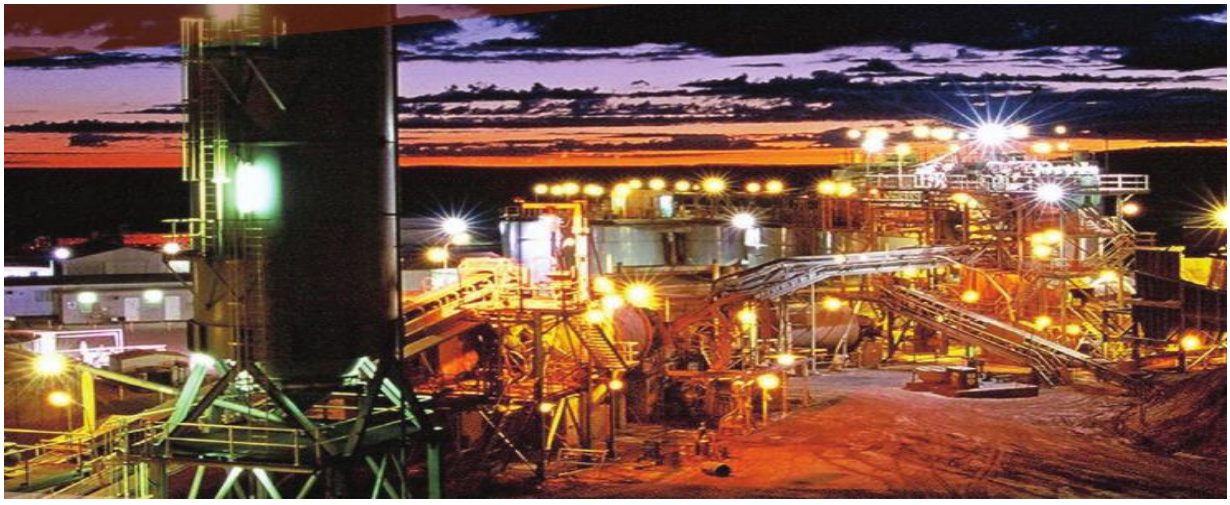
Midlands State University

Established 2000

Faculty of Commerce

Department of Accounting

Evaluating risk management practices on performance of corporates: A case of listed mining entities in Zimbabwe.



A research project submitted in partial fulfillment for the award of the Master of Commerce in Accounting Degree, at the Midlands State University, Gweru, Zimbabwe.

May 2017

By

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Declaration

I, Simukai Gladstone Tyoka, do hereby declare that this dissertation is a product of my own investigation and research.

The project is not the result of anything done in collaboration and has not been submitted in part or in full for any other degree to any other University or College; except to the extent indicated in the acknowledgements and references included in the body of the report.

I agree that this dissertation may be available for reference and photocopying at the discretion of the Midlands States University.

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The undersigned certify that they have read and recommend to the Midlands State University for acceptance, a dissertation entitled; "**Evaluating risk management practices on performance of corporates: A case of listed mining entities in Zimbabwe"** submitted by Simukai Gladstone Tyoka in partial fulfilment of the requirements for the Master of Commerce in Accounting (M. Com Accounting) Degree.

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Title of Project: **Evaluating risk management practices on performance of corporates: A case of listed mining entities in Zimbabwe**

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Foreword

During the time I was studying for the completion of this Master of Commerce in Accounting Degree, I remembered the following words:

"…and, when you want something, the universe conspires in helping you achieve it..."
Paulo Coelho. The Alchemist.

"Again I saw that under the sun the race is not to the swift, nor the battle to the strong, nor bread to the wise, nor does riches to the intelligent, nor favour to the man of skill; but time and chance happen to them all."
Ecclesiastes Chapter 9 verse 11; The Holy Bible.

Dedication

To my wife and my sunshine Kumbirayi Gamuchirayi Tyoka, who inspired me to be the best I can be. I love you.

I also dedicate this project to my mom and dad, Mr and Mrs A. A. Tyoka, for constantly reminding me to remain focused and aim for the best.

Acknowledgements

Glory be to God for the gift of life and good health. His grace always gives hope for the future.

Heartfelt acclaim goes to my supervisor Mr. K. Mazhindu whose invaluable guidance, meticulous revision, advice and encouragement enabled me complete the dissertation project to be a master piece.

Lastly, special mention goes to all the people who made this dissertation project a success.

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Abstract

The research project sought to evaluate risk management practices on performance of listed mining entities in Zimbabwe for the period December 2015 to March 2017. Copious of the risk management research was focused on difficulties and not solutions and no one organization was in charge of managing these risk issues to get a comprehensive view of risk. This prompted the researcher to evaluate the risk management frameworks used by listed mining corporate entities as a way to gain insights to their competitive advantage on overall performance. The research objectives sought to identify risk management frameworks that have been applied to the mining sector, controls designed and operating on the established risk management frameworks, identify challenges experienced in implementing the risk management frameworks, and identify best practices which are being pursued in the mining sector for creating effective risk management frameworks. A mixed methodology approach was employed to provide information on the premise of objectivity by combining qualitative and quantitative methods for a broader perspective in evaluating risk management practices in the mining sector. Likert scale questionnaires, interviews, publications and management reports were used as the research instruments. A sample of 14 senior to middle level management employees was identified using purposeful judgement sampling, a non-probability sampling technique. Statistical Package for Social Sciences (SPSS) software was used to organise and analyse raw data gathered from participants. It was found that the effective application of risk management principles early lays the foundation for good relationships throughout the whole mine life cycle. The study also established that mines are generally not capable to implement a fully integrated risk management framework as there are hurdles to overcome that include Information Communication Technology (ICT) support, skills flight and raplex external factors affecting the sector as a whole. The study recommends that mining entities should establish a risk universe approach to risk management with a comprehensive view of risks that promotes an aligned analysis of risks across all parts on the business rather than stick to one methodology approach. Viewing risks from a global approach will add the value of research to literature and allow those charged with governance identify key business risks on an ongoing basis to develop an organisation specific risk universe that is benchmarked against other frameworks. Future work may be needed to examine the impact of risk assessment methodologies on cultivating firm value.

List of acronyms

CEO	Chief Executive Officer
CFO	Chief Finance Officer
CIMA	Chartered Institute of Management Accountants
COSO	Committee of Sponsoring Organisations
CRO	Chief Risk Officer
ERM	Enterprise (wide) Risk Management
EY	Ernst & Young Chartered Accountants
GRC	Governance, Risk and Compliance
IFRS	International Financial Reporting Standards
ICT	Information Communication Technology
KRIs	Key Results Indicators
MD	Managing Director
PwC	Pricewaterhousecoopers Chartered Accountants
RM	Risk Management
VUCA	Volatility, Uncertainty, Complexity and Ambiguity.

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Chapter 1

Introduction

1.0 Introduction

This chapter serves as a road map in the assessment of risk management practices on performance of listed mining entities in Zimbabwe. The chapter begins with the background of the study from which the statement of the problem is derived. The main topic, conceptual framework and sub research questions as well as the research objectives are outlined.

Significance of the study to key stakeholders such as the public, those charged with governance and the researcher; delimitations, limitations and assumptions guiding the study will follow next. This will lead to the definition of terms and a summary of the chapter.

1.1 Background of the study

Risk management models have come under inspection over the centuries and in reviewing the origins of the 2008 worldwide financial crisis, many schools of thought have pointed to risk management failures as the cause, as well as financial stability (Baker, 2009; Brown et al., 2009; Conyon et al., 2011.) Baker (2009) went on to say that the relevance of risk management on the performance of entities was crucial as risks were either revealed too late or not adequately alleviated because of identification or assessment inefficiencies.

In particular, Pirson and Turnbull (2011) explained that boards either lacked access to risk-related information to perform their oversight role properly or were unable to process the available risk-related information. Much of the risk management research is focused on problems and not solutions. In scrutiny, strong empirical evidence is not focused on risk management models that aim towards proactivity in risk management. For example, according to Shortreed et al. (2012) inadequate functioning of risk management is rather explained as inadequacy of controls versus effectiveness of functioning as they blamed risk management to be the cause of non-performance.

Other writers are similarly focused on perspective, such as considering enterprise wide risk management (ERM) effects on managing significant risks which when prevented, reduced or eliminated, assist listed mining entities remain competitive in the raplex business environment. For example, a recent study from PwC (2012) revealed that, of the 74 per cent of organizations with formal enterprise risk management (ERM) frameworks, only 45 per cent were comfortable with their management of significant risks.

Some academics recommended that the focus on risk management should rather be directed towards the monitoring and control functions, a move from assuring the effectiveness of internal controls to assuring the effectiveness of risk management processes (Shortreed et al., 2012).

Simply put, internal controls are part of risk management; they are ways to manage risks, but risk management takes a broader perspective, linking with the strategic side of business, whereas internal controls focus on the operational side of business and sometimes lack a connection with higher objectives and strategies. (Shortreed et al, 2012)

According to Horney/Pasmore/O'Shea, (2010), the main motive for a complex environment is that the globe faces volatility, uncertainty, complexity and ambiguity (VUCA) factors and not focusing on risk management, a process; alone. Horney/Pasmore/O'Shea, (2010) defined volatility as the natural surroundings and dynamics of change, and the nature and speed of change forces and change catalysts. Uncertainty points out the lack of predictability of issues and events. Complexity is the confounding of issues and the chaos that surrounds organizations. Ambiguity is the haziness of reality and the mixed meaning of conditions, cause-and-effect confusion (Horney/Pasmore/O'Shea, 2010).

It can be argued however, that classical theories to risk management versus performance seem to point towards a silo approach to managing risks. This is ‘dangerous’ in today’s rapidly changing environment because organizations can face change with greater confidence with an enterprise-wide perspective. (COSO, 2004.)

That is why an ERM approach is intended to be holistic in its perspective toward risk and how it is managed. While the goal of thinking holistically is laudable, the question arises as to what it means from a practical standpoint. This is a gap which can be explored further especially in the Zimbabwean context for listed mining entities.

The financial crisis in 2008 has made a lot of entities go back to the drawing board to document lessons learnt and rethink their approach to risk management. Despite that on paper those documents have been drawn, organizations have not changed from silo-based risk management to the overarching framework of ERM due to various reasons. Yet ERM is a young model and it has to contend with various challenges (Connair, 2013).

Kerstin (2014) suggested that there are two frameworks to support ERM, the COSO Cube ERM and the Governance, Risk and Compliance (GRC) model. The Committee of Sponsoring Organizations established the COSO Cube to support ERM (COSO, 2004).

The GRC model is another framework and it is a paradigm to help an entity to grow in the best possible way (Moeller, 2011). However, the challenges of ERM revolves around system composition, fitting metrics, the social factor and the raplex environment. This has brought about a holistic view of risk management being thought about by other proponents. (Financial Stability Board, 2009).

No one questions in the current environment, that boards of directors and audit committees are under greater scrutiny for company oversight, or that the sensitivity of public markets to risk events has heightened to a point where even a minor incident can have a major impact on market value. (Financial Stability Board, 2009).

Some interesting trends have developed in the way companies treat risk management. For example, CEOs and CFOs of some companies in Zimbabwe have spoken courageously and confirmed they have gaps in risk coverage, and that few of them take a truly comprehensive view of the risks to their organization (EY, 2013).

One especially interesting finding was that many organizations had a number of small groups that were charged with responsibility for one function within the company's risk profile (legal, information, technology, etc.), and that these groups most often operated independently of one another. No one person or organization was in charge of coordinating

these groups to get a comprehensive view of risk. In most cases, different groups reported up through the organization to different people altogether. (Henschel, 2008).

For example, literature reveals that risk management is still in an early phase of development and that no standard for Small to Medium Enterprises (SMEs) has yet become established which would describe how a comprehensive risk management should appear (Henschel, 2008).

Risk management is a formal discipline whose sequence rarely runs smoothly in practice; sometimes simply identifying a risk is the critical problem, while at the other times arranging an efficient economic transfer of risk is the skill that makes one risk manager stand out from another. (Croughy et al 2009). On a similar note, they defined risk management as how firms actively select the type and level of risk that is appropriate for them to assume. Most business decisions are about sacrificing current resources for future uncertain returns. (Croughy et al 2009).

The provisions of ISO 31000: 2009, Risk Management Principles and Guidelines, were that risk management creates and protect value. It further states that risk management contributes to the demonstrable achievement of objectives and improvement of performance in, for example, human health and safety, security and regulatory compliance, public acceptance, environment protection, product quality, project management, efficiency in operations, governance and reputation. It is the responsibility of management and an integral part of all organizational process, including strategic planning and all project and change management process. (Triantis, 2000.)

However, although ISO 31000:2009 provides some generic guidelines not intended to promote uniformity of risk management across organizations, no wonder why there is no certification to organizations. Triantis (2000) states that a company needs to understand the sources of risk it is exposed to in order to manage them well. While we are positive about the future of Africa, much of the world is struggling with the repercussions of the global economic crisis. Zimbabwe is not an exception.

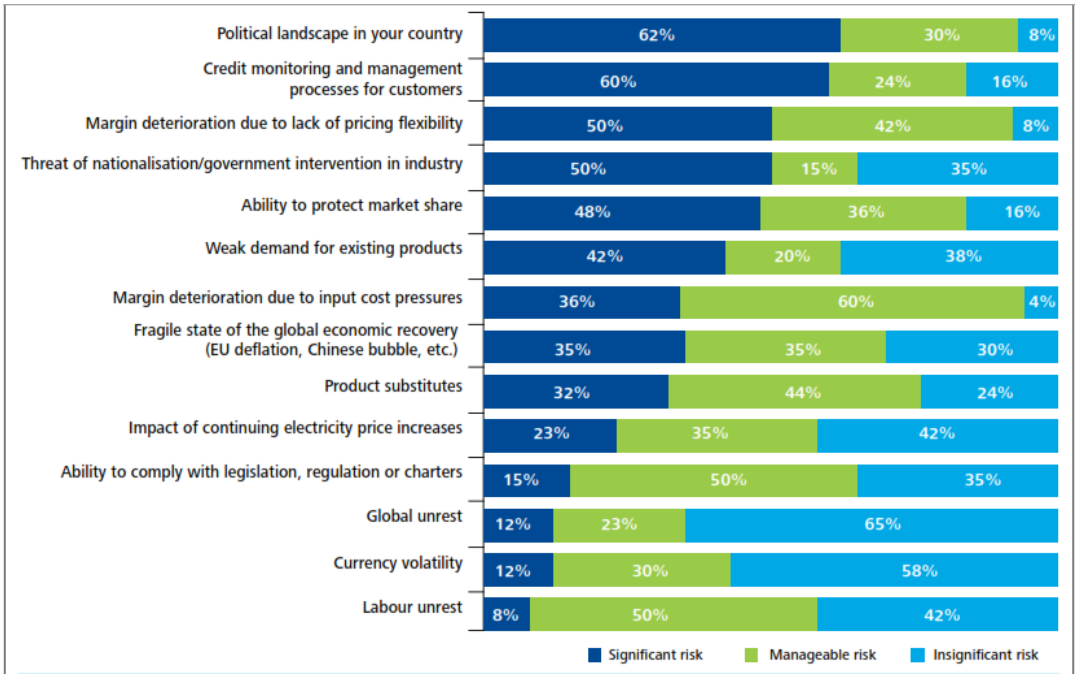
In addition, the risk management practices have focused primarily on financial controls and regulatory compliance especially for mining and telecommunication industries. According to: https://chapters.theiia.org/calgary/.../Ernst%20and%20Young%20Presentation.pdf [accessed 16 February 2017, online], events of the last 10 years such as the recent hyperinflationary economy, multicurrency regime, inconsistent government policies and the financial crisis affecting international liquidity have demonstrated the shortcomings of the traditional approach to risk management. The following Africa scenarios were cited that included Zimbabwe. (Connair, 2013).

Firstly, there is a scrutiny aspect. Boards and audit committees are under greater scrutiny for risk management oversight. Secondly, there is need for exposure. Impact on market value from negative "risk event" has exponentially grown in the current environment. Next, there is shareholder value where 82% of institutional investors are willing to pay a premium for companies with a successful approach to risk management. Gaps follow after shareholder value as 59% of CEO's and CFO's surveyed recognized that they do not have a comprehensive process for managing their key risks. Finally, Silos-based thinking was cited. This refers to thinking in containers where some departments of a company do not share information with other departments. The opposite of this silo approach is an integrated view that considers risk from the perspective of a whole organization, which is called ERM (Connair, 2013).

The Chartered Institute of Management Accountants (CIMA) published a report which most companies have at least 10 groups or departments performing different risk management functions independent of one another. The report shows three important weaknesses of the silo mentality. The first shows that risk was being monitored in individual divisions but the overall risk could develop unchecked. The second weakness of this approach is the possible development of an aggressive risk culture. The last weakness is the dependence on mathematical risk models, which can be dangerous, because the model probably accepts risks at certain levels, yet entities should not accept it in their everyday operations (CIMA, 2010).

The Zimbabwe CFO Report (2004) suggest that as is the case throughout Southern Africa, the core strategy of Zimbabwean businesses at present is defensive in nature. The report went on further to show that risk management is not being holistically followed by entities as shown by the diagram below:

Figure 1. 1: Risk Factors



Source: The Zimbabwe CFO Report, section 17, 2004.

Instead on assessing risk management practices, their main concern was centered around the consistency of policy application as this has a direct impact on FDI. (The Zimbabwe CFO report, 2004)

1.2 Statement of the problem

Risk management practices have changed substantially over the past ten years. The regulations that emerged from the global financial crisis and the fines that were levied in its wake elicited a wave of change in risk functions. These included more detailed and demanding capital, leverage, liquidity, and funding requirements, as well as higher standards for risk reporting. The management of non-financial risks became more important as the standards for compliance and conduct tightened. Stress testing emerged as a major supervisory tool, in parallel with the rise of expectations for risk-appetite statements, for example for financial mines. (Philipp Härle, 2015)

Entities in developed countries also invested in strengthening their risk cultures and involved their boards more closely in key risk decisions. They also sought to further define and delineate their lines of defense. Given the magnitude of these and other shifts, most risk functions in corporates are still in the midst of transformations that respond to these increased demands. (Philipp Härle, 2015)

This being observed, the researcher therefore seeks to investigate the effectiveness of risk management models or approaches being used in Zimbabwe by listed companies to manage risks.

1.3 Main Topic

The overall objective of this study is to evaluate risk management practices on performance of corporates: a case of Zimbabwean listed entities in the mining sector.

1.4 Conceptual framework

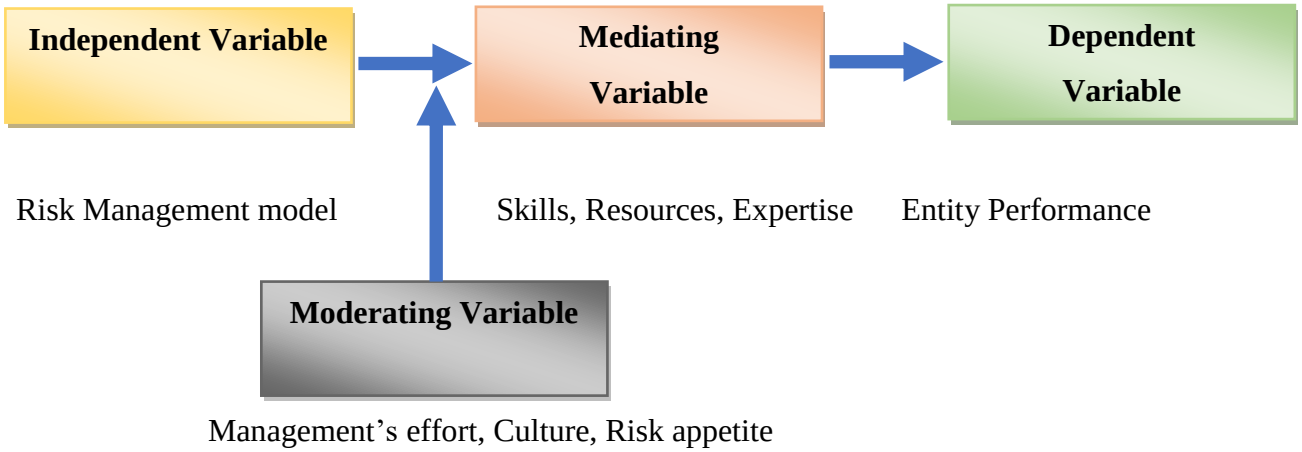
The conceptual framework is a written or visual presentation that explains either graphically or in a narrative form, the main things to be studied – the factors concepts or variables – and the presumed relationship among them. (Miles and Huberman, 1994).

The conceptual framework shows the main components of the risk management theories used as benchmarks against leading practice by Risk Experts in managing risks and performance. According to AIRMIC, Alarm, IRM (2010), ISO 31000:2009 Risk Management -principles and Guidelines; was published in 2009 as an internationally agreed standard for the implementation of risk management principles. (Miles and Huberman, 1994).

The focus of the research is within the risks management theories which assists listed mining entities on how they can adopt a working risk management model at strategic level to boost and improve functioning of organizations.

Consequently, the research is restricted to two related variables which coexist - risk management (independent/predictor), management effort and tone at the top (moderation variable), risk management framework/culture/model (mediating variables) and organizational performance (Dependent/outcome variable); and are discussed and explored in detail in the subsequent chapter.

Figure 1. 2: Conceptual framework variables



Source adapted from: Bhattacherjee (2012, page 12.)

1.5 Sub research questions

i. What risk management frameworks have been applied to the mining sector?
ii. How have the risk management frameworks been implemented in the sector?
iii. What controls are in place over the risk management frameworks?
iv. What challenges have been experienced in the implementation of the frameworks?
v. What personnel capacity is available to implement the frameworks?
vi. What best practice can be recommended for the mining sector?

1.6 Research Objectives

i. To identify the risk management frameworks that have been applied to the mining sector.
ii. To ascertain the level of risk management frameworks implemented in the sector.
iii. To establish controls designed and operating on the established risk management frameworks.
iv. To identify challenges experienced in the implementation of the risk management frameworks.
v. To establish what personnel capacity is available to implement the risk management frameworks.
vi. To identify best practice trends in the mining sector for risk management frameworks.

1.7 Significance of the study

The study is significant in the following areas:

Significance to Risk Practitioners in public practice

To create a firm foundation for practitioners to further their studies around the topic in public practice and provide more insights into the analyses done.

Significance to the researcher

To assist the researcher in completing the Master of Commerce degree in Accounting and graduate in 2017.

To enhance the researcher's knowledge in risk management frameworks for listed mining entities and applying academic theories which relate to reality.

Significance to the University

The research product will serve as an archive for fellow students pursuing further research in the areas of risk management, performance measurement and strategic planning.

Significance to entities in Zimbabwe

To take a broader look at risk management and not only focus on the "risk that matter" specific to the industry. A holistic approach to managing risks and performance at a strategic level is optimally able to make firms survive the raplex market forces that poses constant threats to the firm's going concern assumption. They may consider the adoption of recommendations made.

1.8 Delimitations of the research

The research focuses on listed mining entities in Zimbabwe to give a fair representation of the sector. This also gave convenience to the researcher.

The research data was based on the operational period from December 2015 to March 2017.

1.9 Limitations of the research

Some respondents were initially reluctant to disclose information on the grounds of confidentiality. The researcher coaxed and influenced them that the research was for academic purposes by mentioning that the findings would be held in confidence.

Other theories more suited to developing countries may apply that can be tested differently.

1.10 Assumptions Guiding the Study

The following are the assumptions that guided the study. Sectorial focus, the research was restricted to listed mining entities in Zimbabwe; Cooperation, it was hoped that individuals approached to fill in questionnaires would be cooperative and would complete the questionnaire to the best of their knowledge; Literature, it was assumed the researcher would be able to gather all the relevant material which is pertinent to the study for its successful completion and meaningful contribution to the body of existing knowledge on the subject matter and Research theme, the methodology used would be appropriate.

