions?

Closing

Any concluding comments or additional insights from the participant?

Thank you for participation in the interview.

Appendix 3: Refined Interview guide

Background questions

- Briefly describe what the organisation does and the chosen industry it operates in.
- ~~Briefly describe the chosen industry your organisation operates in.~~
- Briefly describe your role and responsibilities in the organisation.
- Briefly describe your involvement or understanding of corporate innovation within the organisation.
- Briefly describe your involvement or understanding or risk management and internal governance for the innovation process.

Interview question 1: How is the innovation process in organisations influenced in relation to their internal governance/risk processes and contextual attributes?

- What level of innovativeness do you believe your organisation has?
- Briefly describe the innovation process in your organisation?
    - How does your organisation promote and implement innovation?
- Briefly describe the governance and risk management process in your organisation?
- Briefly describe the major impediments or challenges within the context of your organisation that prevents innovation?
- Describe how ~~the diffusion of~~ new processes and practices are filtered across different functions affect the organisation's innovation and capabilities?
- ~~What level of innovativeness do you believe your organisation has?~~

Contextual attributes ~~factors~~:

- Describe the type of management and ownership structure/s in your organisation?
    - Does this support innovative processes and practices?
- ~~Describe to what extent does management structure and ownership influence the innovation process in relation to its governance and risk processes?~~
- Describe what management structures are there to mitigate any risks that arise from innovation in terms of internal governance and risk management?
- Describe to what extent does the organisational structure influence the innovation process in relation to its governance and risk processes?
- Describe the culture towards innovation in the organisation?

  - Is the process viewed as bureaucratic ~~and~~ or risk-averse?
  - Does it constrain the implementation of innovation ~~innovative~~ activities?
  - Is innovation regarded as a learning process within the organisation?
  - How does the organisation deal with failure?
  - Is there resistance to change within your organisation?
- How do resources contribute to the success of innovative efforts?
  - Is there any spare capacity ~~organisational slack~~ in your company?
  - Would you describe human capital as an enabling factor in your organisation's innovation activities?

Interview question 2: How can the management of innovation uncertainty by utilising risk management (i.e. control systems and effective decision-making) be conducive to innovation efforts?

- What is your view of the risk management processes and internal governance to innovation?
- Briefly describe the management and risk control systems in your organisation in respect of its innovation process?
  - Is it formal or informal?
  - Is there direct involvement of ~~in~~ senior management to shape innovation?
  - Are there limits and controls that managers need to adhere to?
- To what extent is internal governance viewed by the organisation as a wealth-creation process in pursuit of innovation and growth?
- Do the control systems within your organisation assist and encourage innovation?
- To what extent is risk management embedded within your innovation efforts?
- How is excessive perceived risk of its innovation activities handled within the organisation's governance and risk management?
  - What perceived level of risk do you believe your organisation has?
  - Is your business inclined towards low or high risk initiatives?

Interview question 3: How does the integration of stakeholder management in the innovation process impede an organisation's decision-making and evaluation ability in relation to less stringent governance controls?

- Does your organisation consider the implications on different stakeholders (both internal and external) in its innovation efforts?

- Is there a “trust-based” approach to the management of an organisation’s innovation efforts?
    - How does this align to the control measures and evaluation criteria?
    - How does your organisation evaluate innovation?
    - What level of autonomy do you believe your organisation provides?
- Describe the collaborative relationships within your organisation in respect of its innovation activities?
- Describe how relationships and collaborations for internal and external sources of knowledge contribute to an organisation’s innovation efforts?
- Do your decision-making bodies have diverse representation of different views for its innovation activities?
- How does your organisation make decisions?

Closing

Any concluding comments or additional insights from the participant?

Thank you for participation in the interview.