1.11 Definition of terms

Traditional risk management – means fundamental policies and procedures of identifying, quantifying, and managing specific risks individually with little or no interaction/communication/alignment among risk managers. (Connair, 2013).

“Silo” approach – means silo groups performing different risk management functions independent of one another. (Connair, 2013).

Governance - denotes the guidelines, processes or regulations by which an organization operates and controls. (Moeller, 2011).

Risk (management) – refers to the set of processes through which management identifies, analyzes, and, where necessary, responds appropriately to risks that might adversely affect realization of the organization's business objectives. (Moeller, 2011).

Compliance - means conforming to stated requirements. (Moeller, 2011).

GRC - Governance, Risk management and Compliance (GRC) is the umbrella term covering an organization's approach across these three areas: Governance, Risk management, and Compliance. (Moeller, 2011).

Enterprise Risk Management (ERM) – was defined by the US 'Committee of Sponsoring Organizations of Tredway Commission' (COSO) as, "a process, effected by an entity's board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risks to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives." (Moeller, 2011).

COSO - Committee of Sponsoring Organizations of the Tredway Commission. Originally formed in 1985, COSO is a joint initiative of five private sector organizations and is dedicated to providing thought leadership through the development of frameworks and guidance on enterprise risk management (ERM), internal control, and fraud deterrence. (Moeller, 2011).

1.12 Chapter summary

Chapter one started by looking at the background of the study where a general investigation of risk management practices on the performance of corporates – a case of Zimbabwean listed mining entities was done.

The researcher further highlighted the problem that prompted the need to carry out the research. Main topic, conceptual framework, research objectives, significance of study, delimitations and limitations of the study were also outlined in this chapter.

The following chapter goes through the literature of present and past events to give a clear understanding of the risk management practices on performance of listed mining entities.

Chapter 2

Literature review

2.0 Introduction

The review of literature is the selection of information, ideas, data and evidence written on a particular topic to fulfil certain aim and gives the researcher an intuition of the assistances made by others and it is the ideas and work of others that will provide the researcher with the framework of their own work. (Hart, 2011.)

Further, literature review deal with the research objective(s) and help in answering research questions to empower the researcher to identify and critically analyse ideas, areas of neglect and understand any relationships among different concepts and frameworks and develop own opinion by contextualising to the problem under research. (Hart, 2011).

For this study, literature review focused on historical background for risk management principles, the theory relevant to research questions, key trends in this sector of literature, main theories, areas of disagreement and gaps.

2.1 Historical background on risk management principles

Cosmas Kanhai (2014) stated that there is no generally accepted common approach to the concept of enterprise risk management. A number of frameworks, each of which describe an approach for identifying, analysing, responding to, and monitoring risks and opportunities, within the internal and external environment facing the enterprise have been developed and are being used. While they may vary in name, industry and region, they share a common theme: the identification, prioritisation and quantification of risk holistically or across the entire enterprise to help firms effectively manage their exposure.

The most commonly used ERM frameworks are Casualty Actuarial Society (CAS) ERM framework (2003), COSO ERM Integrated Framework (2004), KPMG ERM framework, CPA Australia (2001) and the ISO 31000 Enterprise Risk Management framework. A study of the various ERM frameworks mentioned above reveals that all share critical characteristics namely the Risk aggregation and consolidation (KPMG & Basel 11), Portfolio view of risk across the enterprise (Segal 2011), Integration of ERM into strategy and operations [Mikes 2005 & Jing Ai et al (2003)], Aggregated bank-wide risk reporting (ANZ ERM Standard), A process ongoing and flowing through an entity and inclusion of all risk categories (COSO.)

The above characteristics form part of the principles of ERM which are not found in the traditional "silo" based risk management approach. An appropriate risk aggregation framework is fundamental for adequate enterprise risk management. Its main objective is to provide appropriate risk information to the relevant management to steer the business. (www.ijbcnet.com Accessed 18 March 2017, online.)

Alviniussen and Jankensgard (2009) noted that the risk aggregation that takes place in ERM allows management to assess interdependencies between its various risk exposures and to take this information into account when developing risk mitigation strategies.

According to the Environment Africa (1995), exploration is a high risk endeavour such that Canadian academics found that to produce a profitable mine, around a thousand metal prospects are explored, of which only a hundred are drilled for reconnaissance and only ten progress to intensive drilling. Contemporary exploration may have altered the ratios but such figures underline the high commercial risk and low accomplishment rate of exploration throughout the globe.

Successfully applying risk management ideologies early lays the groundwork for good associations throughout the whole mine life cycle. There are many examples of relationships being damaged at the exploration/discovery stage or during mine feasibility. This creates difficulties for stakeholder relationships that can carry through to the construction, operational and closure phases of mining and may require significant additional management effort, delay project start-up or adversely affect the life of the mine. (Environment Australia, 1995).

2.2 Key risk management practice trends

The Turnbull Report (1999), and the Hampel Report (1998) come into view against a back drop of growing demand for corporate reporting on the effectiveness of internal control and risk management, and this methodology was confirmed by the Turnbull Review.

Group FRC (2005) argued that Turnbull was premised on the adoption by corporate boards of risk-based approaches to internal control and on the subsequent monitoring of their effectiveness. The concept of risk adopted was a broad one.

ICAEW (1999b), classified risks into five main classes: “financial” “business” (including strategic) “compliance” “operational” and “any other.” By and large, organisations tend to focus on purely financial risks but the “new” risk management presumes comprehensive assessment of the whole business environment. This approach to risk management has been termed enterprise-wide risk management (ERM) by COSO. (COSO, 2004).

However, the subject appears that there is no universal approach to the best risk management practice where no one argues. Challenges related to the process itself have been identified. The process from identifying risks to monitoring risks means a lot of challenges according to Schanfield and Helming (2008).

Figure 2.1: Risk Management process.

Source: Schanfield and Helming (2008)

Consequently, the team has to understand the techniques for identifying risks. The process should include reviews of prior internal audit reports, risk questionnaires, brainstorming, business studies, scenario analysis and more. It is helpful to interact with internal and external stakeholders. (Schanfield/Helming, 2008).

For example, the term “risk questionnaires” can include questions in several areas, such as operation, information/IT, finances, regulations, economics, competition, strategy, litigation and catastrophe. Concerning regulations, questions such as: “What regulations apply to the organisation?”, “Has it ever been audited by an external agency?”, “Are copies of such audit reports available?” and others might be asked. For assessing risk, it is important to take the significance and the likelihood of risk events into account. (Schanfield/Helming, 2008).

There are qualitative, semi-quantitative, and quantitative techniques available to assess the risk in the best way. The challenge here is to determine an appropriate technique or combination of techniques so that the various risks can be taken care of effectively. (Schanfield/Helming, 2008).

Afterwards it is difficult to quantify the risk, the auditors must keep in mind that just because something cannot be quantified in monetary terms, it does not mean that the risk will never occur and does not exist. For example, the governance risk cannot be quantified easily, although governance activities can highly influence an organisation. (Schanfield/Helming, 2008).

Mostly the problems occur when identifying risks because that has to be done by a Risk Management-Team. The team has to systematically collect information on all risks and types of risks. It is important to uncover all risks, because undetected risks can influence the organisation (Posch/Nguyen, 2012).

Embedding risk is a long-term exercise to ensure that risk consideration is the heart of the decision-making process. Failure to escalate risk issues may give rise to serious consequences and questions may arise on how to ensure consistency of approach across a wide range of units. To address these apprehensions, internal monitoring bodies such as internal audit functions and audit committees are becoming progressively more involved in ERM, but it is ambiguous whether these bodies are the best possible means of dealing with risk management issues. (Hodge, 2002.)

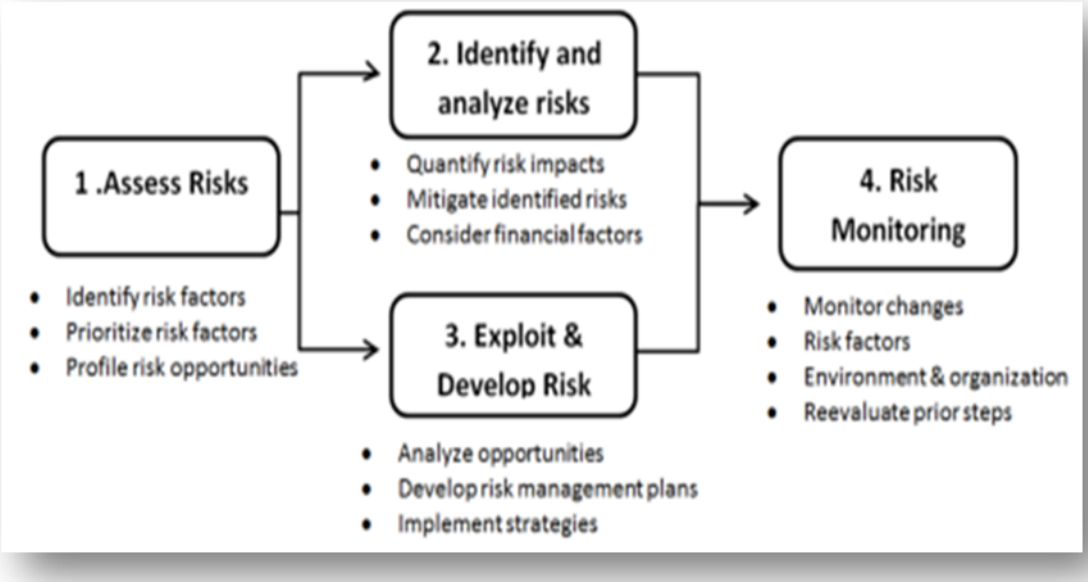
Historically, there has been no obvious body within organizations to manage risk and internal audit departments or audit committees may be filling a gap simply because many risks have an obvious financial dimension. The need for independent assurance raises the question of whether risk management and internal audit should be separated as there is a danger that internal auditors become too involved with the risk management process to maintain their independence. (Hodge, 2002.)

2.3 Risk management frameworks applied to the mining sector

Moeller, (2011) stated that another model to implement enterprise risk management consists of three main principles Governance, Risk and Compliance (GRC). The collapse of the energy trading firm, Enron, due to its accounting scandal, and the housing market collapse led to an improvement for compliance requirements. A few years after introducing Sarbanes-Oxley Act, GRC was first mentioned by PwC in 2004.

Nowadays, the Open Compliance and Ethics Group (OCEG) is responsible for support and guidance to implement GRC. Furthermore, a critical appraisal is trying to find out any shortfalls or necessary improvements (Moeller, 2011).

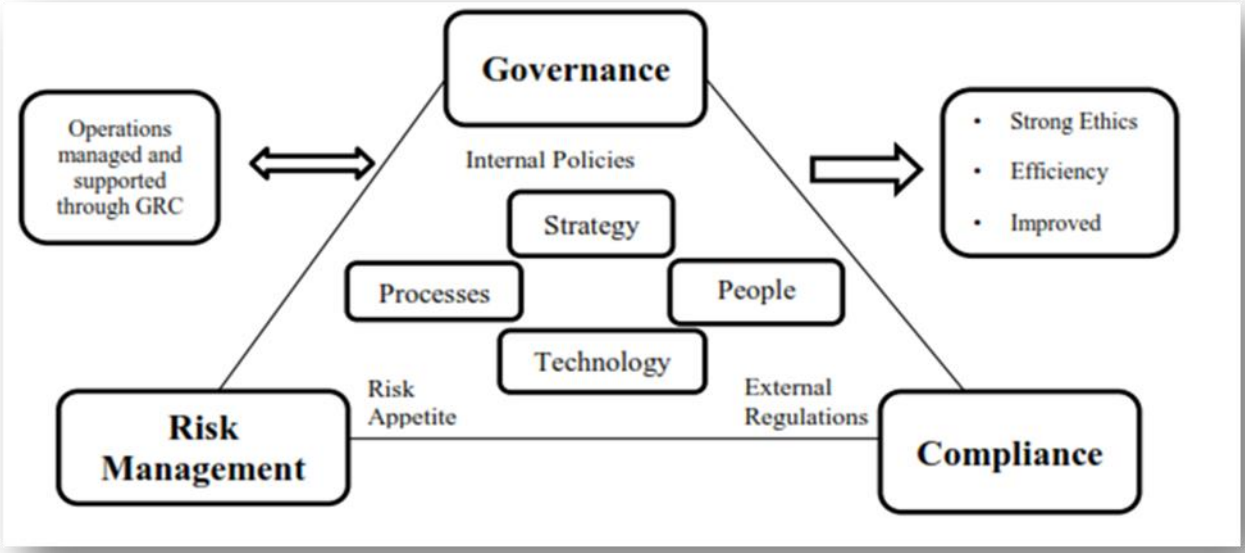
Figure 2.2: Risk Management principles



Source: Moeller (2011)

Existing conventions change unceasingly and strict compliance is hard to establish. Thus, compliance is an ongoing process and not a one-time project (Moeller, 2011).

Figure 2.3: Risk Management principles and the COSO ERM framework



Source: Moeller (2012)

The most common failure of organisations is to deal with those principles separately. They think this is the only thing to do to take care of an organisation, but it is so much more. It is a paradigm to help an organisation grow in the best possible way, and these principles need to be integrated in one another. Each principle consists of four basic GRC components: Strategy, Processes, People and Technology. (Duckert, 2010).

Those components are necessary for this framework to work. The different principles get either supported by internal policies, risk appetite, or by external regulations. All operations need to be managed and supported by the GRC principles in order to state strong ethical values, to ensure efficiency and to improve the effectiveness of an organisation (Duckert, 2010).

Many experts say that a holistic, strategic, and integrated approach to GRC shall enhance value and strengthens the competitiveness of an organisation. So far, studies to prove this statement are very rare. In general, only 37 % of all organisations researched understand the value and service of the GRC model and implemented it. A fifth does not even consider GRC. The rest is quite uncertain about its importance, so there is high number of organisations without a GRC framework. (Caldwell, 2012).

Furthermore, many organisations are not capable to implement an integrated framework and still handle the three silos separately. Only a few of them implemented a central GRC department as there are lots of organisational hurdles to overcome (e.g. IT support.) In general, implementing GRC is a highly sophisticated task. Most organisations cannot see any benefit, but a high amount of costs. Those costs are only caused if GRC is not implemented correctly. (Caldwell, 2012).

To grow value out of GRC, organisations need to meet certain requirements that there should be more analytics, more integration with more automated monitoring of risks and controls, more content and more services. (Caldwell, 2012).

To build an effective and efficient GRC model out of this, five architectural principles shall be followed namely simplicity, effectiveness, alignment, accountability and consistency. However, there is still no step-by-step guidance to implement GRC, and it will still take many years for organisations to implement or optimise their system. (Caldwell, 2012).

The decision for an appropriate framework includes the selection of an appropriate risk framework and the implementation into the organisation. Some of the frameworks have advantages, such as workbook materials and display slides that may help the implementation process. Internal auditors can help a management evaluate which are best suited to the organisation's needs. Related to that, the technologic part is important as well. Many risk management packages use a methodology that is not specifically based on the framework. (Caldwell, 2012).

If that happens, the deficiencies can lead to difficulties. Technology should be built around the methodology and used in several ways. Another impact could be that the Human Resource is not integrated in the ERM System. (Caldwell, 2012).

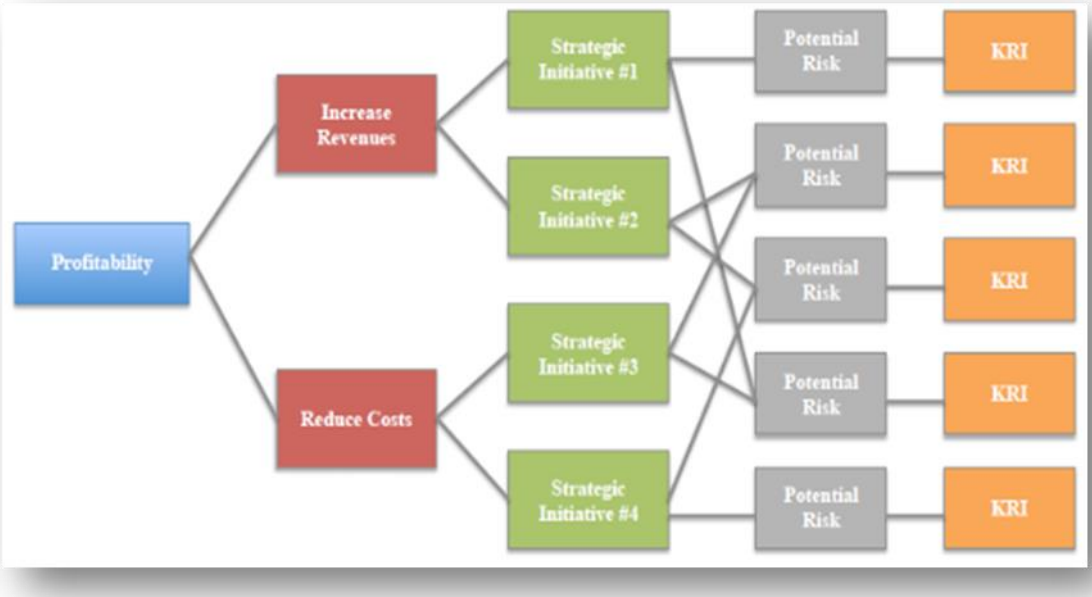
From the Human Resource's view, specific goal-setting tied to the success of ERM must be part of an individual’s performance management plan. If this is not done, the implementation exercise could fail. The business strategy should be defined at the outset of the exercise along with the organisation's mission and vision. The ERM process will flow forward from this strategy, and events will be identified that may impact the achievement of the organisation's strategies and objectives (Schanfield/Helming, 2008.)

To increase the effectiveness of an Enterprise Risk Management process and to improve the accomplishment of an organisation's strategy, the management needs to develop effective key risk indicators (KRIs). Therefore, the awareness of risk can be heightened. (Beasley et al, 2010).

The first step of developing an effective set of KRIs is to identify metrics that can provide useful information about potential risks. A link between the top risks and the core strategies can help to illustrate relevant information that could be a leading indicator of an emerging risk. The illustration shows that the management aims to achieve greater profitability by increasing revenues and reducing costs. The management identified four strategic initiatives to reach those objectives. (Beasley et al, 2010).

Out of these initiatives some potential affective risks have been identified. The management team has to start to identify the most critical metrics. These metrics can be the leading key risk indicators to oversee the accomplishment of strategic initiatives. The KRIs have been identified for each critical risk. This mapping of strategic initiatives, potential risks and key risk indicators can help the management to have an overview and not to be misled by irrelevant information (Beasley et al, 2010).

Figure 2.4: Key Risk Indicators



Source: Beasley et al (2010)

Effective KRIs can provide useful information and value to an entity in different ways. Potential value can be derived from each of the following contributions. Risk Appetite - KRIs can be a useful tool for better articulating the risk appetite that represents the organisational mind set in the best way. Risk and Opportunity Identification - KRIs can be designed to warn the management team or to even show opportunities. Risk Treatment - KRIs can set off actions to mitigate developing risks. They can also serve as controls by fixing limits for certain actions. Risk Reporting - Summary reports can be quickly communicated to the board of directors by KRIs. Compliance Efforts - KRIs can be useful for demonstrating compliance in areas like reserve levels. (Beasley et al, 2010).

As the merchandises super-cycle ends, there are three risk management tips for the mining business, which has traditionally led the way in the discipline. Mining organisations have led the way in terms of risk management for a long time due to the risky nature of all aspects of their business. However, in the next 20 years the need for distinction in risk management will be even greater and wider. (http://www.sword-activerisk.com/the-three-risk-management-lessons-from-the-mining-sector-which-can-help-any-organization/ accessed 17 March 2017, Online.)

There is no safe mining left world over as miners are going profounder to locations never developed before and therefore face new socio-political challenges and ever more complex technologies. Most important undertakings and daily operations need even better risk management and this information needs to be integrated and shared across the enterprise to a concentrate on mining essentials and make risk management simple and pervasive to support this. Today mining is facing challenges head on that organizations in other sectors will encounter in the coming years. The last decade has seen massive overall growth in the size and value of mining companies, driven by commodity price increases fuelled by demand from emerging markets. However, with the prices of copper, gold and iron ore down 30-40% since their 2011 highs, analysts now believe the latest commodities super-cycle is dead as growth in China slows and economic recovery worldwide is taking longer than expected. It's 'Back to the Future' to cope with the new reality. http://www.sword-activerisk.com/the-three-risk-management-lessons-from-the-mining-sector-which-can-help-any-organization/(Accessed 17 March 2017, Online.)

The end of the super-cycle is hitting the mining community hard. Share prices of the big players have tumbled. As a result of commodity and profits falls, miners will need to adjust their businesses strategies and operations. http://www.sword-activerisk.com/the-three-risk-management-lessons-from-the-mining-sector-which-can-help-any-organization/(Accessed 17 March 2017, Online.)

The next 20 years must see miners returning to their roots as skilled operators, rather than pseudo financial mines. Inefficiencies will no longer be masked by increasing commodity prices, so there needs to be greater scrutiny of the risks most likely to impact margins. It will be a case of 'Back to the Future', back to the fundamentals of being a good miner. Identifying and managing the risks to operational margins, reputation and shareholder value will be key as shareholders continue to demand growth despite falling prices. http://www.sword-activerisk.com/the-three-risk-management-lessons-from-the-mining-sector-which-can-help-any-organization/(Accessed 17 March 2017, Online.)

The executive board must embrace risk management and see it as strategic for the business or it will not get off the ground. Lastly, those charged with governance should execute risk management at the start of the planning process in terms of strategy and investment projects by way of thorough risk assessment instruments to help decide which undertakings to embark on. It might be too late by the time risks begin to materialise. http://www.sword-activerisk.com/the-three-risk-management-lessons-from-the-mining-sector-which-can-help-any-organization/(Accessed 17 March 2017, Online.)

2.4 Controls in place over the risk management frameworks

Firms generally set up internal control systems to identify and manage risks. Establishing an effective internal control system has become a central issue in corporate governance because of the large number of high-profile fraud cases in recent years. This has resulted in significant efforts to strengthen risk management systems in firms, as well as changes in the Securities Exchange Commission (SEC) and stock exchange regulations. (Minelli et al., 2009.)

Following the improved regulation, all firms should have individual internal control systems capable of providing an assurance that risks are managed in an effective way. The Committee of Sponsoring Organizations (COSO) framework (COSO ERM (2004)) proposes that sufficiently effective internal control provides an assurance that a firm conducts its operations efficiently and in accordance with its mission statement, that its management data and financial reporting are reliable, and that it promotes compliance with applicable laws, and regulations. (Paape and Spekle, 2012.)

The effectiveness of internal control in alternative situations is theoretically explained by interrelated components that can and will influence each other, as in the COSO framework. The framework presumes that the existence of all five elements will lead to effective internal control but offers only broad direction concerning internal control notions and leave the details to the adopting organisations themselves (Paape and Spekle, 2012.)

Aapo Länsiluoto et al (2016) established some facts over controls in place over risk management frameworks through scholarly reviews. COSO has published two globally recognized internal control frameworks namely the Internal Control – Integrated Framework, published in 1992 and the COSO Enterprise Risk Management published in 2004. The frameworks are based on the same conceptual foundation and are mutually compatible.

The frameworks form a strong framework of internal control and are applied in organisations globally to model risk management, especially in firms' subject to complex legislation and regulations which mandates public disclosures of significant internal control deficiencies. Other frameworks have also been established like the King report in South Africa as the basis for the evaluation of internal control (Klamm and Watson, 2009).

The framework views internal control as a system of resources, systems, processes, culture and structure that supports people in achieving objectives in three broad areas according to Simmons (1997) and Sarens & De Beelde (2006).

Effectiveness and efficiency of operations (EFFI) which pertains to the effectiveness and efficiency of operations by enabling firms to respond appropriately to risks, and accomplish performance and profitability goals, and safeguard resources against loss. Simmons (1997) and Sarens & De Beelde (2006).

Reliability of financial reporting (RELI) which covers the preparation of reliable financial statements, including procedures for reporting any control weaknesses with corrective actions. Compliance with applicable laws and regulations (LAW) which specifies adherence to the laws and regulations the organization is subject to. Simmons (1997) and Sarens & De Beelde (2006).

The COSO framework also assumes the existence and functioning five components that play an important role in the achievement of a firm's internal control objectives. These components may be viewed as both fundamental principles and an aid to planning, evaluating and updating controls. (Stringer and Carey, 2002).

The first component, control environment (COEN), is critical to other components because it sets the tone and culture for an organization, upon which all other activities are based. For example, D'Aquila (1998) concluded that a tone at the top of an organization that fosters ethical decision-making is of overriding importance to financial reporting.

Palermo (2011) proposed that culture can be an important determinant of internal control effectiveness. An effective control environment permits a firm to set realistic objectives and ensure the organization has sufficient resources to pursue them.

The second component, control activities (COAC), relates to follow-up, that is, the policies and procedures that help ensure management directives are carried out. Control activities are a range of activities in transaction cycles and other strategic areas. The primary goal of control activities is ensuring that actions necessary to address threats to the achievement of the firm's objectives are taken. (COSO, 2004). Such threats are identified and analysed in the process of risk assessment (RISK), the third component, producing a basis for risk management. Risk assessment is heavily weighted in the newer control framework (COSO, 2004).

Information about threats and changes is generated by means of the fourth component, information and communication (INFO). Information systems deal with the information necessary to inform business decision making and external reporting, by producing operational, financial and compliance-related reports. (Stringer and Carey, 2002).

The quality of an internal control system is assessed through the fifth component, monitoring (MONI). The board of directors and external auditors have an interest in monitoring the functioning of the internal controls, and ensuring that the firm is meeting its objectives. (Stringer and Carey, 2002).

Despite the growing interest in effective internal control and the frameworks to support it, there is still a scarcity of research in this field. Porter et al. (2003) emphasize the continuing difficulties of attempting to evaluate the relationship between the components of an internal control framework.

Hermanson et al. (2012) examined Chief Audit Executives' (CAEs) assessments and found that public companies consistently rate their internal control (control environment, risk assessment and monitoring) as more effective than those in other organizations.

Geiger et al. (2004) found a positive relationship between control environment and risk assessment components. Weaknesses were identified as being in one component and were not identified in others, indicating negative relationships between the remaining components.

Klamm and Watson (2009) examined internal control interrelatedness from information technology (IT) and non-IT perspectives in a study of 490 firms. They found support for the interrelatedness of weak internal control components and that weak components affect reporting reliability more when internal control weaknesses are IT-related.

Agbejule and Jokipii (2009) used survey data to scrutinize the relationship between control activities, monitoring and effectiveness of internal control in firms with alternative strategy types. They found that high levels of control activity and low levels of monitoring ensure greater internal control effectiveness. In disparity, high levels of control activity and high levels of monitoring ensure internal control effectiveness. The authors called for more evidence to document the indicated relation between interrelated internal control components, internal control effectiveness and risk management frameworks in firms.

2.5 Challenges experienced in the implementation of risk management frameworks

There has not been any tangible verification that the COSO ERM frameworks improve or enhance entity value and over the course of the last years, only a few studies have considered the effectiveness of the COSO ERM Framework. In the Adoption and design of enterprise risk management, Paape and Speklé (2012) considered the effect of the ERM design on risk management effectiveness for the first time. They carried out an empirical study in the Netherlands. 825 organisations in the Netherlands were the sample size. This sample size included large organisations, SMEs and the public sector as well. All of them implemented ERM by different designs at different stages.

In general, the main point of criticism for this framework is that there is a very broad guidance. It contains not more than some key principles but organisations have to work them out by themselves (Paape/Speklé, 2012).

According to Paape and Speklé, (2012), COSO determined 3 important factors that increase effectiveness. Those are the frequency of risk assessment, the chosen techniques to measure risk and the time frame of reporting (COSO, 2004). The study stated that there are far more factors necessary to implement an effective ERM system. It is clear that those are important factors, but most organisations need more support in certain parts of the framework. (Paape/Speklé, 2012).

A big issue in practice is the determination of the risk appetite. Shall a risk appetite be determined in a qualitative or a quantitative way? How shall risk appetite be in alignment with objectives of an organisation? COSO issued a special paper dealing with risk appetite but again, there was a very broad guidance, and determination of risk appetite is still a challenge. According to risk assessment, most organisations are not sure about how often they should go over the risks. Organisations call for a minimum level for the frequency of risk assessment at least. The localisation of ERM is another important challenge in implementing an ERM system. (Paape/Speklé, 2012).

According to COSO risk management is the task of every single person within an organisation. That is a huge contradiction in this framework as ERM would not be carried out efficiently if everyone was responsible. Frequently asked questions are who is responsible for ERM in general and on different management levels. The last critical issue was that according to COSO a highly sophisticated IT and information system is necessary in the first place to carry out ERM. (Paape/Speklé, 2012).

However, there is not any support to develop such a system. All in all, most organisations need more detailed guidance to implement COSO. About 43% use the COSO ERM framework, but they did not outperform organisations with another design of ERM. Just using the COSO framework does not contribute to the effectiveness of ERM. (Paape/Speklé, 2012).

Scoring model - risk can sometimes be difficult to calculate. It then becomes a qualitative indicator and it is rated e.g. as low, middle and high. The qualitative results are then assigned numbers again, which is called a quantification of qualitative factors (scoring). This quantification is called a scoring model. One example of that is to quantify the level “excellent “with ten points and grade down to level “insufficient “with zero points. Furthermore, some criteria can be weighed different to distinguish the importance of risk. (Hertenberger, 2007)

Scoring models are versatile and easy to implement. These models allow a multidimensional evaluation and comparison of different alternatives. According to Diederichs, a criticism of the model is that it can hardly be objective. Defining criteria, weighing, and final scoring include some subjective evaluations. Yet in research it is seen as a suitable model to evaluate risks (Diederichs, 2013).

COSO (2004) concluded that one challenge of the implementation is to find the proper framework for an entity supported by a suitable IT-system. Even if some risks are hard to quantify, an organisation should not exclude them. According to research it is necessary to face human errors and to minimise this factor along the whole process. The entity shall be aware of the complex environment and its impact on the organisation.

The risk process contains important challenges in risk identification, risk assessment, risk evaluation, risk treatment and risk monitoring. To start the process and to identify risks an entity should determine the appropriate key risk indicators. Furthermore, the development of a scoring model is a way to evaluate risks even though this model can include subjective estimations. (COSO, 2004)

2.6 Personnel resources required to implement the risk management frameworks

Ian Fraser William Henry, (2007), reiterated that there was agreement that, while parent boards have ultimate responsibility, the ownership of risks must reside with management at lower levels. Companies tended to adopt a multi-procedural approach to developing consistent risk management procedures. Internal auditors were believed to have a role to play but concerns were expressed about expertise and independence.

The paper recommends a split of the internal audit and risk management functions to preserve internal audit independence and clarify internal audit roles. Audit committees are increasingly involved in risk management but there are doubts as to whether they have the time and expertise to undertake more than high level risk reviews. Relations between management and the board are critical for effective ERM. Clear communication of knowledge is needed at all levels of management (Boswell, 2001).

The communication must be honest, and "messengers must not be shot" (King, 2004). As organisations grow in size and complexity, effective risk management becomes increasingly problematic. Responsibility for control has to be widely delegated, but at the same time there needs to be consistency of language, appetite, risk prioritisation and selection of management options. The ERM system must be capable of responding to continuous change, with new risks emerging and the potential impact of other risks altering. Control systems are only as effective as the people operating them and can be frustrated by negligence, incompetence or dysfunctional behaviour. In addition, with diverse ownership of risk, there may be a danger that ERM is perceived as a paper exercise, especially after the first implementation cycle. (King, 2004).

According to Henry (2007), the role of internal audit in ERM is key in determining personnel capacity for implementing risk management frameworks. He argued further by quoting Turnbull; who implied that high level, risk-based internal audit functions are a sine qua non and certainly internal audit functions have become more visible following Turnbull (Bruce, 2000).

Bolton (2000) argues that Turnbull gives internal auditors a clear opportunity to raise their profile and to demonstrate their capabilities to boards and audit committees.

The IIA (2004) has recognised this and defines the core roles of internal audit with regard to ERM as providing objective assurance to boards that the principal business risks are being managed appropriately and that the internal control framework is functioning effectively. The IIA thus recognises the need for objective assurance, and for that assurance to be comprehensive in its scope.

The IIA further emphasised that there is need for separation of internal audit from the risk management process, but the requirement for internal auditors to comment on the appropriateness of risk management leads internal auditors into new territory and implies a depth of understanding of risk that some internal audit functions may not possess (Fraser and Henry, 2004).

This situation could have potentially serious consequences as an internal audit function which has been allocated a prominent role in the assessment of the appropriateness of risk management but which lacks the necessary expertise could be a weak link in the risk management “chain”. This weakness might not become apparent until an unanticipated risk crystallises, which may be too late. In order to ensure that internal audit functions do possess the appropriate skills, companies may outsource internal audit in whole or part or bring in other specialists (e.g. IT) from elsewhere within the organisation. Page and Spira (2004).

Page and Spira (2004) found that internal audit departments varied in size but tended to comprise mainly individuals from a financial background. This may not provide an adequate grounding in risk management and to remedy this deficiency.

Piper (2002) suggests that dedicated chief risk officers or departments should report to boards on risk management and that internal audit functions should report on the underlying processes.

Henry (2007) identified another personnel group in risk management framework - the role of audit committees. He argued that on both sides of the Atlantic, there is a growing emphasis on the role of audit committees in ERM. In the USA, Verschoor (2002) quoting an Ernst & Young survey, indicates that audit committees and boards of directors are increasingly involved in this area. In the UK, Turnbull suggested that review of internal control and risk might be delegated to audit committees.

Hodge (2002) comments that audit committees are increasingly taking on risk ownership but suggests that the audit committee role should be to provide independent challenge to the effectiveness of ERM. Hodge argues that if risk management is to add value, it is essential for CEOs to assume ownership of risks.

Zaman (2001) points out that it is unreasonable to expect audit committees to perform more than high-level reviews given their problems of lack of expertise and time, especially following the additional responsibilities imposed upon them by the Combined Code (FRC, 2006).

There is doubt about the extent of audit committee/internal audit collaboration in practice. One survey of internal auditors (Younghusband, 2000), indicated a degree of ambivalence as to the help received from non-executive directors in the area of risk management, with only 50 per cent of responding internal auditors reporting that non-executives were helpful to them. This is recognised to be a difficult area for non-executives due to their lack of day-to-day business involvement and, in any case, they may not have enough information or expertise to contribute meaningfully (Spira, 2003).

Turley and Zaman (2004) suggest that there is a relationship between the independence of audit committees from executive management and their proactivity towards internal audit but that survey evidence indicates doubt as to whether even strong audit committees can help to prevent and detect control weaknesses. The extent to which audit committees can make a contribution to ERM is, therefore, unclear.

Spira (2003) suggests that while professional guidance for audit committees emphasises the importance of questioning and provides a "task" framework, there is little evidence of tangible benefits accruing from this process. She calls for more research to investigate audit committee impact.

Everyone in an entity has responsibility for enterprise risk management. The board of directors provides important oversight to enterprise risk management, and is aware of and concurs with the entity's risk appetite. The chief executive officer is ultimately responsible and should assume ownership. A risk officer, financial officer, internal auditor, and others usually have key support responsibilities. Other managers and professional staff support the entity's risk management philosophy, promote compliance with its risk appetite, and manage risks within their spheres of responsibility consistent with risk tolerances. (Ernst & Young, 2010).

A number of external parties, such as customers, vendors, business partners, external auditors, regulators, and financial analysts often provide information useful in effecting enterprise risk management, but they are not responsible for the effectiveness of, nor are they a part of, the entity's enterprise risk management. (Ernst & Young, 2010).

2.7 Best practice recommendations for the mining sector

ERM is also a model that that offers a comprehensive risk analysis, assessment and management package which aligns fully with the organizational strategic intent. Ernst & Young, (2010.)

The ERM model is depicted on the diagram below:

Figure 2.5: Enterprise risk management model

Source: Ernst & Young, 2010.

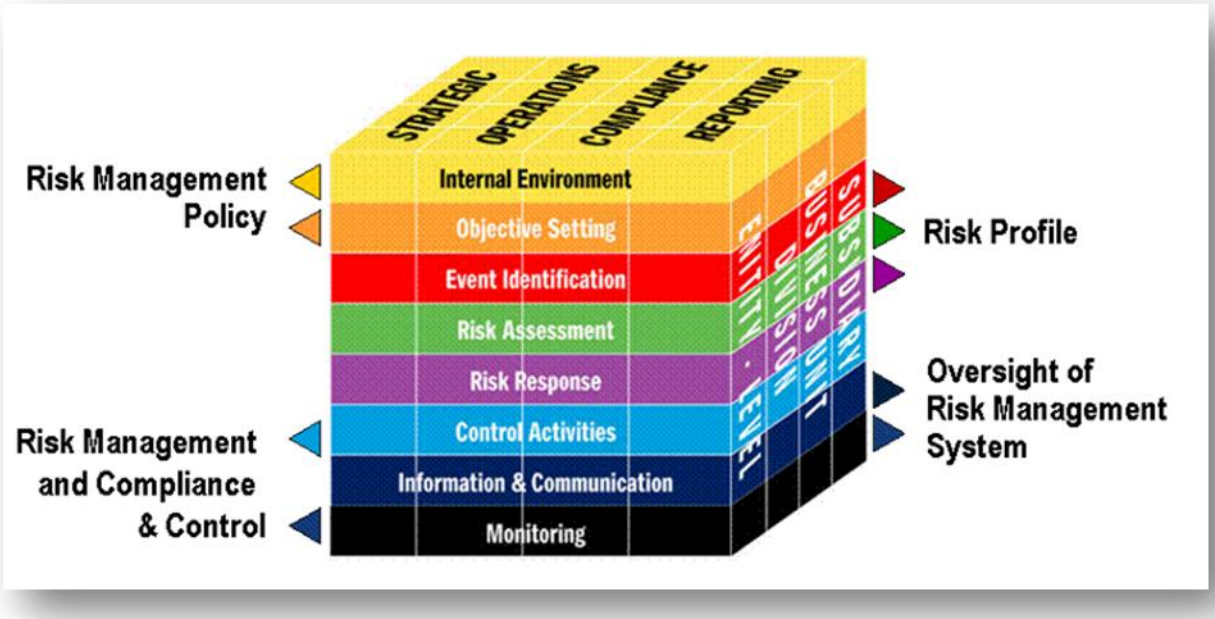
Risk management structure - To work effectively, the risk management structure should: be positioned at the executive management of the organization and should report to the CEO and the Risk Committee or the Audit Committee. Since 1999, this practice has been further supported by the PFMA in Section 38 that the accounting officer has and maintains an effective, efficient and transparent system of financial and risk management and internal control; A system of internal audit under the control and direction of the audit committee. (Public Finance Management Act, 1999).

The roles and responsibilities for the implementation of a Risk Management strategy are contained in the Treasury Regulations published in terms of Section 3.2 of the regulations revolves around risk management. (Public Finance Management Act, 1999).

According to Demidenko and McNutt, (2010), BRICS is the acronym for an association of five major emerging national economies: Brazil, Russia, India, China and South Africa. The grouping was originally known as "BRIC" before the inclusion of South Africa in 2010. The BRICS members are all developing or newly industrialised countries, but they are distinguished by their large, fast-growing economies and significant influence on regional and global affairs. Two frameworks have emerged to assist companies in the implementation of requirements for Risk Management and internal control: (COSO) ERM and ASNZ 4360:2004. There are pros and contras for each of the frameworks to be addressed later. In the interim, we note that COSO ERM has been developed by the COSO of the Tredway Commission and issued in 2004. It is an adopted framework for RM and internal control that has been deemed “suitable” by both the Securities and Exchange Commission and the Public Accounting Oversight Board. COSO ERM consists of two parts: integrated framework and application techniques. (Demidenko and McNutt, 2010.)

ERM is presented by COSO as a system consisting of eight interrelated components in the figure below, looking at the risks both within and outside an organisation from a wider ethical perspective.

Figure 2.6: Risk Management Framework

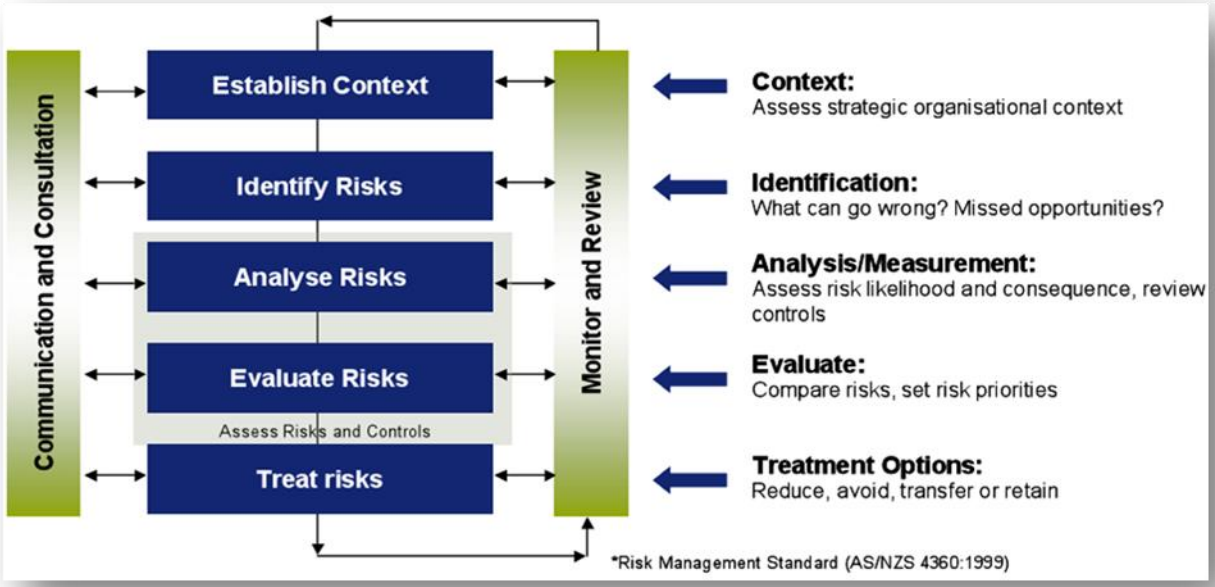


Source: Demidenko and McNutt, (2010)

The risk management framework in the above table has provided key ideologies and concepts, a familiar language and clear path to fulfil the need of investors, organisational personnel and other stakeholders increase assurance in business operations.

The figure below has become an accepted and proven better practice approach to risk management in Australasia. (Demidenko and McNutt, 2010.)

Figure 2.7: Risk Management standard ASNZ 4360:2004



Source: Demidenko and McNutt, (2010)

The criterion outlines a risk management process that contributes to good governance and provides some protection for directors and office holder as part of the ethics of ERM. The protection occurs on two levels in the process: the adverse outcomes may not be as strict as they might otherwise have been and those accountable can, in their defence, demonstrate that they have exercised a proper level of diligence. (Demidenko and McNutt, 2010.)

Comparing key provisions of each of the frameworks, we have noted that COSO ERM defines ERM as a process designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives. (Demidenko and McNutt, 2010.)

The process is affected by an entity's board of directors, management and other personnel, applied in strategy setting and across the enterprise. COSO acknowledges that this definition is sufficiently broad so that it captures key concepts fundamental to how companies manage risk, providing a basis for application across organisations, industries and sectors. It focuses directly on achievement of objectives established by a particular entity and provides a basis for defining ERM effectiveness. (Demidenko and McNutt, (2010).

Many organisations as they implement risk management methodologies find it useful to convert the COSO ERM cube in Figure 7 above, into a process in order to ascertain its inherent logic because risk management is a fundamental part of good business practice and quality management. It is an iterative process of continuous improvement that is best embedded into existing practices of business processes. The benchmark further states that risk management involves identifying and taking opportunities to improve performance as well as taking action to avoid or reduce the chances of something going wrong. (Demidenko and McNutt, 2010.)

Organisations are recommended to manage risks proactively rather than reactively in order to foster a degree of accountability in decision making by balancing actions in terms of the cost of avoiding threats or enhancing opportunities and the benefits to be gained. Good governance ensures an improved effectiveness and efficiency of performance for the enterprise. (Demidenko and McNutt, (2010).

How organisations have perceived risk management in theory and applied it in practice has developed considerably over the past 15 years. ERM has been brought to the forefront. Regulatory changes have been crucial in providing that impetus coupled with growing concerns about fraud and responsibility to shareholders, and the activist call for greater transparency and disclosure to the market, and increased accountability of management and boards. In Australia as in many countries, a number of regulatory changes and new disclosure requirements have driven RM within many organisations. (Demidenko and McNutt, 2010.)

The introduction of principles of good corporate governance and better practice recommendations has influenced RM practices in listed companies. These changes have created expectation for RM and subsequent implementation of formal RM practices within many organisations that are both within and outside regulatory requirements. (Demidenko and McNutt, 2010.)

An overview of the regulatory requirements at both the New York Stock Exchange (NYSE) and the London Stock Exchange (LSE), and respective codes for good corporate governance, enables us to conclude that all regulators identify a proactive board, audit committee (and/or specialized risk committee), independent internal audit function and management sponsorship as critical success factors to effective risk governance. (Demidenko and McNutt, 2010.)

The Australian Securities Exchange regards the audit committee as a safeguard of integrity in financial reporting their requirements focus on risk management a prime value-added system steering internal compliance, control and good governance, and provide guidance to companies on "early warning" mechanism, effectiveness and efficiency of operations in the system. (Demidenko and McNutt, 2010.)

The Russian code of corporate governance principles, for example, focuses on "risk-averse and safe operations" balancing interests towards shareholders. Under the code, an organisation ought not to participate in the operations which lead to greater risk to investors and capital loss. Hence, the ethical principles of "fairness and honesty" to the shareholders are key underpinning requirements of the code. The initial focus of NYSE and SOX 404 has shifted towards internal control over financial reporting and transparency for shareholders. (Demidenko and Patrick McNutt, 2010).

In addition, NYSE and SOX 404 are more prescriptive in terms of governance structure and public responsibility of the management requiring that chief executive officer (CEO) chief financial officer (CFO) make public statements and report to the market on effectiveness of internal control over financial reporting and the board committees comprise only independent directors. ASX and LSE, on the contrary, state that CEO/CFO reports to the board on RM and internal control; they do not require public statement and allow executive directors on the boards. (Demidenko and McNutt, 2010).

2.8 Research Gap

The review of literature showed that scholars have not evaluated risk management practices in the context of organisational performance regardless of which risk management model is prescribed and there was no correlation against actual performance of corporates established. Therefore, scholars have not been conclusive and all-inclusive in terms of the risk management practices' impact of on organisational performance. The researcher provided a conceptual framework to curb this gap based on a case of listed mining entities in Zimbabwe.

2.9 Chapter summary

The literature findings fortified the argument that instead of waiting for best practices or further guidance, organisations shall put more effort in developing their individual risk management practice framework. Therefore, the research progressed with a focus on listed mining entities in Zimbabwe which sought to confirm the assertions made and emphasised the justification for carrying out the research project.

The next chapter will explain the methodology used in conducting the research, how the sample of the survey was chosen and the justification for choosing it. The chapter will also indicate the type of instruments used in the analysis and why they were chosen.