Appendix 4: Final code book

accessibility	internal	B1.1
accountability	internal governance	B1.2
action-orientated	kill quickly	B2
adapt	learning process	B3
approval	learning process: limit downside risk	Q1.1
attitude	learning process: training	Q1.2
benchmark	learning process: yes	Q1.2.1
board	legal	Q1.3
bureaucratic	level: autonomy	Q1.4
business case	level: innovativeness	Q1.5
challenge: agility	level: perceived risk	Q1.6.1
change process	licensing	Q1.6.1.1
collaboration	limit downside risk	Q1.6.2
collaboration: external	limits controls	Q1.6.3
collaboration: internal	limits controls: DOA	Q1.6.4
committees	limits controls: track cashflows	Q1.6.4.1
communication	MANCO	Q1.6.4.2
culture	market innovation	Q1.6.4.3
culture: constrain	no formal department	Q1.6.4.4
culture: fear of failure	no formal governance	Q1.6.4.5
culture: learning process	no formal implementation	Q1.6.5
culture: resistance	no formal innovation process	Q1.6.5.1
customer focus	operational	Q1.6.5.2
debate	organic innovation	Q2.1
decision-making	organisation	Q2.2
decision-making: belief	peer review	Q2.2.1
decision-making: data	perception	Q2.2.2
decision-making: founder	performance metrics	Q2.2.3
decision-making: mixed	perseverance	Q2.3
disruption	positivity	Q2.4
diversity	prioritisation	Q2.5
diversity: founder	prioritisation committees	Q2.6
diversity: funding	process innovation	Q2.6.1
diversity: ideation	product innovation	Q2.6.2
documentation	promote innovation	Q3.1
effectiveness	promote innovation: champions	Q3.2
efficiency	promote innovation: competitions	Q3.2.1
embedding risk management	promote innovation: hackathon	Q3.2.2
empowerment	promote innovation: partner programmes	Q3.2.3
entrepreneurial	protect existing	Q3.3
evaluation	quotable quote	Q3.4
evaluation: EBITDA	regulation	Q3.5
evaluation: ROCE	reporting lines	Q3.6
excessive perceived risk	reputation	
EXCO	research	
external	resilience	
external internal	resistance	
feedback	resources	
fit for purpose	risk appetite	
flat	risk averse	
flexible	risk initiatives: low high	
governance	risk management	
governance: feasibility	risk system: assessment	
governance: ideation	risk system: communication	
governance: implementation	risk system: impact assessment	
governance: partnerships	risk system: procedures	

growth health and safety hierarchical human capital ideation impediment: bureaucracy impediment: capital impediment: complexity impediment: culture impediment: decision making impediment: delivery stress impediment: internal governance impediment: internal politics impediment: priorisation impediment: process impediment: regulation impediment: resources impediment: technical impediment: time implementation implementation: pilot information gathering innovation process innovation process: prototype innovation process: stage-gate innovation: partnerships innovation: technology intellectual property	risk system: reporting risk-taking role scalability separate innovation unit shape innovation silo size spare capacity stakeholders stakeholders: external stakeholders: internal startups structure: management structure: organisation success rate support from top sustainability system: formal informal trade-off trust-based upside risk view of governance view of innovation view of risk view of risk management wealth creation	

Appendix 5: Ethical consent form

Consent Form

I am conducting research on the interplay between corporate innovation, risk management and internal governance. I am trying to find out more about factors that influence the relationship between innovation, risk management and governance as well as the challenges faced. Our interview is expected to last about an hour, and will help us understand the effectiveness of organisations when undertaking innovation activities by using adequate risk management and governance controls. Your participation is voluntary and you can withdraw at any time without penalty. Of course, all data will be kept confidential.

If you have any concerns, please contact my supervisor or me. Our details are provided below.

Researcher name: Premal Bhima
Email: 15388698@mygibs.co.za
Phone: 080 000 0000

Supervisor: Manoj Chiba
Email: chibam@gibs.co.za
Phone: 011 771 4000

Signature of participant: _____

Date: _____

Signature of researcher: _____

Date: _____

Appendix 6: Detailed results tables

Table 23: List of codes containing the word innovation

Codes
innovation process
innovation process: prototype
innovation process: stage-gate
innovation: partnerships
innovation: technology
level: innovativeness
market innovation
no formal innovation process
organic innovation
process innovation
product innovation
promote innovation
promote innovation: champions
promote innovation: competitions
promote innovation: hackathon
promote innovation: partner programmes
separate innovation unit
shape innovation
view of innovation

Table 24: List of codes containing the word risk

Codes
embedding risk management
excessive perceived risk
learning process: limit downside risk
level: perceived risk
limit downside risk
risk appetite
risk averse
risk initiatives: low high
risk management
risk system: assessment
risk system: communication
risk system: impact assessment
risk system: procedures
risk system: reporting
risk-taking
upside risk

Codes
view of risk
view of risk management

Table 25: List of codes containing the word organisation

Codes
organisation
structure: organisation

Table 26: Perceived level of innovation of the organisation

Respondent	Innovation level
Respondent 1	High
Respondent 2	High
Respondent 3	High
Respondent 4	Medium
Respondent 5	Low
Respondent 6	High
Respondent 7	High
Respondent 8	High
Respondent 9	High
Respondent 10	Medium
Respondent 11	Medium
Respondent 12	Medium
Respondent 13	High
Respondent 14	Medium