Chapter 3

Research Methodology

3.0 Introduction

The purpose of the chapter was to discuss the research philosophy in relation to other philosophies; develop the research strategy, including the research methodologies adopted; and introduce the research instruments that were developed and utilised in the pursuit of the research objectives. The chapter also described the limitations encountered during the research on evaluating risk management practices on performance of corporates for listed mining entities.

3.1 Research philosophy

A research philosophy is a belief about the way in which data about a phenomenon should be gathered, analysed and used. The term epistemology (what is known to be true) as opposed to doxology (what is believed to be true) encompasses the various philosophies of research approach. The purpose of science, then, is the process of transforming things believed into things known: doxa to episteme. Two major research philosophies have been identified in the Western tradition of science, namely Positivist (sometimes called scientific) and Interpretivism (also known as antipositivist.) (Galliers, 1991).

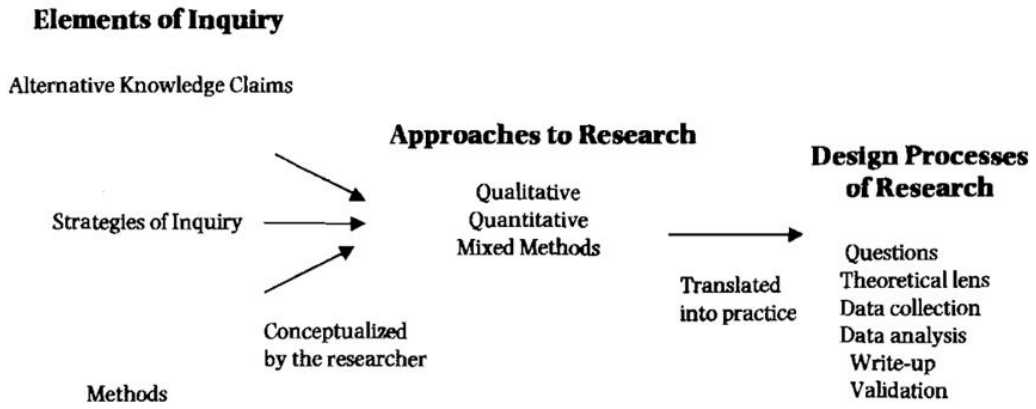
Creswell (2007) argued that there are two extreme paradigms underlying social science research which are positivism and phenomenology. Within the two paradigms lie eight philosophies which are Realism, Interpretivism/constructivism, Objectivism, Subjectivism, Pragmatism, Functionalism, Radical humanist and Radical structuralism. Benbasat et al., (1987) observed very accurately that no single research methodology is intrinsically better than any other methodology. Also, Kaplan and Duchon, (1988) called for a combination of research methods in order to improve the quality of research.

3.2 Research design

According to Trochim (2006), a research design provides the glue that holds the research project together. It serves as a master plan of the methods and procedures that should be used to collect and analyse data needed by the decision maker, (Everitt et al: 1992).

Creswell (2003) provided an illustration on how a scholar can choose the overall strategy for research as outlined in the figure below.

Figure 3.1: A framework for research design



Source: Creswell (2003)

Mixed research approach

A mixed methodology encompassing all three approaches was used for carrying out the research, which was deemed to be the most appropriate and the justification for this was provided below. Research seeks to develop relevant true statements, ones that can serve to explain the situation that is of concern or that describes the causal relationships of interest. In quantitative studies, researchers advance the relationship among variables and pose this in terms of questions or hypotheses. Being objective is an essential aspect of competent inquiry, and for this reason researchers must examine methods and conclusions for bias. (Creswell, 2003.)

Bergman, (2008) stated that mixed methods research is an approach to inquiry and research that combines quantitative and qualitative methods into one study in order to provide a broader perspective. Instead of focusing on one type of methodology, mixed methods researchers emphasize the research problem and use all approaches available in order to come to a better understanding. Mixed methods research involves collecting and analysing both quantitative and qualitative data. (Bergman, 2008).

The quantitative data includes closed-end information that undergoes statistical analysis and results in a numerical representation. Qualitative data, on the other hand, is more subjective and open-ended. It allows for the "voice" of the participants to be heard and interpretation of observations. Considering the methods discussed in the quantitative and qualitative modules, following are a few examples of how the methodologies may be mixed to provide a more thorough understanding of a research problem. (Bergman, 2008).

A researcher may collect data using a quantitative data instrument. The researcher may then follow up by interviewing a subset of the participants to learn more detailed information about some of the survey responses, providing a more thorough understanding of the results. A researcher may conduct interviews to explore how individuals describe or feel about a particular topic and then use that information to develop a more useful quantitative survey. The researcher may be planning to use quantitative methods to assess the impact of a particular treatment plan. (Bergman, 2008).

He or she may conduct interviews to better recruit appropriate participants for the trial. The researcher uses focus groups to collect information regarding a topic and then uses a quantitative survey with a larger group to validate the responses of the focus group. These are just a few of the ways that methodologies may be combined in one study to create mixed methods research. (Bergman, 2008).

Further, Bergman (2008) provided some merits and demerits of the mixed approach to research. Both quantitative and qualitative research have weaknesses. Quantitative research is weak in understanding the context or setting in which data is collected and may include biases. Quantitative research does not lend itself to statistical analysis and generalization. (Bergman, 2008).

Mixed method strategies can offset these weaknesses by allowing for both exploration and analysis in the same study. Researchers are able to use all the tools available to them and collect more comprehensive data as this provides results that have a broader perspective of the overall issue or research problem. (Bergman, 2008).

The final results may include both observations and statistical analyses thereby validated within the study. Using both approaches in one study provides additional evidence and support for the findings. Mixed methods can also combine inductive and deductive thinking and reasoning. The researcher can use both words and numbers to communicate the results and findings and thus, appeal to a wider audience. Therefore, combining methodologies helps to reduce the personal biases of the researcher. (Bergman, 2008).

Bergman (2008) also presented some challenges on using the mixed approach to research. Mixed approaches usually is more time-consuming to collect both quantitative and qualitative data and the study may require more resources to collect both types of data. The research procedures are more complicated and may be out of the comfort zone of the researcher. Investigators are often trained in quantitative or qualitative methods and may need assistance crossing over. Methodology requires clear presentation when published or presented so that the audience can accurately understand the procedures and the findings. (Bergman, 2008).

The rationale by the researcher in choosing a mix of explanatory, descriptive and casual survey designs was that it is suited to collect data for describing a population of listed mining entities in Zimbabwe which were observed directly. The design facilitated the gathering of information to meet the research questions.

3.3 Research Population

Jankowicz (1995) defined a population as a full set of cases from which a sample is taken. Cooper and Schindler (2008) defined a population as elements about which we wish to make some inferences and a target population as those people, events and records that contain the desired information, can answer the measurement questions and determine whether a sample or census is desired.

The target population for this research was CEOs/MDs, Risk Managers, Finance Managers and Risk Consultants focused in the mining sector.

Specifically, the population was chosen from the four mining entities listed on the Zimbabwe Stock exchange namely Bindura Nickel Corporation Limited, Falcon Gold Zimbabwe Limited, Hwange Colliery Company Limited and RioZim Limited. [http://www.zse.co.zw/companies/, Accessed 27 March 2017, Online]. Codes were used to maintain confidentiality for these four mining entities.

3.4 Sample size

Jankowicz (1995) defined a sample as a deliberate choice of people, who are to provide data from which conclusions are drawn about the population they represent. The idea is that by sampling, conclusions about the entire population can be drawn. (Cooper and Schindler, 2008.) Wegner (2007) concurred that it is not always possible to gather data from every possible member in a population for reasons of cost and time.

Saunders et al. (2009) argues that there are two types of sampling designs which are probability and non-probability sampling.

Probability sampling is where each case has an equal chance of being selected from the population and involves simple random, systematic, stratified and cluster sampling methods. Contrary non-probability is where the chance of each case being selected from the total population is not known. Non-probability sampling is arbitrary and subjective procedure in which each population parameter does not have a known zero chance of being included. No attempt is made to generate a statistically representative sample. The main non-random sample selection criteria are the personal judgement of the researcher or convenience. The alternative sampling methods provided by non-probability are quota, snowball, purposive judgement, and convenience. (Saunders et al., 2009.)

As stated by Wegner (2007), quota sampling is where the population is divided into segments and a quota of sampling units is selected for each segment. The selection that takes place is non-probability and non-random. The disadvantage of quota sampling is that the selection is biased and data may be unsuitable for inferential analysis.

Snowball sampling is described by each identified member of the target population being asked to identify other sampling units who belong to the same target population. Snowball sampling is merited when used to reach target populations where the sampling units are difficult to identify. The disadvantage is that snowball sampling is biased due to the exclusion of significant sections of the population. Inferences based on this sample evidence are likely to be misleading and erroneous. (Cooper and Schindler, 2008).

Purposive judgement sampling allows the researcher to use personal judgement alone, to choose respondents. However, it may produce biased results due to the unrepresentative nature of the sample with respect to the population from which it is drawn. Valid statistical analyses of the judgement sampling that can be used despite this shortcoming are exploratory and descriptive statistics only. (Wegner, 2007).

For convenient sampling, units are selected to suit convenience of the researcher. Respondents are included in the sample if they happen to be in the right place at the right time. The advantage is that the sampling method is least expensive, least time consuming of all sampling techniques and respondents are easily accessible. (Wegner, 2007.)

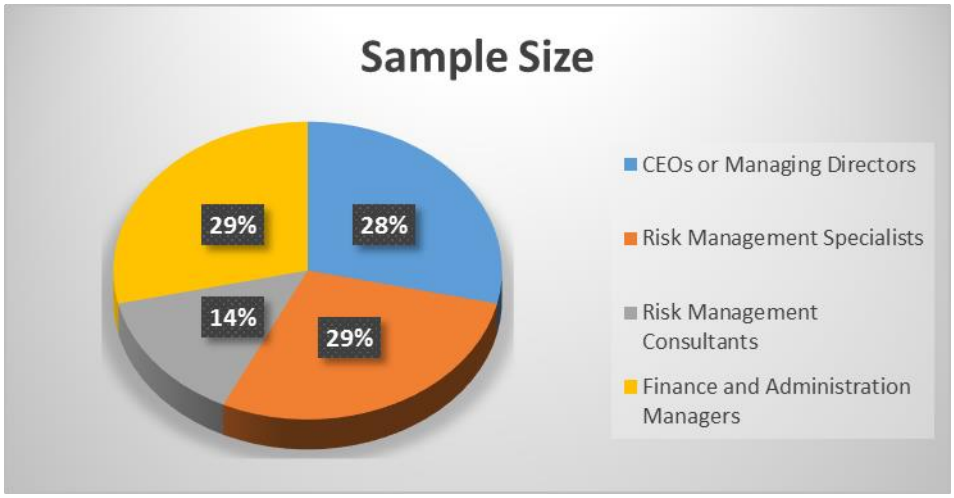
According to Fisher (2010), purposive judgement sampling grants a way to the researcher to put whoever they can obtain access to or whoever they think is appropriate respondents for the questions they want to ask. This assertion substantiated the researcher's choice of purposive sampling as it gives the researcher the ability to select the population that is crucial and get key information. Time constraints also render purposive sampling appropriate.

This research embraced purposive judgement sampling technique to determine the sample size and the researcher identified the units that are most likely to give information based on convenience. Thus, the carefully controlled non-probability based sampling methods of purposive judgement and convenience techniques were chosen to give acceptable results in evaluating risk management practices on the performance of listed mining entities in Zimbabwe.

The suitable sample size for this study comprised 4 Chief Executive Officers or Managing Directors (code 1), 4 Risk Managers (code 2), 2 Risk Management Consultants (code 3) and 4 Finance and Administration Managers (code 4).

The following diagram illustrates the sample size.

Figure 3.2: Sample size used for the research



Source: Primary

An appreciation of the population from which data is collected is incomplete without outlining how the data was collected. Discussed below are the data collection methods which the research employed.

3.5 Types of data

Primary and Secondary

Punch (2005); Saunders et al. (2007); Creswell (2009) describe sources of data as primary and secondary data and qualitative and quantitative techniques as data collection methods.

Surbhi (2016) differentiated between primary and secondary data. Data collection plays a very crucial role in the statistical analysis. Primary data is one which is collected for the first time by the researcher while secondary data is the data already collected or produced by others. (Surbhi, 2016)

There are many differences between primary and secondary data, but the most important difference is that primary data is factual and original whereas secondary data is just the analysis and interpretation of the primary data. (http://keydifferences.com/difference-between-primary-and-secondary-data.html, accessed 4 April 2017 Online.)

According to Surbhi (2016), primary data is the first hand data gathered by the researcher himself. It is real time data and the process is very involved. Source referenced for primary date are surveys, observations, experiments, questionnaire, and personal interviews. These techniques are expensive when it comes to cost effectiveness evaluation. Collection time takes long but is always specific to the researcher's needs. Primary data is largely available in crude form, is accurate with more reliability. Primary data is data originated for the first time by the researcher through direct efforts and experience, specifically for the purpose of addressing his research problem. Primary data collection is under direct control and supervision of the investigator. (Surbhi, 2016.)

According to Surbhi (2016), secondary data implies second-hand information which is already collected and recorded by any person other than the user for a purpose, not relating to the current research problem. It is the readily available form of data collected from various sources like censuses, government publications and internal records of the organisation, reports, books, journal articles, and websites. (Surbhi, 2016.)

Secondary data means past data collected by someone under a quick and easy process. Most sources for secondary data are government publications, and internal records. Collection time is generally short and there is economical cost effectiveness for secondary data which may or may not be specific to the researcher's need.
Secondary data is available in refined form with relatively less accuracy and reliability. (Surbhi, 2016.)

Secondary data has merits in that it is effortlessly available, saves time and cost of the researcher. However, the data is gathered for the purposes other than the problem in mind, so the usefulness of the data may be constrained in a number of ways like importance and accuracy. Likewise, the objective and the technique adopted for acquiring data may not be suitable to the current situation. (Surbhi, 2016.)

Surbhi (2016) explained the key differences between primary and secondary data. The term primary data refers to the data originated by the researcher for the first time. Primary data is real-time data unlike secondary data which relates to the past. Primary data is collected for addressing the problem at hand while secondary data is collected for purposes other than the problem at hand. Data collection is a very involved process for primary data while the collection process is rapid and easy for secondary data. Primary data collection sources include surveys, observations, experiments, questionnaire, personal interview, etc. On the contrary, secondary data collection sources are government publications, websites, books, journal articles, internal records etc. Primary data collection requires a large amount of resources like time, cost and manpower. Conversely, secondary data is relatively inexpensive and quickly available. Primary data is always specific to the researcher's needs, and he controls the quality of research. In contrast, secondary data is neither specific to the researcher's need, nor he has control over the data quality. (Surbhi, 2016.)

Primary data is available in the raw form whereas secondary data is the refined form of primary data. It can also be said that secondary data is obtained when statistical methods are applied to the primary data. Data collected through primary sources are more reliable and accurate as compared to the secondary sources. (Surbhi, 2016)

The research made use of both primary and secondary data.

According to Creswell (2009) qualitative method helps researcher understand the research problem by exploring a concept while in quantitative the problem is addressed by understanding factors or variable influencing an outcome. For this research qualitative data was gathered to explore the problem and then quantitative data to try to explain the relationships found in the qualitative data and in answering the research objective of evaluating risk management practices on performance of listed mining entities. (Creswell, 2009.)

3.6 Research Instruments

Questionnaires

A questionnaire presents questions in writing to the respondents and requires a written down response targeting information as per the research question. Developing a good questionnaire can take time and effort, and it is important to consider early on in the design of a questionnaire how it will be analysed. Questionnaire techniques are open to bias due to poor sampling and bad design, but are the most effective way of obtaining information from large numbers of people. (https://surveyanyplace.com/questionnaire-pros-and-cons/ Accessed 5 April 2017, Online.)

As pointed out by Wegner (2007), a questionnaire is a data collection instrument used to gather data in all survey based studies. Wisker (2001) defined a questionnaire as a data collection instrument used to gather large amounts of data.

A questionnaire allows the researcher to guide participants along lines of thought with regard to the investigation. Self-administered questionnaire offers respondents the flexibility of filling in the questionnaires at their convenient times and have sufficient time to think about their responses. Questionnaires might be unclear or vague to respondents thus feedback can be wrong. Some questions may be left unanswered and that may reduce the sample size and thus introduces sample bias. However, encouraging respondents to answer all the questions in an honest manner as is possible serves as an advantage. In cases where the respondents failed to complete the questionnaires, the partial completed questionnaires can be treated as spoilt and not considered for further deliberation. (https://surveyanyplace.com/questionnaire-pros-and-cons/ Accessed 5 April 2017, Online.)

The use of questionnaires was adopted as one of the main research tools because questionnaires save time and represent an inexpensive way of surveying a large cross-section of people.

Interviews

According to Kahn et al (1957), an interview is a purposeful discussion between two or more people. Semi-structured and unstructured in-depth interviews were carried out with the risk management practitioners and key individuals in the risk management universe. Questions asked during the interviews were pre-set and these enabled similar questions to be asked to all the respondents. Interviewing the right people who are knowledgeable in the research topic gave great value to the research.

Boyce and Neale (2006) stated that a great deal of flexibility and use of personal ingenuity is necessary to stimulate managerial staff to reveal more of their attitudes and motives with regards conducting in-depth interviews. In-depth interviews allow probes that facilitate the acquisition of information especially on complex and emotional questions. They consumed less time as compared to questionnaires thereby allowing more time for data analysis. Also, in-depth interviews allow the use of non-verbal communication during interviews such as monitoring the respondent ‘s body language when discussing sensitive topics. (Boyce and Neale, 2006.)

However, respondents may feel discomforted and intimidated by in-depth interview sessions which could have led to the collection of biased data. (Adamchak et al, 2000.) Some respondents may end up withholding important information for fear of victimization and breaching their confidentiality agreements. (Patton, 2002).

To avert the challenges, the following remedies were considered for in-depth interviews. Firstly, the researcher must adherence to the times, which in most cases is convenient to the respondents. The researcher can create an environment of trust by disclosing the purpose of the study and assuring respondents that the information obtained will be used solely for the purpose of the research. (Adamchak et al, 2000.)

The interviews also enabled the researcher to gain a deeper insight into the evaluation of risk management practices on performance of listed mining entities through the own experiences and beliefs of those charged with governance.
(Adamchak et al, 2000.)

Publications and management reports

Cohen, Swerdlik and Smith (1992), defines secondary data as the analysis of an existing data set which presents interpretation, conclusion or knowledge additional to or different from those presented in the first report.

According to Robson (2002), the use of secondary data is an attractive strategy that permits one to capitalize on the effort of others in collecting data, thus allowing the research to concentrate on analysis and interpretation.

Secondary data was collected from listed mining companies' annual reports issued to the public, financial reporting information available online, journals and articles. The secondary data provided an understanding of the contextual environment of listed mining entities in Zimbabwe. It enabled the researcher to comprehend and identify the risk management practices in force and establish a relationship between risk management practices, strategic goals and performance. Secondary data was also crucial in answering the research objectives.

3.7 Types of Questions used

The researcher used some self-administered questionnaires as a research instrument to collect primary data from the respondents. The questionnaires consisted of both closed and open-ended questions to ensure that no unnecessary information was collected. Closed questions ensured classification in standardised categories that facilitated easy comparison while open ended allowed clarifications and explanations.

Open ended questions

Open-ended and close-ended questions differ in several characteristics, especially as regards the role of respondents when answering such questions. Close-ended questions limit the respondent to the set of alternatives being offered, while open ended questions allow the respondent to express an opinion without being influenced by the researcher (Foddy, 1993).

This has several consequences for the quality of survey data. The advantages of the open-ended questions include the possibility of discovering the responses that individuals give spontaneously, and thus avoiding the bias that may result from suggesting responses to individuals, a bias which may occur in the case of close-ended questions. However, open-ended questions also have disadvantages in comparison to close ended, such as the need for extensive coding and larger item non-response. (Urša Reja et al, 2003)

Lazarsfeld (1944) suggested using open ended questions at the initial stage of questionnaire design in order to identify adequate answer categories for the close-ended questions. In the later stages of the questionnaire design, open-ended questions can be used to explore deviant responses to the close-ended questions.

Closed ended questions

According to Saunders (2009), types of closed questions include list, category, ranking, rating, quantity, and grid or matrix. List questions give the respondent a list of responses to choose from to ensure that the respondent has considered all possible responses. Closed questions provide uniformity of questions and they provide standard responses which will make evaluation of the group as a whole easy. The other advantage is that closed questions save time as they do not take respondents much time to complete. Closed questions avoid problems of interpreting questions and they are easy to process as they enhance comparability of answers. (Saunders, 2009).

This study used the self-administered questionnaire because of its applicability to the interpretive survey research design. The major advantage of using the self-administered questionnaire was that it could be administered to a number of employees at the same time. Moreover, this method was cost effective and convenient in collecting data. (Saunders, 2009).

Likert scale questions

According to Jamieson (2004), the Likert Scale is an ordinal psychometric measurement of attitudes, beliefs and opinions. In each question, a statement is presented in which a respondent must indicate a degree of agreement or disagreement in a multiple choice type format.

The Likert Scale are the most universal method for survey collection, therefore they are easily understood. The responses are easily quantifiable and subjective to computation of some mathematical analysis. Since it does not require the participant to provide a simple and concrete yes or no answer, it does not force the participant to take a stand on a particular topic, but allows them to respond in a degree of agreement; this makes question answering easier on the respondent. (Jamieson, 2004.)

Also, the responses presented on Likert surveys accommodate neutral or undecided feelings of participants. The responses are very easy to code when accumulating data since a single number represents the participant's response. Likert surveys are also quick, efficient and inexpensive methods for data collection. They have high versatility and can be sent out through mail, over the internet, or given in person. (Jamieson, 2004).

Attitudes of the population for one particular item in reality exist on a vast, multi-dimensional continuum. However, the Likert Scale is one-dimensional and only gives 5-7 options of choice, and the space between each choice cannot possibly be equidistant. Therefore, it fails to measure the true attitudes of respondents. Also, it is not unlikely that peoples' answers will be influences by previous questions, or will heavily concentrate on one response side (agree/disagree). Frequently, people avoid choosing the "extremes" options on the scale, because of the negative implications involved with "extremists", even if an extreme choice would be the most accurate. (https://psyc450.wordpress.com/2011/12/05/the-likert-scale-advantages-and-disadvantages/, Accessed 3 April 2017, Online)

Likert scale questions are quick and economical to administer and score, easily adapted to most attitude measurement situations, provide direct and reliable assessment of attitudes when scales are well constructed and lend themselves well to item analysis procedures. Item analysis increases the degree of homogeneity or internal consistency in the set of statements for Likert scale questions. Subjects generally find it easy to respond because they have a wide range of answers (usually five) to choose from instead of only two alternative responses, i.e., agree or disagree. With Likert scale questions, no outside group of judges is involved in selecting statements and in giving values to them. (Vagias, 2006).

Results are easily faked where individuals want to present a false impression of their attitudes (this can be offset somewhat by developing a good level of rapport with the respondents and convincing them that honest responses are in their best interests). Intervals between points on the scale do not present equal changes in attitude for all individuals (the differences between "strongly agree" and "agree" may be slight for one individual and great for another). Internal consistency of the scale may be difficult to achieve and care must be taken to have similar items aimed at a single person, group, event or method. (Jamieson, 2004).

Good attitude statements take time to construct and it is usually best to begin by constructing several times as many attitude statements as the researcher will actually need, then selecting only those that best assess the attitude in question. Ties in ranks may occur quite frequently and the response pattern of an individual is not revealed. The other limitation is that a respondent is required to answer all questions on the scale, which may give a problem when it comes to interpretation. (Jamieson, 2004). Likert scale questions have scales and all statements of a universe are deemed to be of equal attitude value, which is not real. (Vagias, 2006).

3.8 Data Validity and Reliability

Cohen et al (2007) stated that reliability includes fidelity to real life, context- and situation-specificity, authenticity, comprehensiveness, detail, honesty, depth of response and meaningfulness to the respondents. With a different view are Punch (2005); Saunders et al. (2009) who defined reliability as the extent to which data collection techniques and analysis procedures yield consistent findings.

Silverman (2011) purported that reliability is to ensure accuracy and inclusiveness of recordings that the research is based on. The research adopted some elements of reliability from the above definitions which are authenticity, honesty, consistent and accuracy. This research authenticated reliability by evaluating findings against the literature reviewed. The pilot testing and employment of triangulation methods enriched the reliability of the data collected. The use of questionnaires also increased data reliability as questionnaires used standardised questions and respondents answered the same set of question. (Silverman, 2011.)

Saunders et al. (2009) stated that validity is concerned with whether the findings are really about what they appear to be about.

Fisher (2010); Silverman (2011) are of the notion that validity is to test the truthfulness and meaningful of the analytic claims that are being made about the findings. Yin (2003); Fisher (2010) noted the different types of validity and classified them as construct, internal, external and ecological validity.

For this research validity is in terms of the objectivity, meaningfulness and truthfulness of the research and of relevance to the research are the construct and internal validity. Validity of this research was substantiated by careful sampling, ensuring that there were adequate resources for the required research to be undertaken and selecting an appropriate methodology for answering the research questions. The pre-testing also ensured validity as it aimed to refine the questions so that the participants would easily answer. (Yin, 2003.) The use of multiple collection methods enriched the construct and internal validity by ensuring the quality of data and identifying relevant insights. (Fisher, 2010.)

According to Silverman (2011) a crucial dimension of validity in any research concerns the generalizability of findings. Saunders et al. (2009) described generalizability as whether the findings may be equally applicable to other research settings such as other organisations.

The credibility of the research was in sync with the ethical issues which are deliberated by the subsequent section.

3.9 Research Ethics

According to Robson (2002) ethics refers to rules of conduct, conformity to a code or set principles.

It should be noted that this study also complied with generally acceptable ethical requirements, as the researcher sought authority and permission to carry out the research from the organisation and informed consent was obtained from participants.

A letter of introduction with research objective was given to all participants in the research and consent was obtained before information was gathered. The participants were treated fairly, with their consent, consideration and respect.

Confidentiality and anonymity of the participants during collection and analysis of data was maintained. The researcher ensured that the confidentiality and anonymity of the participants is maintained by the removal of any identification before the dissemination of information. The researcher made it clear that the participants' names would not be used for any other purposes nor information is shared that revealed their identity in any way.

In recording the interviews, the researcher sought approval from the interviewee.
Information disclosed was only used for the purpose of the research and the research was carried out according to the University regulations, guidelines and standards.

3.10 Data presentation

The data accumulated in this research was presented visual aids to help examine and interpret the data presented. Graphical representations such as Pie charts, graphs and tables give overview of data and were used to allow easy comparison, clarification of data and could easily be understood and interpreted. The use of these presentation methods was justified also gives a clear depiction of trends and clearly illustrates a summary of the information gathered.

However, presentation of the findings should not overstate the evidence. (Marshall and Rossman, 1990).

3.11 Data analysis

When raw data has been collected, the next step is to process the raw data into information by analysing it. Data analysis involves reducing accumulated data to a manageable size, developing summaries, looking for patterns and applying statistical techniques. (Cooper and Schindler, 2008.)

Wegner (1995) defines data analysis as the process of systematically applying statistical and/or logical techniques to describe and illustrate, condense, recap and evaluate data. Initially, all questionnaires were checked for completeness and irrelevant data was discarded while relevant data was consolidated for analysis.

This screening process allowed the most significant observations to emerge from all the data gathered in the field, while reducing the volume of data.

3.12 Chapter summary

The chapter provided an over-view of the research method that was used in conducting the research citing in detail the research philosophy, research design adopted with justifications. It further outlines its merits and demerits of research tools used. The research population and sample selected was highlighted and justification made for the purpose of the research.

The data presentation and analysis plan to be used in the next chapter is clearly elaborated together with the types of graphs, tables and charts to be used to facilitate comprehension.

Chapter 4

Data presentation and analysis

4.0 introduction

This chapter is built on the premise of presenting and interpreting the findings of the study made from the research instruments administered by the researcher. Data was collected on the basis of research objectives presented in Chapter 1.

The data accumulated in this research was presented through the use illustrative methods that included bar graphs, pie charts and frequency data tables. The use of these presentation methods was justified because they are easy to understand and also gives a clear depiction of trend and clearly illustrates a summary of the information gathered.

The chief objective was to evaluate risk management practices on the performance of listed mining entities in Zimbabwe. In addition, the researcher used his own views to make sound interpretation on the subject matter.

4.1 Data presentation process

Wegner (1995) defines data analysis as the process of systematically applying statistical and/or logical techniques to describe and illustrate, condense, recap and evaluate data. Initially, all questionnaires were checked for completeness and irrelevant data was discarded while relevant data was consolidated for analysis. This screening process allowed the most significant observations to emerge from all the data gathered in the field, while reducing the volume of data.

Qualitative analysis techniques that included deductive analysis were also adopted in pursuit of the mixed methodology highlighted in Chapter 3. Everitt et al (1992) defined deductive analysis as a technique that represents the most common nature of relationships between theory researches. It requires the deduction of general findings to more specific conclusions and is also called the top down approach.

The use of this technique is justified because the research deduced results from a large pool of data ranging from questionnaires, interviews to secondary data.

4.2 Response Rate

Table 0.0: Designation of respondents

JOB DESIGNATION	EXPECTED RESPONSES	ACTUAL RESPONSES	PERCENTAGE
CEOs, MDs	4	1	25%
Risk Managers	4	3	75%
Risk Management Experts/ Consultants	2	2	100%
Financial Managers	4	1	25%
Total	**14**	**7**	**50%**

The response rate shows the magnitude of responses from the data collection methods used thus, questionnaires and interviews. As shown in figure 4.1 above, of the 14 respondents targeted to administer data sets to the 4 main categories of employees in the listed mining entities in Zimbabwe (comprising 4 CEOs or MDs, 4 Risk Managers, 2 Risk Management Consultants and 4 Financial experts,), 7 were successfully completed and returned representing a 50% response rate.

This response rate is satisfactory enough to warrant validity and reliability of the research findings. This is in line with the recommendations by the University of Texas' website, www.surveygizmo.com/survey-blog/survey-response-rates /, which says that the average response rate for external surveys average 10-15%, with internal surveys ranging between 30-40%, the rate of 50% for the study is very acceptable in the researcher's opinion and within the range.

4.3 Data presentation and analysis

Findings from interview questions

Interview questions (n=7)

Question 1: What risk management frameworks have been applied to the mining sector?

All respondents (7/7) highlighted that they use the COSO ERM framework as a risk management framework used to satisfy their internal control needs and to move towards a fuller risk management process. However, the COSO ERM frameworks are adapted to suit the mining entity's policies and corporate strategy.

Question 2: How risk management frameworks have been implemented in the sector?

For the listed mining entities, 57% of the respondents (4/7) confined how their organisation's risk management framework has been implemented while the rest declined on the grounds of confidentiality. Risk service assurance providers such as audit firms where use followed up by a combined assurance model which fits well with the COSO ERM framework for the 57% respondents. Further, Internal and external auditors make reference to the system of internal control source documents like the risk management plan, framework and charter.

Of the respondents who gave feedback, 75% (3/4) made reference to the traditional approaches of risk management largely focused on protecting the assets, contractual rights and obligations of an entity. There references were made because the respondents said that implementation was not an overnight event, rather a process carefully planned and a risk awareness culture created before embracing the COSO ERM framework.

Question 3: What controls are in place over the risk management frameworks?

86% of the respondents (6/7) provided feedback on this section. They said their system of internal control framework is the responsibility of the risk department together with internal audit department. 67% of those who responded (4/6) also made reference to external auditors' work that help built their internal control structure over financial and regulatory matters.

Question 4: What challenges have been experienced in the implementation of the frameworks?

100% of the respondents (7/7) provided feedback to this interview question. Code 2 respondents (4 Risk Managers) elaborated that even though they have embedded enterprise risk management, some executive management are not so supportive and rather focus more financial resources on protecting enterprise value rather than taking an entity level portfolio view of risk.

75% of the code 4 respondents (Finance Managers) where of the opinion that financial and hazard risks take most precedence as they form the core of internal controls when implementing risk management. This was noted as a challenge because priority is not given full attention to other important risks until they materialise. They reiterated that that the ERM scope does not necessarily apply across the entire organisation, the challenge being current state capabilities being directed towards physical, financial, customer and employee assets and not organisation-wide risk spectrum.

Question 5: What personnel capacity is available to implement the frameworks?

The emphasis of risk management was said to be on strategy setting (71% of respondents) and that ownership begins at the top with executive management and cascades downwards into the organisation, mine unit, and functional managers. 86% respondents answered that the board provides the oversight while a CRO equivalent executive is needed to oversee the overall risk management function effectively.

However, 29% (2/7) gave ownership of risk to the people who are exposed to hazards daily being the lower level management and operational staff who were qualified to have the highest likelihood of occurrence and high impact.

Question 6. What best practice can be recommended for the mining sector?

Of the 7 respondents, only 3 (43%) mentioned in their feedback that all organisations face business risks regardless of size and best practice depends on the risk appetite of the organisation, that is, the tone at the top.

The other 4 where of the opinion that what is best for one entity may not necessarily be the best for another, suggesting that that ERM should evolve over time towards what the developed countries have done or else one blind person may lead another. Applying theory to practice was said to be never easy.

Uniform application was cited by code 3 respondents (2 Risk Management Consultants) as something that can never be attained as we aim towards best practice because entities implement risk management framework based on COSO Cube ERM, the GRC model, ISO 31000: 2009, and KPMG ERM framework but the concepts are the same despite differences in methodologies.

Question 7. What recommendations do you have for future efforts such as these?

All respondents were of the opinion that a portfolio view of risk has been around for some time despite there being no documentation of lessons learnt hence best practice trends are difficult to ascertain as internal information is kept on confidential grounds for listed companies.

All the risk management consultants (2/7) responded that the never ending innovations from developed countries, market volatilities in customer preferences, technology, labour markets, equity security risk and product offerings always give rise to new risks. They commented that the board through risk and audit committees need to capture the exponential change management that is ever growing in the mining sector on a routine manner as a good recommendation rather than to resolve audit findings and keep being reactive.

Findings from questionnaires

Risk Management self-assessment questions (n=7)

Table 1.0 Raw data

RESPONDENT	Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10	Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20	Q 21	Q 22	Q 23	Q 24	Q 25	Q 26
A	2	2	2	1	2	1	2	1	2	1	1	1	2	2	2	2	2	1	1	2	2	2	2	3	3	1
B	1	1	1	1	1	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	2	1	1	1
C	2	2	2	2	2	2	4	4	4	3	3	3	2	2	3	3	3	3	3	3	2	2	2	2	2	2
D	2	2	2	2	2	2	4	4	4	3	3	3	2	2	3	3	3	3	3	3	2	2	2	2	2	2
E	2	2	2	2	2	2	4	4	4	3	3	3	2	2	3	3	3	3	3	3	2	2	2	2	2	2
F	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1
G	3	2	3	1	1	1	1	2	1	3	1	2	2	1	1	1	1	2	2	3	2	2	2	2	2	1

KEY	
1=	Strongly Agree
2=	Agree
3=	Unsure
4=	Disagree
5=	Strongly Disagree

Table 1.0 above shows the raw data from the respondents with scores 1 to 5 as interpreted by the key. The figures below show a summary of the feedback comments on each Likert scale question administered.

Frequency Table 1.1: Qualification are significant to risk management

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
STRONGLY AGREE	2	28.6	28.6	28.6
AGREE	4	57.1	57.1	85.7
UNSURE	1	14.3	14.3	100.0
DISAGREE	0	0.00	0.00	0.00
STRONGLY DISAGREE	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

A total 86% (6/7) of the respondents agreed that qualifications are significant to risk management while one respondent was unsure (14%). What is important is that continued professional education in risk management plays a key role for effectiveness of implementing the risk management frameworks adopted by the mining entities.

Frequency Table 1.2: Experience is relevant to risk management

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
STRONGLY AGREE	2	28.6	28.6	28.6
AGREE	5	71.4	71.4	100.0
UNSURE	0	0.00	0.00	0.00
DISAGREE	0	0.00	0.00	0.00
STRONGLY DISAGREE	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

Every manager agreed that risk management requires experience and 28.6% of the respondents strongly agreed to this assertion while a majority of 71% were in agreement. It is striking to note that no one was unsure or was in disagreement implying that experience is a key pillar in risk management.

Frequency Table 1.3: Determine Approach, Risk Sources and Categories

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
STRONGLY AGREE	2	28.6	28.6	28.6
AGREE	4	57.1	57.1	85.7
UNSURE	1	14.3	14.3	100.0
DISAGREE	0	0.00	0.00	0.00
STRONGLY DISAGREE	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

Frequency table 1.3 shows that 85.7% of the respondents support the notion that their organisations have a defined approach to establish risk sources and categories (28.6% who strongly agree and 57.1% who agree).

It is worth noting that the majority agree to the foundations of risk management methodology approaches.

Frequency Table 1.4: Indicators, Identify Risk Sources and Categories

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
STRONGLY AGREE	4	57.1	57.1	57.1
AGREE	3	42.9	42.9	100.0
UNSURE	0	0.00	0.00	0.00
DISAGREE	0	0.00	0.00	0.00
STRONGLY DISAGREE	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

For this Likert scale question, all respondents confirmed their organisations have indicators that identify the source of each risk as supported by 57.1% who strongly agree and 42.9% who agree. This study supports the design of risk management frameworks.

Frequency Table 1.5: Defined Risk Parameters

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
STRONGLY AGREE	3	42.9	42.9	42.9
AGREE	4	57.1	57.1	100.0
UNSURE	0	0.00	0.00	0.00
DISAGREE	0	0.00	0.00	0.00
STRONGLY DISAGREE	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

Results in table 1.5 show that 42.9% of the respondents strongly agreed and 57.1% agreed that their organisations have defined approaches and parameters used to analyse and classify risks implying that a working risk management framework exists.

Frequency Table 1.6: Risk Management Strategy

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
STRONGLY AGREE	4	57.1	57.1	57.1
AGREE	3	42.9	42.9	100.0
UNSURE	0	0.00	0.00	0.00
DISAGREE	0	0.00	0.00	0.00
STRONGLY DISAGREE	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

A strategy to be used for risk management is in place as confirmed by all respondents (57.1% strongly agreed and 42.9% agreed) for the mining entities, inferring that management buy is evidenced at strategic level for effective risk management. No respondent disagreed.

Frequency Table 1.7: Methods of Risk Management exist

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
STRONGLY AGREE	3	42.9	42.9	42.9
AGREE	1	14.3	14.3	57.1
UNSURE	0	0.00	0.00	0.00
DISAGREE	3	42.9	42.9	100.0
STRONGLY DISAGREE	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

A total 42.9% of respondents strongly agreed that their organisations maintains a set of methods used for risk management and 14.3% agreed to give a total by-in of 57.2%. However, 42.9% which is a cause of concern disagreed and suggested that there are no defined methods of risk management within their entities. This is particularly worrying for listed mining entities.

Frequency Table 1.8: Identify Risk Documentation

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
STRONGLY AGREE	3	42.9	42.9	42.9
AGREE	1	14.3	14.3	57.1
UNSURE	0	0.00	0.00	0.00
DISAGREE	3	42.9	42.9	100.0
STRONGLY DISAGREE	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

From table 1.8 above, 42.9% of the respondents disagreed that they document risks within their organisation while 42.9% strongly agreed and 14.3% agreed.

No direct relationship was established why some document and others do not document risks within their listed mining organisations.

Frequency Table 1.9: Existence of Risk Evaluation Parameters

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
STRONGLY AGREE	3	42.9	42.9	42.9
AGREE	1	14.3	14.3	57.1
UNSURE	0	0.00	0.00	0.00
DISAGREE	3	42.9	42.9	100.0
STRONGLY DISAGREE	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

The organisations that evaluates and classifies each identified risk using defined categories and parameters constitute 57.2% of the respondents with a majority 42.9% strongly agreed. The reminder 42.9% remained unsure.

Frequency Table 1.10: Risk categories are given priority

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
STRONGLY AGREE	3	42.9	42.9	42.9
AGREE	0	0.00	0.00	0.00
UNSURE	4	57.1	57.1	100.0
DISAGREE	0	0.00	0.00	0.00
STRONGLY DISAGREE	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

When it comes to evaluation, classification and prioritisation of risk by categories, only 42.9% of the respondents strongly agreed and the rest remained unsure.

This signifies that a gap exists on the extent of using a fully integrated risk management framework which ideally is a pre-requisite.

Frequency Table 1.11: Established Risk Mitigating Plans

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
STRONGLY AGREE	4	57.1	57.1	57.1
AGREE	0	0.00	0.00	0.00
UNSURE	3	42.9	42.9	100.0
DISAGREE	0	0.00	0.00	0.00
STRONGLY DISAGREE	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

4/7 of the feedback received from respondents confirmed that there is an established risk management plan in place while 3/7 were not sure.

It is worth noting that uncertainty exists on the extent of implementing risk management frameworks.

Frequency Table 1.12: Risk mitigation plan implementation

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
STRONGLY AGREE	3	42.9	42.9	42.9
AGREE	1	14.3	14.3	57.1
UNSURE	3	42.9	42.9	100.0
DISAGREE	0	0.00	0.00	0.00
STRONGLY DISAGREE	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

Based on respondents' feedback in the table above, the mining organisations monitors the status of each risk periodically on a scale of 57.2% broken down as 42.9% strongly agreed and 14.3% agreed respectively. Unsure respondents (42.9%) feedback indicate a lack of appreciation of risk management processes and a cause for improvement.

Frequency Table 1.13: Risk and audit committee monitoring

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
STRONGLY AGREE	1	14.3	14.3	14.3
AGREE	5	71.4	71.4	85.7
UNSURE	1	14.3	14.3	100.0
DISAGREE	0	0.00	0.00	0.00
STRONGLY DISAGREE	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

Risk and Audit Committees are handling mitigations plans successfully according to 857% of the respondents. 14.3% are unsure possibly due to uncertainty surrounding implementation of agreed management plans to address identified risks.

Frequency Table 1.14: Policy existence - Risk Management

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
STRONGLY AGREE	3	42.9	42.9	42.9
AGREE	4	57.1	57.1	100.0
UNSURE	0	0.00	0.00	0.00
DISAGREE	0	0.00	0.00	0.00
STRONGLY DISAGREE	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

In terms of plan the process, objectives and plans for performing the risk management process are in place at 100% based on a scale of feedback comprising 42.9% of respondents saying they strongly agree and the remainder 57.1% agreed.

Frequency Table 1.15: Requirements plan - Risk management process

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
STRONGLY AGREE	3	42.9	42.9	42.9
AGREE	1	14.3	14.3	57.1
UNSURE	3	42.9	42.9	100.0
DISAGREE	0	0.00	0.00	0.00
STRONGLY DISAGREE	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

The mining organization has established the requirements, objectives and plans for performing the risk management process as confirmed by 42.9% of respondents who strongly agreed and 14.3% who agreed.

Surety was not confirmed by 42.9% of the respondents signifying a non-integrated system of risk management.

Frequency Table 1.16: Adequate resources provided

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
STRONGLY AGREE	3	42.9	42.9	42.9
AGREE	1	14.3	14.3	57.1
UNSURE	3	42.9	42.9	100.0
DISAGREE	0	0.00	0.00	0.00
STRONGLY DISAGREE	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

Table 1.16 shows 42.9% of the respondents strongly agreeing that the organization provides adequate resources for performing the planned process, developing the work products and providing the services for the risk management process.

Another 14.3% sets the response rate to 57.2% which is slightly above average.

Frequency Table 1.17: Responsibility - Perform the process

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
STRONGLY AGREE	3	42.9	42.9	42.9
AGREE	1	14.3	14.3	57.1
UNSURE	3	42.9	42.9	100.0
DISAGREE	0	0.00	0.00	0.00
STRONGLY DISAGREE	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

Based on feedback provided by the respondents from tables 1.14 to table 1.19 respectively, similar statistics have been obtained indicating some trend which is imperative that mining organization have assigned responsibility for performing the process, developing the work products, and providing the services of the risk management process to a greater extent.

Frequency Table 1.18: Train people

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
STRONGLY AGREE	3	42.9	42.9	42.9
AGREE	1	14.3	14.3	57.1
UNSURE	3	42.9	42.9	100.0
DISAGREE	0	0.00	0.00	0.00
STRONGLY DISAGREE	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

The organization has trained the people performing or supporting the risk management processes as needed based on the responses shown in the table above as 4 out of 7 respondents agreed to the assertion.

Frequency Table 1.19: Identify stakeholders Involvement

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
STRONGLY AGREE	3	42.9	42.9	42.9
AGREE	1	14.3	14.3	57.1
UNSURE	3	42.9	42.9	100.0
DISAGREE	0	0.00	0.00	0.00
STRONGLY DISAGREE	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

The organization has identified and involved the relevant stakeholders of the risk management process as planned as shown by 42.9% of the respondents in strongly agreement and 14.3% agreed.

It is worth noting with concern that 42.9% of the respondents are unsure.

Frequency Table 1.20: Monitor the process control

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
STRONGLY AGREE	2	28.6	28.6	28.6
AGREE	1	14.3	14.3	42.9
UNSURE	4	57.1	57.1	100.0
DISAGREE	0	0.00	0.00	0.00
STRONGLY DISAGREE	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

There is a 42.9% response confirming that the organization is monitoring and controlling the risk management process against the plan and taking appropriate corrective action.

This adverse observation is a concern as a large number (57.1%) remain unsure.

Frequency Table 1.21: Evaluate adherence and objectively

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
STRONGLY AGREE	2	28.6	28.6	28.6
AGREE	5	71.4	71.4	100.0
UNSURE	0	0.00	0.00	0.00
DISAGREE	0	0.00	0.00	0.00
STRONGLY DISAGREE	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

100% (28.6% strongly agree and 71.4% agree) response was obtained from the respondents suggesting that the listed mining organization objectively evaluates adherence of the risk management process.

There is feedback that the work products and services of the processes adhere to the applicable requirements, objectives, and standards as well as addresses non-compliance.

Frequency Table 1.22: Review Higher level management

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
STRONGLY AGREE	2	28.6	28.6	28.6
AGREE	5	71.4	71.4	100.0
UNSURE	0	0.00	0.00	0.00
DISAGREE	0	0.00	0.00	0.00
STRONGLY DISAGREE	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

The organization reviews the activities, status and results of the risk management process with management and resolve issues shown by 71.4% respondents who agreed and 28.6% who strongly agreed.

Frequency Table 1.23: Risk management process standardised

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
STRONGLY AGREE	0	0.00	0.00	
AGREE	7	100.0	100.0	100.0
UNSURE	0	0.00	0.00	0.00
DISAGREE	0	0.00	0.00	0.00
STRONGLY DISAGREE	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

All the 7 respondents (100%) agreed that their organizations established and maintains the description of a defined/standardized risk management processes.

Frequency Table 1.24: Improvement Information Collection

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
STRONGLY AGREE	2	28.6	28.6	28.6
AGREE	4	57.1	57.1	85.7
UNSURE	1	14.3	14.3	100.0
DISAGREE	0	0.00	0.00	0.00
STRONGLY DISAGREE	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

The mining organizations are collecting work products, measures, and improvement information derived from planning and performing the risk management process to support the future use and improvement of the organization's processes and process assets.

This is represented by a majority 85.7% (28.6% strongly agreed and 57.1% agreed). The 14.3% respondents who are unsure might be representative of the room to improve the risk management frameworks in place.