Table 27: Respondents' comments on the ideation phase

Respondent	Evidence for the ideation phase
Respondent 1	"Ideas that the innovation team comes up with to ideas that the business comes up with has a **20/80 rule**, so **80% of all the ideas** that come to the innovation team to follow up on and develop, **come from the business itself**, so **only 20% will only come from the innovation team**, and we have found that that is **critical to the participation and support of the business**."
Respondent 2	"Okay, so the **level of ideas**… is **not really an issue at the ideation stage, because you are still thinking** and these are all theoretical constraints, so what we do is…they **do not want to restrict ideas by creating barriers**." [***emphasis added***]
Respondent 3	"Somebody would have an idea if they think it is a **good idea and they want to test it, and they want to enact it, then they will go do that**." [***emphasis added***]
Respondent 8	"There's a **lot of market research**… but you don't disrupt necessarily by market research there's obviously a sort of continued innovation to keep your product relevant and keep it ahead of the curb... that's more small innovations, the disruptive innovations really come from **blue sky brainstorming sessions, getting a lot of different skill sets into one room** to come up with an answer to a problem." [***emphasis added***]

Respondent 10	"We have a whole governance process around it called the 'option to realisation standards', and the first stage is you would draft the strategic proposal to circulate in your organisation, which would **explain the idea that you have, and what you would like to do** next basically, and then that is **circulated to your leaders** who say 'Yes, I like your idea'." [***emphasis added***]
Respondent 11	"So starting at a low fidelity **prototype finding ways of testing with customers** if we've come up with a solution through an ideation phase, **ideation is built into that step**, if we've come up with a solution is this the right way to solve that problem, because just because we think it's a great way doesn't mean the customer thinks it's a great way. Once we've **validated with customers** that this is a good way to solve that problem that they have." [***emphasis added***]
Respondent 13	"What I do know is that the organisation does a lot of **brain workshops around white-boarding and constructive criticism** around what products, how products are going to work, et cetera, et cetera." [***emphasis added***]
Respondent 14	"We actually **start off with the consumer, so understanding the consumer at the nth level of degree detail**…After we have done that, we **go back to the consumers** and say you know what you have told us and what we have designed to meet those needs, that's one check point we have right now, it has **actually saved us a lot of money** because we have **killed a few ideas at that stage that would not have worked**." [***emphasis added***]

Table 28: Summary of respondents' comments on management structures

Respondent	Management structures described in interview
Respondent 1	– Two management teams where one manages internal innovation and the other manages external innovation. – This could be seen as project managers and are thus "gatekeepers of the governance process". – There is no conflict in roles, since the management teams are not the ones who come up with the innovative ideas.
Respondent 2	– Internal audit functions, legal, HR and other formalised business processes are involved in the process. – Review and oversight functions are relied upon for proper signoffs. – The organisation has a Group EXCO, a Prioritisation Committee, quarterly reviews, etc.
Respondent 3	– The board (including non-executive shareholders) is more focussed on strategy. Information updates are provided on new innovation activities. – The EXCO would discuss certain directions. Below this committee is the MANCO, which would effect most of the changes. – The accessibility was cited as an advantage that allowed for quick decision-making.
Respondent 4	– The board is duly informed of the process through a board brief. – The final proposal is referred to the Capital Expenditure (CAPEX) committee. This details the capital required, risks and mitigation factors. – From an informal perspective, there would be separate sessions held with the Technical Director prior to formal approval process. This would then get discussed between the Operations Manager, Marketing Director, Managing Director and finance team. – The project manager would champion the project.