Frequency Table 1.25: Continuous Improvement process and Business goals

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
STRONGLY AGREE	2	28.6	28.6	28.6
AGREE	4	57.1	57.1	85.7
UNSURE	1	14.3	14.3	100.0
DISAGREE	0	0.00	0.00	0.00
STRONGLY DISAGREE	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

A majority 85.7% (28.6% strongly agreed and 57.1% agreed) in table 1.25 confirm that mining organizations ensure continuous improvement of the risk management process in fulfilling their relevant business goals.

Frequency Table 1.26: Problems, Common cause and correction

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
STRONGLY AGREE	4	57.1	57.1	57.1
AGREE	3	42.9	42.9	100.0
UNSURE	0	0.00	0.00	0.00
DISAGREE	0	0.00	0.00	0.00
STRONGLY DISAGREE	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

100% respondents confirmed that their organization identifies and correct the root causes of defects and other problems in the risk management process (57.1% strongly agreed and 42.9% agreed). No one was unsure nor in disagreement to this important assertion.

Controls designed and operating on the established risk management frameworks (n=7)

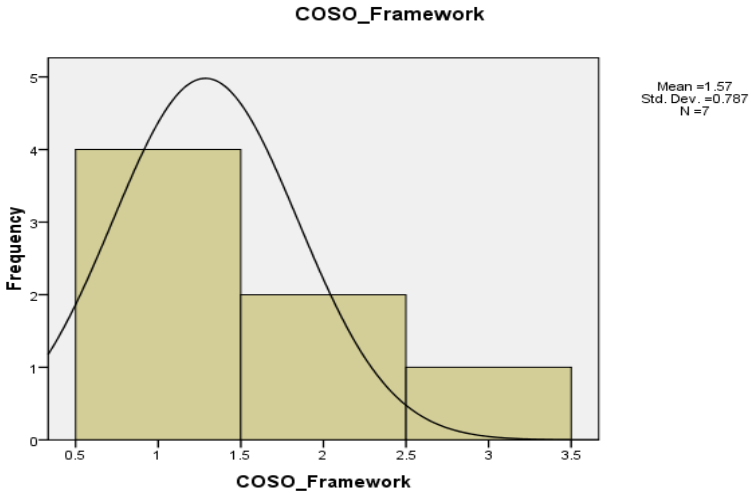
The raw data in table 2.0 below is a summary of the feedback comments via Likert scale. A detailed analysis of the raw data is shown in the histograms that follow for each of the internal control indicator administered.

Table 2.0 Raw data

RESPONDENT	Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10	Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20	Q 21	Q 22	Q 23	Q 24	Q 25
A	1	2	3	5	2	1	2	4	5	1	1	1	4	2	2	2	2	1	1	2	2	2	2	3	3
B	1	3	3	4	1	1	1	5	4	1	1	1	3	1	4	1	1	1	1	1	1	1	2	1	1
C	1	2	3	4	2	2	1	4	4	2	3	2	4	2	3	2	2	2	2	1	2	2	2	2	2
D	2	3	2	3	2	1	1	4	5	1	2	1	3	2	3	2	2	2	1	1	2	2	2	2	2
E	2	2	2	3	2	2	1	4	4	1	2	1	3	2	3	3	2	3	1	2	2	2	2	2	2
F	1	1	1	4	1	1	1	3	5	1	1	1	3	1	4	1	1	1	1	1	1	1	2	1	1
G	3	2	3	4	1	1	1	4	5	3	1	2	2	1	4	1	1	2	2	3	2	2	2	2	2

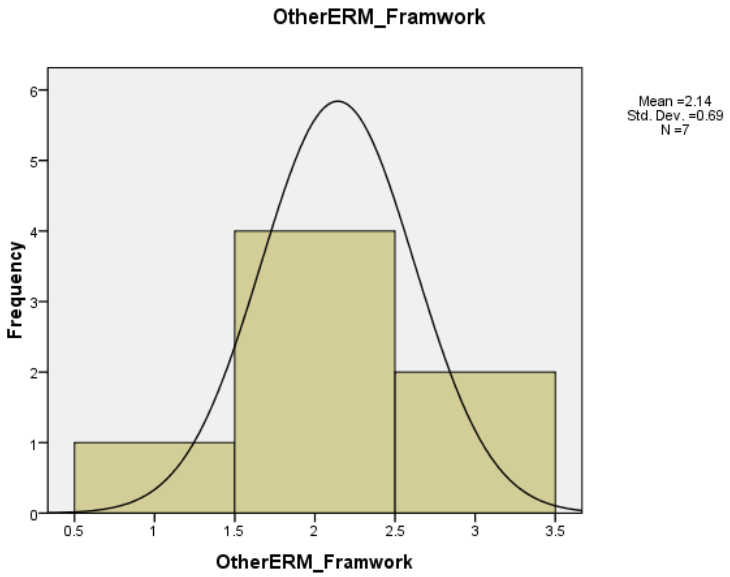
Key	
1=	Strongly Agree
2=	Agree
3=	Unsure
4=	Disagree
5=	Strongly Disagree

Histogram 2.1: COSO framework



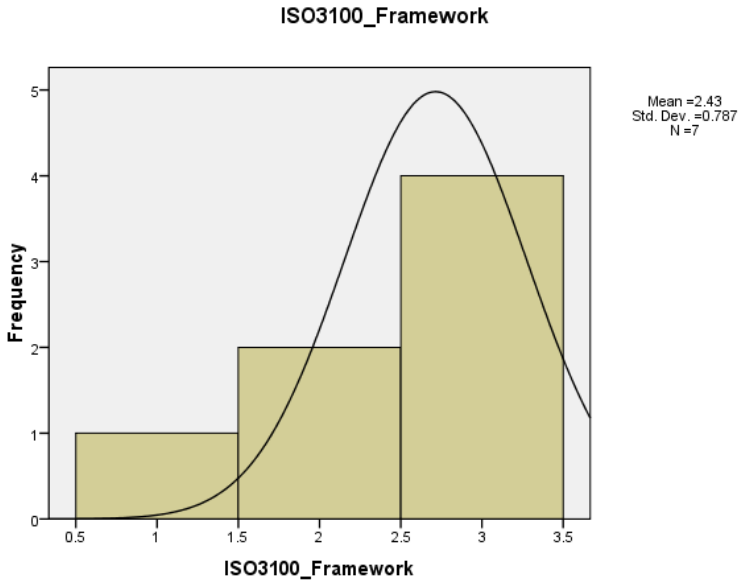
The mean of 1.57 range between “strongly agree” and “agree” response rates depict that the internal control indicator that the COSO ERM framework is being used by the mining entities. A standard deviation of 0.7 show that there is assurance that one respondent said uncertain as shown in the raw data in table 2.0.

Histogram 2.2: COSO framework



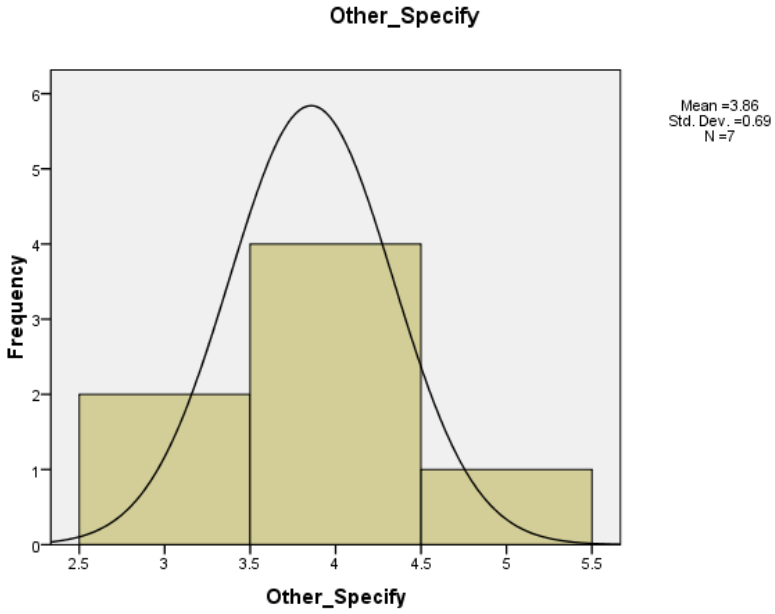
Other ERM frameworks adapted show 2 respondents unsure, 4 respondents agreed, and 1 respondent strongly agreed. No one framework is being used in the mining sector, it can be established based on the standard deviation of 2.14 as observed.

Histogram 2.3: ISO 31000 framework



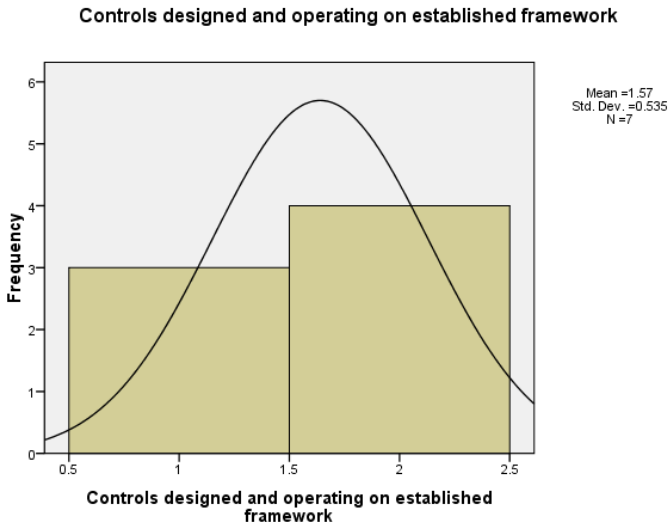
Histogram 2.3 show a mean of 2.43 which lies between ‘agreed and ‘unsure’ which raises awareness that very few respondents borrowed concepts from ISO 31000:2009 principles and generic guidelines on risk management

Histogram 2.4: Other frameworks



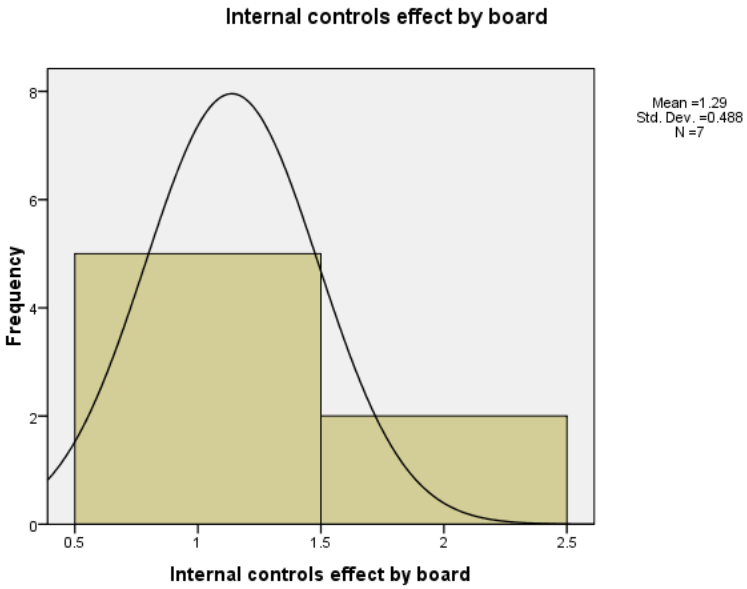
Histogram 2.4 show a mean of 3.86 which lies from ‘unsure ‘disagree” and “strongly disagree’ which implies that respondents are not actively aware of other frameworks used extensively in the mining sector.

Histogram 2.5: Control design for risk framework



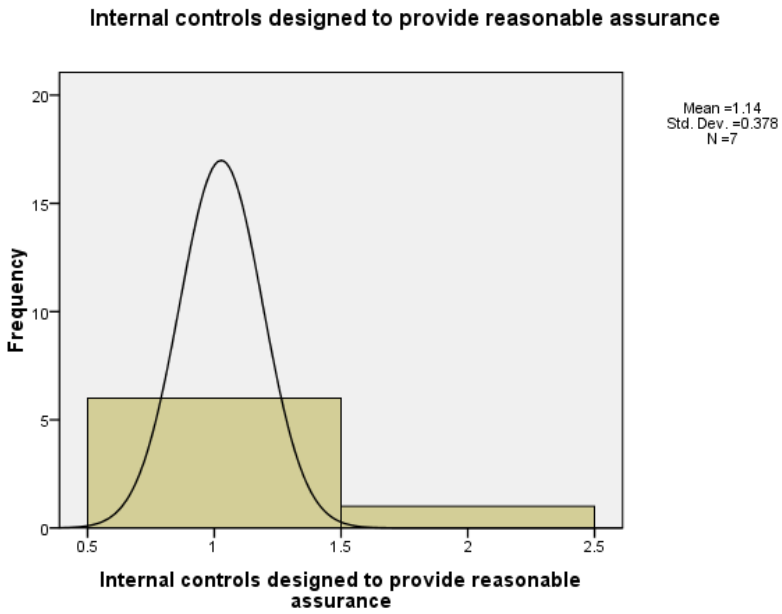
The mean of 1.57 shows that respondents agreed that controls are designed and operating on an established risk management framework, which qualifies this research project.

Histogram 2.6: Internal control effect by the board



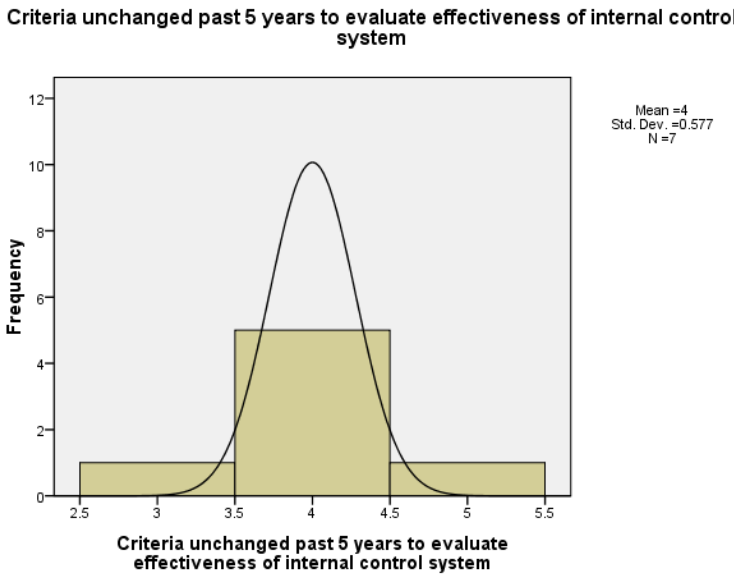
The notion that internal controls are effected by the board of directors, management and other personnel was agreed by the 7 respondents as shown by an average of 1.29 and a standard deviation of 0.488.

Histogram 2.7: Internal control designed to give reasonable assurance



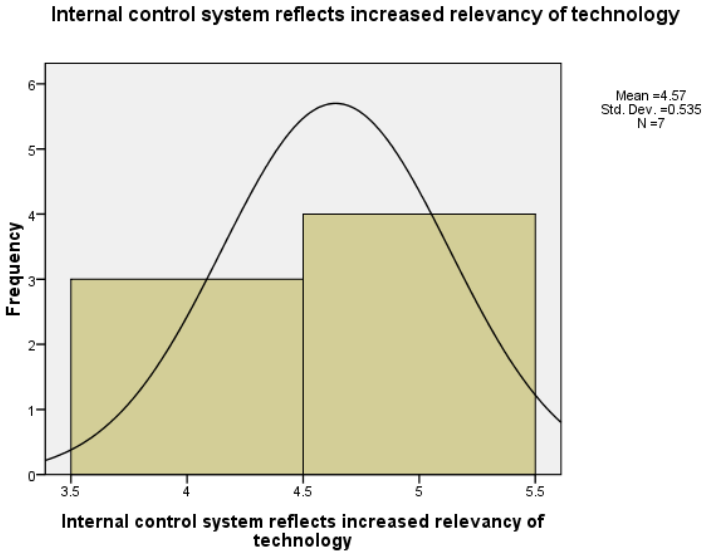
Internal controls are designed to provide reasonable assurance regarding the achievement of mining objectives. As a result, the mean of 1.14 shows that organisations are using risk management frameworks with this defined risk indicator effectively.

Histogram 2.8: Criteria unchanged to evaluate internal control system



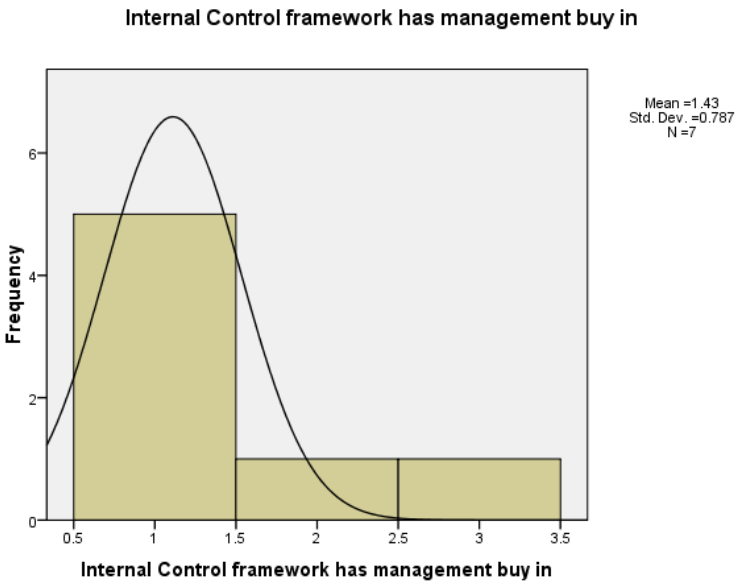
The criteria used to assess the effectiveness of internal control system remain largely unchanged over the past 5 years. This is not so true because raw data show 5 respondents (71%) disagreed to the assertion on this risk indicator. One is unsure and one strongly disagreed. Management is generally proactive to embrace changes that effect mining operations and have risk responses intended to mitigate threats.

Histogram 2.9: Internal control system reflects increased relevancy of technology



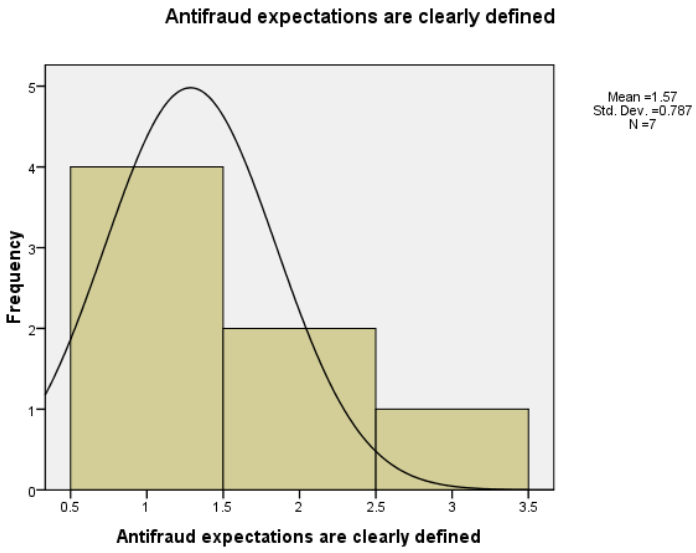
Histogram 2.9 above show that the system of internal controls in place for most mines does not reflect increased relevance of technology indicating the sector falls behind new technologies (mean of 4.57).

Histogram 2.10: Internal control framework has management buy in



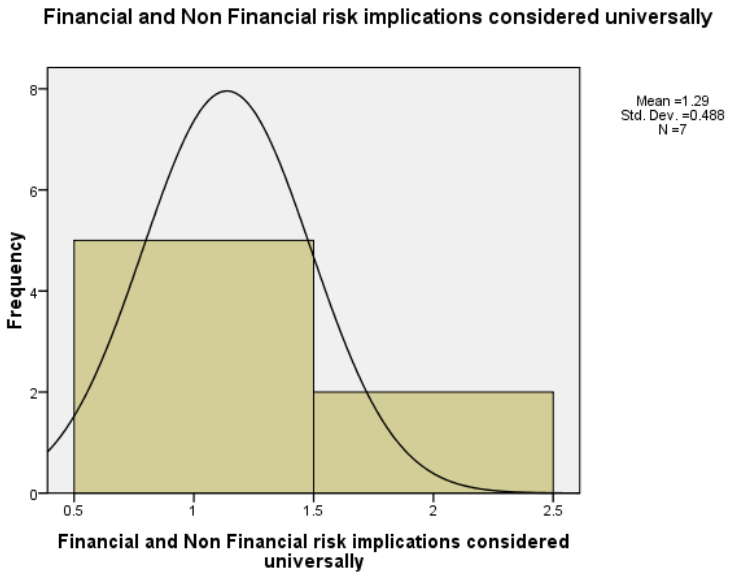
The internal control framework has management buy in towards discussion of corporate governance concepts as depicted a mean of 1.43 (strongly agreed and agreed) thought a standard deviation of 0.787 relates to one respondent who is unsure.

Histogram 2.11: Antifraud expectations are clearly defined.



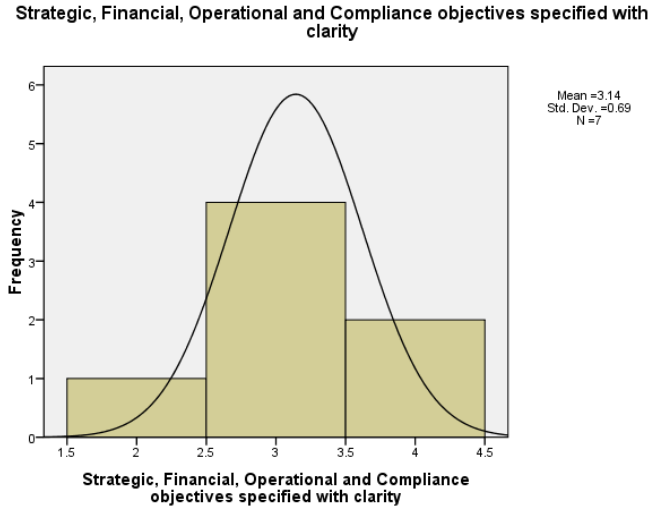
Anti-fraud expectations are clearly outlined because 4/7 (57.1%) strongly agreed. Only one respondent was unsure hence a standard deviation of 0.787. Management's tone at the top seem to respond well to potential fraud risks in the mining sector.

Histogram 2.12: Financial and non-financial risk implications considered universally



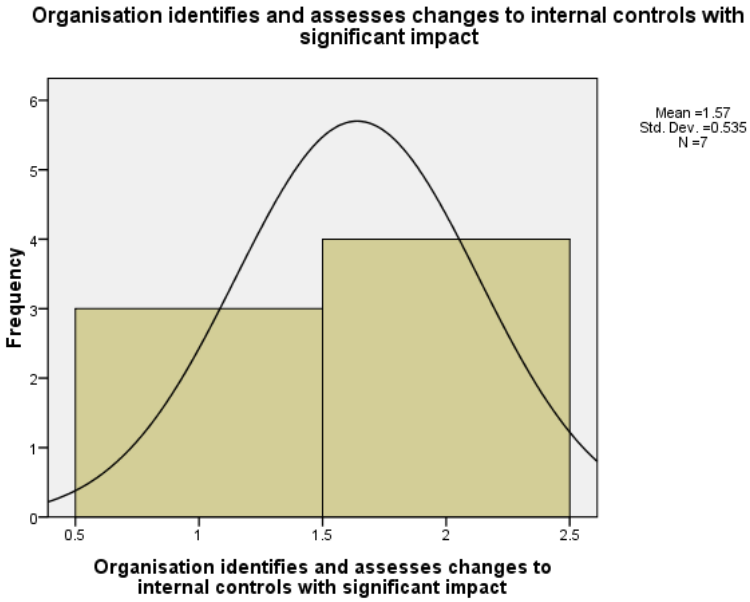
Financial and non-financial risk implications are considered on impact universally (mean = 1.29) and this response rate is commendable.

Histogram 2.13: Financial, operational and Compliance objectives specified with clarity



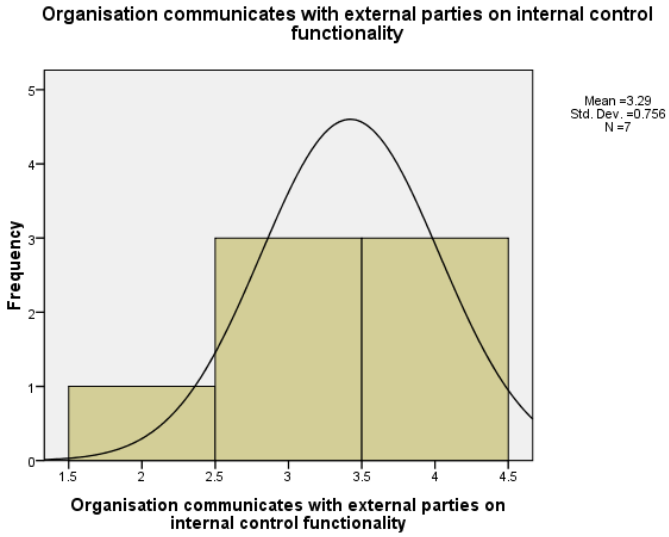
The mining organisations do not have specified strategic, financial operational and compliance objectives across the entity with sufficient clarity to identify risks as shown by 2 respondents who disagreed and 4 respondents who were unsure. Information communication might not be filtering throughout the organisations as intended by management as a result.

Histogram 2.14: Organisation identifies and assesses changes to internal controls with significant impact



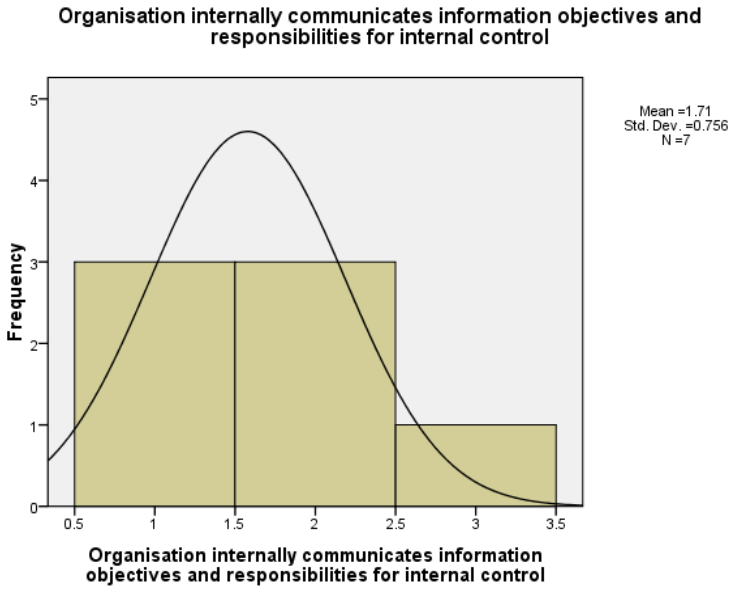
42.8% of the respondents strongly agreed that their organisation identifies and assess changes that could significantly impact the system of internal controls while 57.2% agreed to this risk factor which is commendable.

Histogram 2.15: Organisation communicates with external parties



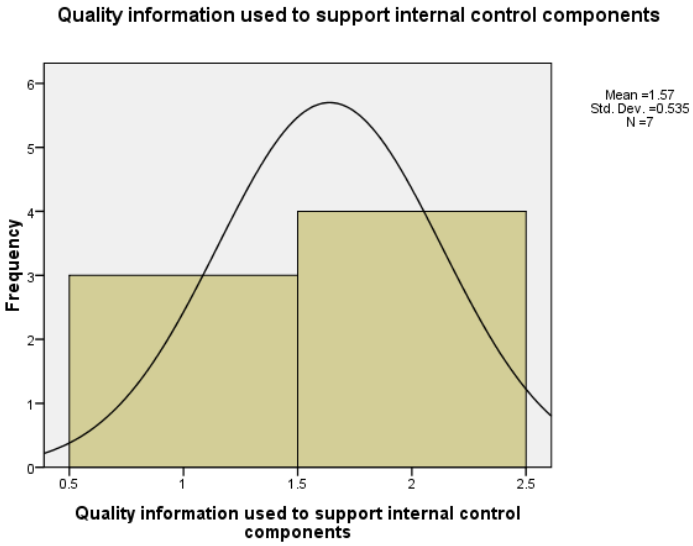
The organisation communicates with external parties regarding matters affecting the functionality of other components of internal control, a concerning observation for listed mining entities because the responses provided were “unsure or disagree” by 3 out 7 respondents in each case respectively. Disclosure of information to the primary users for relevant decision making might be lacking.

Histogram 2.16: Organisation communicates internally



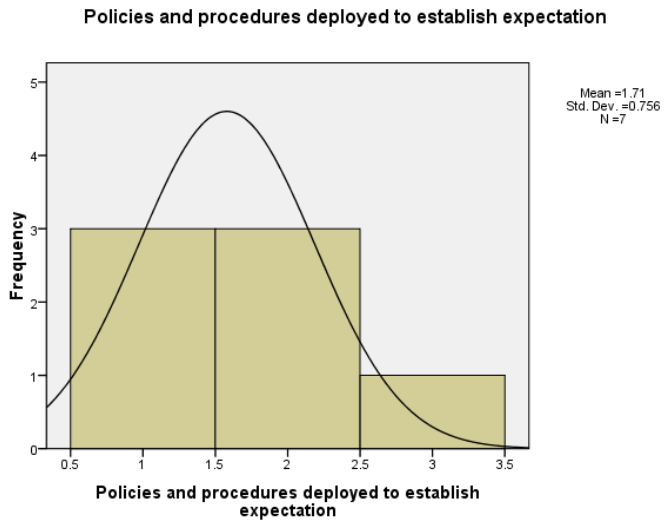
The organisation might however, been internally communicating information, including objectives and responsibilities for internal control as shown by only one respondent who was unsure.

Histogram 2.17: Quality information is used to support internal control components.



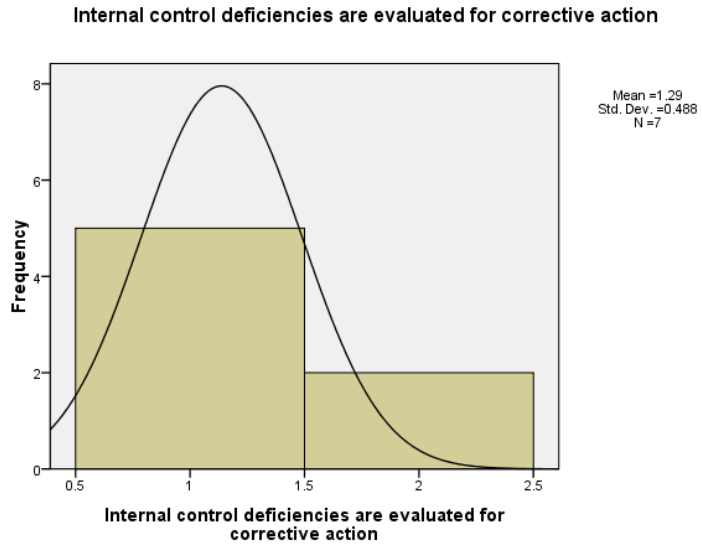
The mean of 1.57 reveal that respondents agreed that organisation obtains or generates and uses relevant, quality information to support the functioning of other components of internal control. 42.8% strongly agreed and the rest agreed in line with the researcher's expectation.

Histogram 2.18: Policies and procedures are deployed to establish expectation



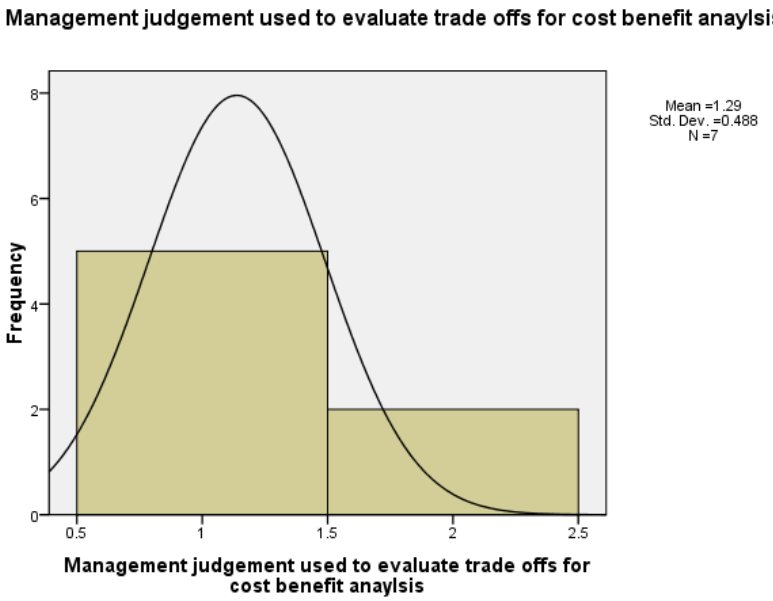
The mining organisations generally deploy control activities through policies and procedures that establish what is expected and put policies and procedures into action based on 42.8% of the respondents who strongly agreed and another 42.8% who agreed.

Histogram 2.19: Internal control deficiencies are evaluated for corrective action



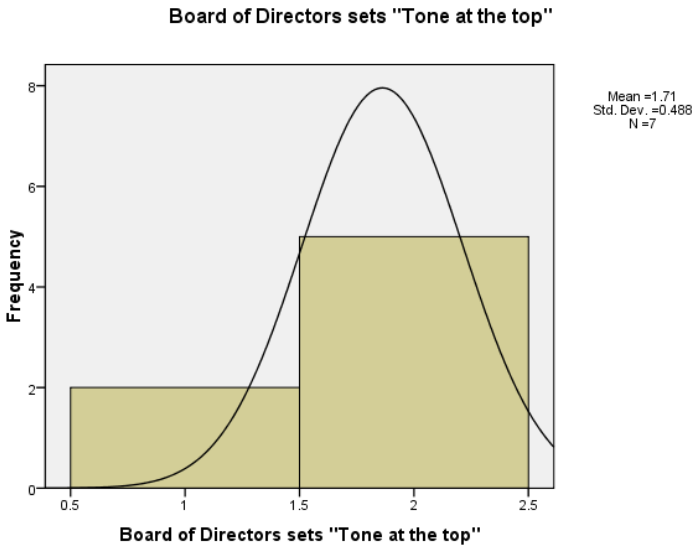
A total 71.4% of respondents strongly agreed their organisations evaluates and communicates internal control deficiencies in a timely manner to those parties responsible for taking corrective action, including senior management and the board of directors. The remainder agreed and this is commendable for the risk factor in question.

Histogram 2.20: Management judgement used to evaluate trade-offs for cost benefit analysis



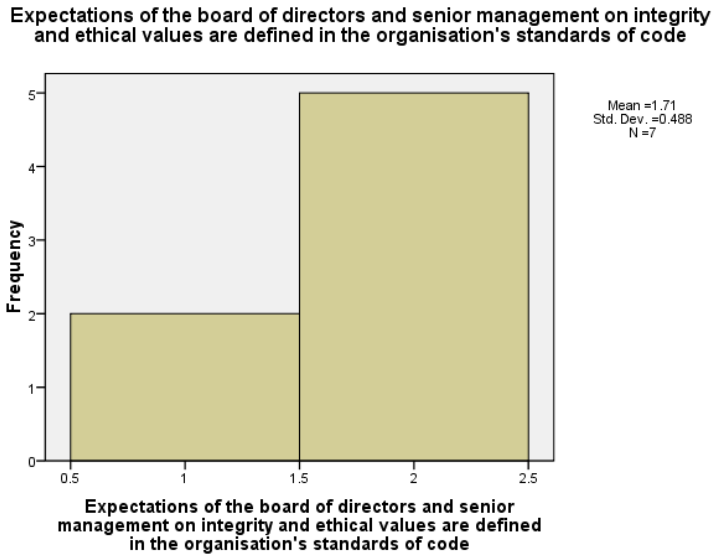
One respondent (14.7%) was unsure, four respondents strongly agreed (57.1%) that management exercises judgement in assessing the trade-offs between the cost of achieving perfection and the benefits of seeking to operate at various lower levels of performance.

Histogram 2.21: Board of Directors sets the "tone at the top"



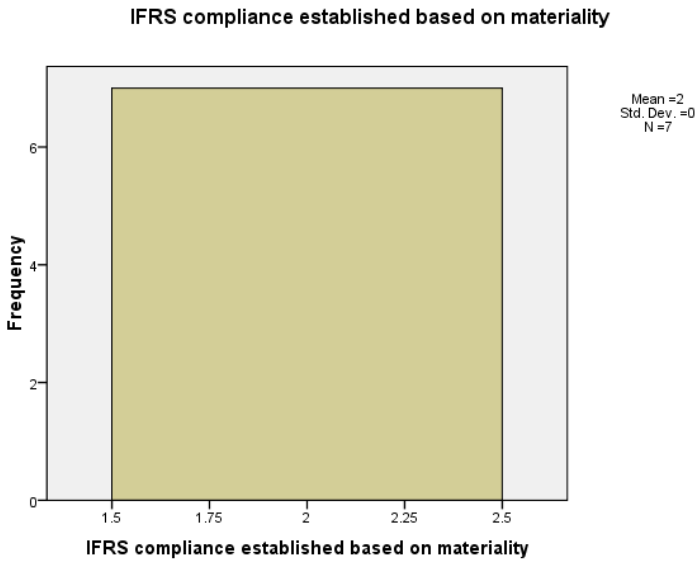
The board of Directors and management "Sets the tone at the top" according to all respondents who agreed with a mean of 1.71 indicating that mining entities have responsible management oversight role in risk management.

Histogram 2:22: Board expectations concerning integrity and ethical values



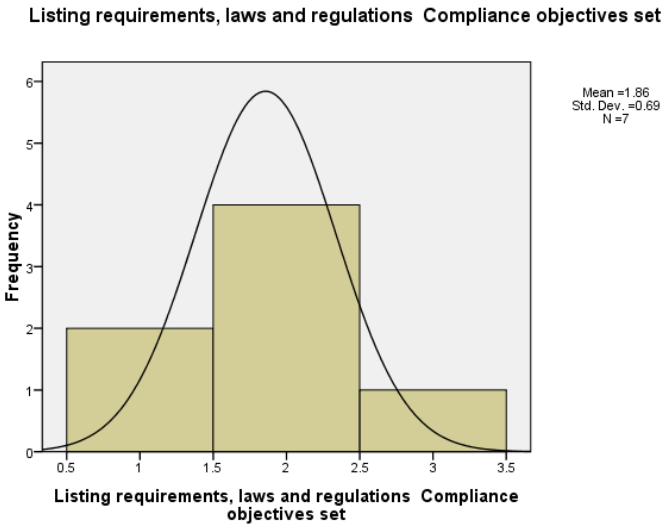
71.4% agreed and the remainder strongly agreed that the expectations of the board of directors and senior management concerning integrity and ethical values are defined in the organisation's standards of conduct. This internal control indicator shows a perception of management awareness of risks that matter to their organisations.

Histogram 2.23: IFRS compliance established based on materiality



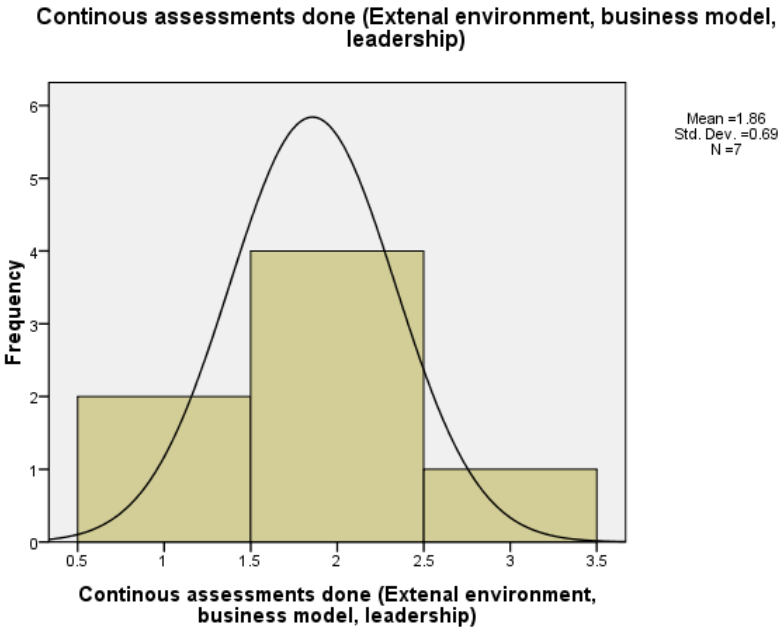
All seven respondents agreed 100% that all external financial reporting objectives comply with applicable International Financial Reporting Standards (IFRS), considers materiality and reflects organisational activities.

Histogram 2.24: Listing requirements, laws and regulations compliance objectives set



Compliance objectives reflects adherence to listing requirements, external laws and regulations for all the mining entities surveyed based on 85.7% responses that are in agreement to this internal control indicator.

Histogram 2:25: Continuous assessments conducted



The organisation assesses changes in external environment, business model and leadership that could significantly impact on the system of internal controls. This has been confirmed by all respondents (mean 1.86) with 57.1% agreed and 28.5% strongly agreed.

Personnel capacity available to implement the risk management frameworks (n=7)

Table 3.0 Raw data

RESPONDENT	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
A	3	2	3	4	4	3	2	2
B	4	3	3	4	4	2	4	3
C	3	3	3	4	4	3	3	4
D	3	3	3	3	4	3	4	3
E	3	4	2	3	4	2	4	3
F	4	4	4	4	3	3	4	4
G	3	2	3	4	3	2	3	5

Key	
1=	Strongly Agree
2=	Agree
3=	Unsure
4=	Disagree
5=	Strongly Disagree

Table 3.0 above shows the raw data obtained from the respondents who completed the Likert scale questions. Table 3.1 below shows a summary of the results with regards personnel capacity available at the mining entities to implement risk management frameworks.

Table 3.1 Summary Results

Question	**Feedback Outcome**
1. While the boards of Directors has ultimate responsibility, the ownership of risks must reside with management at lower levels.	Unsure
2. Internal auditors have a role to play given their expertise and independence.	Unsure
3. You recommend a split of the internal audit function reporting to Audit Committee and risk management function with a dedicated Chief Risk officer(s)	Neither agree nor disagree
4. Audit committees are increasingly taking on risk ownership.	Neither agree nor disagree
5. There is doubt about the extent of audit committee/internal audit collaboration in practice.	Neither agree nor disagree
6. Everyone in an entity has responsibility for enterprise risk management	Unsure
7. The Chief Executive officer is ultimately responsible for risk management and should assume ownership.	Neither agree nor disagree
8. Other managers and professional staff support the organisation's risk management philosophy, promote compliance with its risk appetite and manage risks within their spheres of responsibility.	Disagree

The obsrvation with regards the likert scale questionnaires reveal that most respondents were neiither agreed nor disagreed to 4/7 of the questions (57.1%); 3/7 were unsure 42.8% and the rest disagreed to the notion that personnel capacity was available to implement the risk management framwork in their various mining organisations during the investigation period.

Other factors for example bias towards feedback comments or staff shortgages can be atrributed to such results results in the opinion of the researcher.

Best practice risk management trends – board oversight (n=7)

Table 4.0 Raw data

RESPONDENT	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
A	3	2	3	4	2	3	2	2	3	4	2	1	3	1	1
B	2	4	1	3	4	3	4	4	2	3	2	2	3	2	1
C	3	3	3	3	2	2	3	2	2	3	3	2	2	2	2
D	3	3	2	3	2	4	3	3	2	2	2	1	2	3	2
E	4	5	2	3	2	2	4	3	4	2	1	1	3	4	3
F	1	3	3	1	3	3	3	3	4	3	1	1	4	1	3
G	3	2	2	2	2	2	2	2	2	3	1	1	4	5	1

Key	
1=	Strongly Agree
2=	Agree
3=	Unsure
4=	Disagree
5=	Strongly Disagree

Table 4.0 above shows the raw data from respondents who were asked feedback on each risk oversight activity their organisation's board of directors would perform. A detailed analysis of each response to the risk oversight activities is narrated below.

Board's approval of the enterprise level statement of risk appetite

57.1% of the responsents were unsure if approval of ornganisation level risk appetite was an activity performed by their board. 14.3% (1/7) reponded that they strongly agreed, agreed and disgareed respectively. As a result there is no one distinct view point that suggests a strong support in favour of the board.

Board's review of all risk management reports on all risks

The risk oversight activity for the review of regular risk management reports on the range of risks facing the organization was strongly agreed by two respondents (28.6%) while three were unsure (42.8%) leaving one who disagreed and another who strongly disagreed thereby different views coming out of the study.

Board's review and approval of ERM policy or framework

The board's function on this risk management activity showed that 3/7 (42.8%) of the respondents were unsure, followed by 2/7 (28.6%) who agreed. One respondent diagreed and another one strongly disagreed. As a result, the study reveals that diferent mining organisations approach this activity differently.

Board's review and approval of the formal risk governance framework

57.1% of the respondents were unsure (4/7) of their board's role in the review and approval of the formal risk governance framework. The other respondents individually responded differently (14.3%) thereby showing a lack of appreciation for this oversight activity by the organisation's board or board risk committee.

Board's review of corporate strategy alignment with risk profile

71.4% of the respondents agreed that their board has an oversight role to review corporate strategy alignment with risk profile, which is commendable.

Board's ability to monitor risk appetite utilisation

A proportion of 42.8% of the repondents agreed that this risk oversight activity was performed by their board. A similar proportion was unsure (3/7) and only one respondent disagreed on their board's ability to monitor risk apettite utilisation.

Board's ability to monitor new and emerging risks

42.8% of the feedback shows respondents who were unsure of their board's ability to monitor new and emerging risks. Another respondent disgareed making it a cause of concern despite the other 2/7 who agreed (only 28.6%).

Board's review of individual risk management policies

42.8% responded on strongly agreed and another 42.8% agreed to give a general overview that the review for individual risk management policies is done by the boards of the respective mining entities.

Board's incentive compensation plans to consider aligning risks to rewards

A commendable 57.1% agreed and an additional 14.3% were unsure as to incentive compensation plans being matched to the risk rewards systems. 28.6% of the respondents were in disagreement. This risk oversight activity is of concern to the researcher as transparency is one of the attributes for an effective risk management framework.

Board conducts executive sessions with the Chief Risk Officer

The majority of the respondents (57.1%) were in disagreement to this assertion that their board conducts executive sessions with the CRO despite the fact that 28.6% were in agreeement. Another 14.3% disagreed hence there is need for the mining entities to consider the CRO role at strategic level.

The board help in establishing and embedding a risk culture with open discussions

This risk overshight nactivity for the board was well supported by 85.7% of the respondents (42.8% agreed and 42.8% strongly agreed). Change management systems are being embraced by most mining organisations for value addition through openness and transparency.

Board's review of management steps to remedy non-compliance with ERM policy

The board's review of management steps to remedy non-compliance with ERM policy received 100% support from the respondents (71.4% strongly agreed and 28.6% agreed) meaning that risks are taken seriously by the mining concerns.

Board defines risk management reporting lines and independence

The role of the board in defining risk management reporting lines was agreed by 28.6% of the respondents whilst 42.8% were unsure. A further 28.6% disagreed for their organisations. The study shows that board responsibilities on this actvity are not clearly defined.

Board's review of the charters or management risk committees

57.1% (4 respondents) were in favour of this risk oversight activity mandated to the board (50% agreed and 50% strongly agreed). The indication is that there is a general awareness for the need of an effective board in dealing with risk management matters.