Respondent	Management structures described in interview
Respondent 5	– There are two escalation steering committees for approval. – Generally, the decision is made by the most senior person in the room but this was cited as demotivating if the team is not empowered to make decisions by asking for permission too regularly. – Several formal group governance structures also exist such as Group Balance Sheet, Group Risk, Group Product Approval, etc.
Respondent 6	– Innovation and broader thinking should be encouraged and supported by nurturing it. – Emergency plans and procedures should be thought through in advance.
Respondent 7	– There are forums and committees such as Risk, Compliance, Governance and Prioritisation functions. – People are tasked with accountabilities and priorities in the business through various MANCOs. – New products would be required to go up to board level approval. – Ideas would get presented to a New Initiatives Forum with diverse internal stakeholder representation (e.g. Legal, Compliance, Operational Risk, Market Risk, Shared Services, etc). – Innovation is not constrained within the forums, but rather it is managed through a robust process. – The committees allowed for proper representation and socialisation so that decisions are not made by a single person.
Respondent 8	– Innovation is a standard fixture in every board meeting that takes place on a quarterly basis. This is set up to support innovation. – Each launch will be presented to the board for feedback. – Risk management is embedded after the initial ideation phase and would go through several different committees (e.g. Treating Customers Fairly Committee, Actuarial Committee, Valuations Committee for peer review, etc.). – The product specification would identify risks, discuss the mitigation factors to “facilitate risk management and governance in a responsible way”.
Respondent 9	– There are many structures. A steering committee is usually developed to ensure that the process is moved forward by the right people. – The project team is responsible for the risks and take ownership. – This is recommended to the decision-makers depending on the materiality and financial value. For example, it may require CEO approval if the materiality of the deal is significant.
Respondent 10	– There is not one particular owner or management structure around innovation in the organisation. – A steering committee is established that is compliant to the level of expertise in the organisation. – This provides “governance around the organisation taking the right opportunities” and “definitely helps finesse an opportunity”.
Respondent 11	– The organisation is trying to democratise innovation by moving away from management generally. – Depending on the capital requirement, one may pitch the idea to a business owner if the amount is relatively small.
Respondent 12	– There are enough governing bodies, including the business unit Risk and Control Committee, and get escalated to the Group Risk Operation Committee.
Respondent 13	– Product development is a centralised function. – Marketing and Operations group is responsible for these functions, including research and development, branding and operationalising in subsidiaries.

Respondent	Management structures described in interview
Respondent 14	– Ownership for innovation is not assigned – it is "the way you do business… regardless of function". There are, however, key champions that would drive innovation and try to unlock ideas. – "Structure in innovation is an oxymoron… as soon as you outsource or put structure to innovation, or say somebody's job is innovation, then you telling the rest of your company that your job is not innovation". – The Group Governance and Risk Management would look at the risks being taken and may push the business to take on more risk at times.

Table 29: Summary of respondents' comments on organisational structures

Respondent	Organisational structures described in interview
Respondent 1	– No response was provided.
Respondent 2	– Organisational structure is designed to run and operate legacy business. – This creates a delay and lack of urgency with creating the new. – To fix this, the organisation is looking at setting up one of its departments outside the main organisation as a separate unit.
Respondent 3	– Hierarchical but differs from department to department. For example, the implementation side is quite hierarchical.
Respondent 4	– The organisation is split into relevant departments that would need to be included in the process (e.g. development laboratory, process engineering, instrumentation control bases, operations).
Respondent 5	– The organisational structure is described as flat. – Despite this, the organisation may look to set up its innovation unit as a separate unit because it is felt that the culture would not change if it is set up within the business.
Respondent 6	– The organisation is structured hierarchically. However, it was noted that cross reference to other departments should occur, similar to that in a matrix structure. – This is important to avoid silos forming in order for people to look sideways and not only vertically.
Respondent 7	– The organisation would be described as flat without having a lot of hierarchy. There are clear lines of reporting and accountability. – The entrepreneurial culture encourages partnerships in terms of working together as a community within constraints.
Respondent 8	– The organisation is focussed and quite hierarchical. – There may be dotted reporting lines for some functions within the organisation to encourage close interactions. – The organisation facilitates innovation and therefore it is at the centre of the organisational structure with dotted reporting lines feeding into this.
Respondent 9	– The organisation is very hierarchical with clear reporting lines. – An enabling process is quick decision-making.
Respondent 10	– There is quite clear hierarchy in the organisation that provides good governance once an idea has been conceived. – A disadvantage was people may not be equipped with all the information required at different levels of the organisation.
Respondent 11	– The organisation is very hierarchical and was described as "follow the line". – However, it is in flux where roles and responsibilities should be structured based on: (1) adding value to customers and (2) becoming innovative.

Respondent	Organisational structures described in interview
Respondent 12	– The differing structures were contrasted between the innovation function and the traditional organisation.
Respondent 13	– The organisation operates under a matrix structure. – Innovation is not necessarily directly attributed to the structure but it is collaborative to create better ideas and solve problems together.
Respondent 14	– The organisation is structured into Group-wide functions and split according to these business units. – The cultures within these different functions are described as different.