Board determines the need for the services of a Chief Risk Officer or equivalent

42.8% of the respondents strongly agreed that the risk oversight activity is necessary while 28.6% agreed thus giving a strong indication that a chief risk officer is needed for successful implementation of the risk management frame work for each mine.

Best practice risk management trends – risk appetite statement (n=7)

Table 5.0 Raw data

RESPONDENT	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
A	3	2	3	4	4	3	2	2
B	4	3	3	4	4	2	4	3
C	3	3	3	4	4	3	3	4
D	3	3	3	3	4	3	4	3
E	3	4	2	3	4	2	4	3
F	4	4	4	4	3	3	4	4
G	3	2	3	4	3	2	3	5

Key	
1=	Strongly Agree
2=	Agree
3=	Unsure
4=	Disagree
5=	Strongly Disagree

Below are feedback responses in table 5.1 as a summary to show how challenging was each factor administered in defining and implementing mining organisation's entity level risk appetite statements.

Table 5.1 Risk appetite statement statistical table

		Defining risk appetite for strategic risk	Defining risk appetite for reputational risk	Defining risk appetite for operational risk	Allocating risk appetite among business units	Translating individual risk appetite to quantitative units	Integrating stress testing results when defining risk appetite	Gaining business units participation in implementing risk appetite and risk limits	Complying with regulatory expectations regarding risk appetite
N	Valid	7	7	7	7	7	7	7	7
	Missing	0	0	0	0	0	0	0	0
Mean		3.29	3.00	3.00	3.71	3.71	2.57	3.43	3.43
Median		3.00	3.00	3.00	4.00	4.00	3.00	4.00	3.00
Mode		3	3	3	4	4	3	4	3

The average (mean = 3) observed was challenging on all the eight questions with questions 4, 5 and 7 topping the charts with a mode for very challenging.

Implementing risk appetite statements by defining the risk appetite for strategic risk was deemed challenging by the respondents with a mean of 3.29 and a mode of 3 (challenging). Defining reputational risk appetite was also rendered a challenge based on all the respondents' feedback. The argument can be developed that risk appetite is very subjective to define at strategic level hence the difficulties observed under the study.

Defining risk appetite for operational risk, allocating risk appetite among business units and translating individual risk appetite to quantitative units was scored a mean between 3 and 4 (challenging and very challenging) literally using cardinal approaches to quantify risk – certainly a challenge in risk management.

Integrating stress testing results when defining risk appetite, gaining business units' participation in implementing risk appetite and complying with regulatory expectations were also challenging based on feedback from the respondents (modes 3, 4 and 3 respectively implying challenging, very challenging and challenging). More research might be necessary to go to the root of why the feedback for listed mining entities was deemed challenging.

Best practice risk management trends – risk management and response (n=7)

Table 6.0 Raw data

RESPONDENT	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13
A	3	2	3	4	2	3	2	2	3	4	2	3	3
B	2	3	3	3	4	3	4	4	2	3	2	2	3
C	3	3	3	3	2	2	3	2	2	3	3	2	2
D	3	3	2	3	2	4	3	3	2	2	2	3	2
E	3	3	2	3	2	2	4	3	4	2	1	3	3
F	2	3	3	3	3	3	3	3	4	3	3	4	4
G	3	2	2	2	2	2	2	2	2	3	4	4	4

Key	
1=	No challenge at all
2=	Not challenging
3=	Challenging
4=	Very Challenging
5=	Extremely challenging

Frequency Table 6.1: Results on risk management response – best practices

Statistics for best practice trends – risk management response														
		Increasing regulatory requirements and expectations	Risk information systems and technology infrastructure	Risk data	Establishing and embedding a risk culture across the organisation	Identifying and managing new and emerging risks	Attracting and retaining risk management professionals with required skills	Attracting and retaining skilled risk management professionals	Aligning risk management to compensation incentives	Securing adequate budget and resources	Collaboration between business units and risk management function	Active involvement of senior management	Collaboration between risk management function and other functions	Active involvement of Board of Directors
N	Valid	7	7	7	7	7	7	7	7	7	7	7	7	7
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		2.71	2.71	2.57	3.00	2.43	2.71	3.00	2.71	2.71	2.86	2.43	3.00	3.00
Median		3.00	3.00	3.00	3.00	2.00	3.00	3.00	3.00	2.00	3.00	2.00	3.00	3.00
Mode		3	3	3	3	2	2[a]	3	2[a]	2	3	2	3	3

The statistics in the frequency table 6.1 above show that increasing regulatory requirements and expectations, risk information systems and technology infrastructure, risk data, establishing and embedding a risk culture across the organisation, attracting and retaining management professionals with required skills, collaboration between business units and risk management function, and active involvement of boards of directors all have a mode and median of 3 (challenging) based on feedback from respondents.

These attribute point out to the fact that best practice in risk management and response is not yet at the level the organisations require. The researcher is of the opinion that there is a gap between expectation and reality when it comes to risk management framework walking the talk. However, identifying and managing new and emerging risks; attracting and retaining skilled risk management professionals; aligning risk management to compensation incentives; securing adequate budget and resources; active involvement of senior management; and collaboration between risk management function and other functions was given a mode of 2 (not challenging by the respondents). The results indicate that a mean of 2 (not challenging) to a mean of 3 (challenging) illustrate the strides taken by the mining organisations to respond to leading practice trends in risk management response. The practice might be growing to maximise achievement of strategic goals due to the value addition that come as a result of managing risks.

Best practice risk management trends – stress testing (n=7)

Table 7.0 Raw data

RESPONDENT	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
A	3	2	3	4	2	3	2	2	3	4	2	1	3	1	1
B	2	4	1	3	4	3	4	4	2	3	2	2	3	2	1
C	3	3	3	3	2	2	3	2	2	3	3	2	2	2	2
D	3	3	2	3	2	4	3	3	2	2	2	1	2	3	2
E	4	5	2	3	2	2	4	3	4	2	1	1	3	4	3
F	1	3	3	1	3	3	3	3	4	3	1	1	4	1	3
G	3	2	2	2	2	2	2	2	2	3	1	1	4	5	1

Key	
1=	Very great extent
2=	Great extent
3=	Some extent
4=	Little extent
5=	Very little extent

Stress testing measures projections on financial distress (financial performance) of mines as huge capital investment outlays are expended in year zero, hence financial performance measures were administered to respondents targeting code 4 (financial managers) with a view to see the extent of using stress testing as part of risk management framework. The tables below show the study results.

Table 7.1: Reporting to the board

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
VERY LITTLE EXTENT	1	14.3	14.3	14.3
LITTLE EXTENT	1	14.3	14.3	28.6
SOME EXTENT	4	57.1	57.1	85.7
GREAT EXTENT	1	14.3	14.3	100.0
VERY GREAT EXTENT	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

14.3% of the respondents agreed to a great extent that board and senior management involvement in the stress testing program is essential for its effective operation in their mining entities. 57.1% of the respondents agreed to some extent meaning the board has ultimate responsibility to be aware of the key findings from stress tests as it delivers its mandate. The other respondents at least acknowledged the use of stress testing result at 14.3% to a little extent and 14.3% of the respondents to a very little extent.

Table 7.2: Reporting to senior management

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
VERY LITTLE EXTENT	0	0.00	0.00	0.00
LITTLE EXTENT	2	28.6	28.6	28.6
SOME EXTENT	3	42.9	42.9	71.4
GREAT EXTENT	1	14.3	14.3	85.7
VERY GREAT EXTENT	1	14.3	14.3	100.0
TOTAL	7	100.0	100.0	

Reporting stress resting results to senior management was agreed to a very great extent by 14.3% of the respondents, agreed to a great extent by another 14.3% and to some extent by 42.9% of the respondents signalling management awareness for this assertion as part of best practice tolls in risk management.

Table 7.3: Understanding the organisation's risk profile

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
VERY LITTLE EXTENT	1	14.3	14.3	14.3
LITTLE EXTENT	3	42.9	42.9	57.1
SOME EXTENT	3	42.9	42.9	100.0
GREAT EXTENT	0	0.00	0.00	0.00
VERY GREAT EXTENT	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

42.9 % agreed to some extent that senior management should be able to identify and clearly articulate the mining entity's risk appetite and understand the impact of stress events on risk profile of the institution. Another 42.9% agreed to a little extent. Thus, management buy in of stress testing results as part of a risk management model might still require time to match best practice trends based on the study results obtained.

Table 7.4: Regulator enquiries

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
VERY LITTLE EXTENT	1	14.3	14.3	14.3
LITTLE EXTENT	1	14.3	14.3	28.6
SOME EXTENT	4	57.1	57.1	85.7
GREAT EXTENT	1	14.3	14.3	100.0
VERY GREAT EXTENT	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

One responded agreed to stress testing results being used to a great extent to enable the mining organisation move from, regulatory burden to strategic capability and survive negative economic environmental factors that give rise to financial implications. However, 57.1% of respondents agreed to some extent thus this best practice is far from reality of being implemented.

Table 7.5: Assessing adequacy of regulatory capital

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
VERY LITTLE EXTENT		0.00	0.00	0.00
LITTLE EXTENT	5	71.4	71.4	71.4
SOME EXTENT	1	14.3	14.3	85.7
GREAT EXTENT	1	14.3	14.3	100.0
VERY GREAT EXTENT	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

14.3% agreed to a great extent, while another 14.3% agreed to some extent that their organisations should include scenarios assessing the size and soundness of such vehicles relative to its own financial, liquidity and regulatory capital positions. Another 71.4% agreed to a little extent implying that if adopted, this analysis should include structural, solvency, liquidity and other risk issues required by best practice.

Table 7.6: Defining capital capacity requirements

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
VERY LITTLE EXTENT	0	0.00	0.00	0.00
LITTLE EXTENT	3	42.9	42.9	42.9
SOME EXTENT	3	42.9	42.9	85.7
GREAT EXTENT	1	14.3	14.3	100.0
VERY GREAT EXTENT	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

42.9% of the respondents agreed to a little extent that stress testing should form an integral part of their mining organisation's internal capital management policy. Another 42.9% agreed to some extent hence where a rigorous, forward-looking stress testing program is used to identify severe events including changes in market conditions that could adversely impact the mine; risk management frameworks will embrace leading practice trends.

Table 7.7: Defining risk appetite

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
VERY LITTLE EXTENT	0	0.00	0.00	0.00
LITTLE EXTENT	2	28.6	28.6	28.6
SOME EXTENT	3	42.9	42.9	71.4
GREAT EXTENT	2	28.6	28.6	100.0
VERY GREAT EXTENT	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

71.6% of the respondents agreed that senior management should be able to identify and clearly articulate the institution's risk appetite and understand the impact of stress events on the risk profile of their mine (28.6% agreed to a little extent and 42.9% agreed to some extent respectively). Thus, decision making can be enhanced if the results of the study continue to grow in the positive direction.

Table 7.8: Strategy and business planning

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
VERY LITTLE EXTENT	0	0.00	0.00	0.00
LITTLE EXTENT	3	42.9	42.9	42.9
SOME EXTENT	3	42.9	42.9	85.7
GREAT EXTENT	1	14.3	14.3	100.0
VERY GREAT EXTENT	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

To a little extent (42.9%), stress testing should be embedded in enterprise wide risk management. Another 42.9% agreed to some extent that stress testing program playing an important role in facilitating the development of risk mitigation or contingency plans across a range of stressed conditions for planning and evaluating strategic choices in longer term business planning.

Table 7.9: Assessing concentrations and setting limits

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
VERY LITTLE EXTENT	0	0.00	0.00	0.00
LITTLE EXTENT	4	57.1	57.1	57.1
SOME EXTENT	1	14.3	14.3	71.4
GREAT EXTENT	2	28.6	28.6	100.0
VERY GREAT EXTENT	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

57.1% of the respondents confirmed application of stress testing in risk identification and control to assess concentrations and interactions between risks in stress environments that might otherwise be overlooked. To some extent 14.3% of the respondents gave feedback and this might be an indicator that stress testing programs might be in the doldrums of being adopted.

Table 7.10: Assessing adequacy of economic capital

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
VERY LITTLE EXTENT	0	0.00	0.00	0.00
LITTLE EXTENT	2	28.6	28.6	28.6
SOME EXTENT	4	57.1	57.1	85.7
GREAT EXTENT	1	14.3	14.3	100.0
VERY GREAT EXTENT	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

Due to capital investments outlays expended in mines, 57.1% of the respondents agreed to some extent, another 14.3% to a great extent that stress testing results are used to evaluate adequacy of economic capital for their mining organisations.

However, the 28.6% who agreed to a little extent give evidence that stress testing might not be used at all in formal capacity within mining organisations.

Table 7.11: Rating agencies enquiries

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
VERY LITTLE EXTENT	3	42.9	42.9	42.9
LITTLE EXTENT	3	42.9	42.9	85.7
SOME EXTENT	1	14.3	14.3	100.0
GREAT EXTENT	0	0.00	0.00	0.00
VERY GREAT EXTENT	0	0.00	0.00	0.00
Total	7	100.0	100.0	

Rating agencies are not being used as a result of stress testing as shown by 42.9% who agreed to a very little extent, 42.9% to a little extent and 14.3% to some extent. This leading practice concept has also been exposed as not being used.

Table 7.12: Deciding on hedging and other risk mitigating strategies

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
VERY LITTLE EXTENT	5	71.4	71.4	71.4
LITTLE EXTENT	2	28.6	28.6	100.0
SOME EXTENT	0	0.00	0.00	0.00
GREAT EXTENT	0	0.00	0.00	0.00
VERY GREAT EXTENT	0	0.00	0.00	0.00
Total	7	100.0	100.0	

71.4% confirmed to a very little extent that stress testing results were used to decide on hedging and other risk mitigating strategies thus there might be no active markets in Zimbabwe to trade such instruments based on the feedback received.

Table 7.13: Allocating capital to businesses and products

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
VERY LITTLE EXTENT	0	0.00	0.00	0.00
LITTLE EXTENT	2	28.6	28.6	28.6
SOME EXTENT	3	42.9	42.9	71.4
GREAT EXTENT	2	28.6	28.6	100.0
VERY GREAT EXTENT	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

In table 7.13 above, 71.4% of the respondents were of the view that stress testing results are not used for allocating capital to businesses and products. Unlike financial institutions, mining organisations might not have embraced this leading practice concept.

Table 7.14: Pricing products or benefits

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
VERY LITTLE EXTENT	2	28.6	28.6	28.6
LITTLE EXTENT	2	28.6	28.6	57.1
SOME EXTENT	1	14.3	14.3	71.4
GREAT EXTENT	1	14.3	14.3	85.7
VERY GREAT EXTENT	1	14.3	14.3	100.0
TOTAL	7	100.0	100.0	

Table 7.14 show results that stress testing is generally not used to make pricing for products or benefits as confirmed by 28.6% of the respondents who agreed to a very little extent, another 28.6% who agreed to a little extent and 14.3% to some extent summing up a total of 71.4%.

Mining exploration work involves a lot of metal processes hence does not speak well to pricing of products.

Table 7.15: Merger and acquisition decisions

VALID	FREQUENCY	PERCENT (%)	VALID PERCENT (%)	CUMULATIVE PERCENT (%)
VERY LITTLE EXTENT	3	42.9	42.9	42.9
LITTLE EXTENT	2	28.6	28.6	71.4
SOME EXTENT	2	28.6	28.6	100.0
GREAT EXTENT	0	0.00	0.00	0.00
VERY GREAT EXTENT	0	0.00	0.00	0.00
TOTAL	7	100.0	100.0	

The results of stress testing are used for mergers and acquisition decisions to some extent (28.6% of the respondents) and largely to a very little extent (42.9%) showing that the financial risks are not actively participated in by the board for the mining sector.

4.4 Chapter Summary

There is ample evidence suggest that all the risk management categories under study made use of risk management frameworks with high level management oversight role for the listed mining entities. Several best practice trends are missing and have been highlighted including the lack of adopting stress testing results for risk management purposes. The most disturbing finding, however, is lack of ICT support for continuous improvement in risk management awareness and applicability.

This chapter presented the research findings and discussion of the results. These findings form the basis upon which conclusions and recommendations of the study are made. The main objective of this study was to evaluate risk management practices on performance of listed mining entities in Zimbabwe.

The next chapter present the summary of the research findings vis-à-vis the proposition, conclusions and recommendations of the study.

Chapter 5

Findings, Conclusions and Recommendations

5.0 Introduction

This chapter presents the conclusions and recommendations of the study. It also presents areas of further study in risk management.

5.1 Chapter summaries

Chapter 1 started by looking at the background of the study where an investigation of risk management practices on the performance of listed mining entities was done. The researcher highlighted the problem that prompted the need to carry out the research, presented the main topic, conceptual framework, research objectives, significance of study, delimitations and limitations of the study in this chapter.

The literature findings in chapter 2 revitalised the argument that instead of waiting for best practices or further guidance, organisations shall put more effort in developing their individual risk management practice framework. The research progressed with a focus on listed mining entities in Zimbabwe to confirm the assertions made and emphasised the justification for carrying out the research project.

Chapter 3 provided a synopsis of the research methodology that was used in conducting the research citing in detail the research philosophy, research design adopted with justifications. It further outlined the merits and demerits of research tools used. The research population and sample selected were highlighted and justified for the purpose of the research.

Chapter 4 showed that there is significant evidence that the risk management frameworks studied for the listed mining entities requires a high level management oversight role. The results also showed that best practice trends are missing and have been highlighted for risk management awareness and applicability to enhance operational, financial, strategic and compliance goals in measuring performance. The chapter presented the research findings and discussion of the results upon which recommendations of the study are made.

5.2 Major Findings

- The results show agreement that listed mining organisations in Zimbabwe have risk management frameworks that works to create a control culture where risk management is embedded within the organization as part of daily activities. The embedded risk management frameworks are largely based on the COSO ERM framework that require the identification and evaluation of all significant risks of the entity's business.
- It was observed that risk management frameworks are implemented with a bias towards operational and compliance risks with little emphasis on other strategic and financial risk factors. It was further observed that controls designed and operating in the mining entities lack the management of risk-related information by boards in their oversight role or the inability to process the available risk-related information.
- The study also established that many organisations are not capable to implement an integrated risk management framework and still handle the risk management process as separate silos as there are lots of organisational hurdles to overcome that include Information Communication Technology (ICT) support and consider an integrated approach to be a highly sophisticated task with no material benefit, but a high amount of costs.
- It was also found out that effective risk management practices are difficult to efficiently implement because of complexities around the composition of the system here in Zimbabwe, including but not limited to the subjectivity involved in trying to identify suitable measures, the human skills flight factor and the heavily regulated industry with an ever changing complex environment.
- Finally, the study also observed that leading practice trends from the developed countries are yet to be fully embraced by the Zimbabwean corporate entities.

5.3 Conclusion

As a result, the study was successful and the researcher has put forward a proposition that there is no universal approach to managing risks for mining entities in Zimbabwe.

The research findings validated this proposition because of the absence of a unique generally accepted model of risk management practice. Organisations should not anticipate an overall step by step direction or any best practices. Rather every organisation faces different risks so every ERM framework need to be different with a sceptical questioning approach in challenging every assumption used.

Consequently, a general risk management framework suitable for any kind of organisation seems to be impossible and mining entities should put more effort in developing their individual framework looking at risks from a universe perspective and not hesitate to adapt their system and establish their own best practice.

5.4 Recommendations

- Based on the research findings, the researcher recommends that mining entities should establish a risk universe approach to risk management which provides a comprehensive view of risks that promotes an aligned view of risks across all parts on the business.
- Viewing risks from a global approach will allow those charged with governance identify key business risks and develop an organisation specific risk universe reviewed from time to time to enables management, risk managers and other assurance providers have a common view of risks.
- The researcher recommends that a risk universe approach may be used to analyse and categorise risks and develop risk management strategies specific to the organisation's processes and provides room for continuous improvement.
- The researcher also recommends the engagement of a Chief Risk Officer (CRO), a very critical and technical high level management who can develop and implement universal risk management methodologies to oversee risk maturity at strategic level. The CRO can meet regularly with board of directors or board risk and audit committees as well as executive management for making sure it is establishing to steer the organisation forward.

5.5 Areas for further study

This study looked into evaluating the risk management practices on the performance of corporates for listed mining entries in Zimbabwe. However, future work may be needed to examine the impact of risk assessment methodologies on cultivating firm value. Risk management approaches are all based on risk assessment methodologies and of late the risk based approaches to auditing have mushroomed focusing on the 'risk that matter' with behavioural insights unlike the traditional cardinal view of assessing the like hood of occurrence and financial impact of risks materialising.

Other research paths could include evaluating risk outcomes experienced by different top and middle management levels within the organization. Others might expand this work by investigating the risk management framework experienced by senior executives in blue chip organisations without focusing on one industry.

Research is also encouraged specifically on warning signals against reportable irregularities and corporate scandals and how they are interpreted and addressed (or not) by those charged with governance.

5.6 Chapter summary

Devoid of doubt, risk management is a continuous struggle for mining entities. This research has attempted to evaluate risk management practices on the performance of corporates – a case of listed mining entities in Zimbabwe, by embracing a more strategic perspective of looking at risk management models, by observing the moderating (management's culture, risk appetite) and mediating variables (skills, resources, expertise) on performance of entities. Collectively, this academic detail has been considered to develop a new thinking towards risk management rather than focus on the reliance and over reliance of the available and complex ERM models being adopted by most corporates.

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Appendices

Appendix 1: Approval and introductory letter

Midlands State University
Faculty of Commerce
Department of Accounting
P. BAG 9055,
Gweru.

2 November 2017

Dear Sir or Madam

RE: SEEKING AUTHORITY TO CONDUCT RESEARCH

[Recipient's name]
[Company name]
[Address]
[Address]

My name is Gladstone Tyoka, a student in the final year studying towards attaining the Master of Commerce in Accounting Degree, at the Midlands State University.

I am carrying out an academic research entitled, **"Evaluating risk management practices on performance of corporates: A case of listed mining entities in Zimbabwe,"** in partial fulfillment of the award of the Master of Commerce in Accounting Degree Programme for the class of 2017.

I am seeking your approval to carry out the research in your listed organization. In addition, assistance will be required in the form of your views and opinions in relation to my research topic.

All information will be treated with confidentiality, not disclosing information acquired as a result of professional and academic business relationships without proper and specific authority or to my personal advantage or the advantage of third parties including in a social environment,

being alert to the possibility of inadvertent disclosure, particularly to a close business associate or a close or immediate family member.

The research is strictly for academic purposes only.

Your assistance will be greatly appreciated.

Yours faithfully,

Gladstone Tyoka – Registration number R162253C (Researcher.)

Please complete your details below in the spaces provided if you approve.

Company …….

Address …….

Permitted by …….

Designation …….

Signature …… Date …….. ……..

Company Stamp:

Appendix 2: Key stakeholder interview guide and questions

The following interview guide was used with key staff members of listed mining entities in Zimbabwe to determine what they found concerning the research objectives. The Interview guide contained an introduction (including informed consent), a set of questions, and closing comments.

Summary of Introductory Key Components: • Thank you • Name of researcher • Purpose • Confidentiality • Duration • How interview will be conducted • Opportunity for questions • Signature of consent	I want to thank you for taking the time to meet with me today. My name is Simukai Gladstone Tyoka and I would like to talk to you about your experiences on the risk management practices in your organization and how they affected performance. Specifically, as one of the components of the overall research methods, I am assessing the risk management practices adopted in your organization in order to capture lessons that can be used in future interventions. The interview should take less than an hour. I will be taping the session because I don't want to miss any of your comments. Although I will be taking some notes during the session, I can't possibly write fast enough to get it all down. Because we're on tape, please be sure to speak up so that we don't miss your comments. All responses will be kept confidential. This means that your interview responses will only be used for the purposes of my academic research and I will ensure that any information included in the final report does not identify you as the respondent. Remember, you don't have to talk about anything you Are there any questions about what I have just explained? Are you willing to participate in this interview? _____ _____ _____ Interviewee Witness Date

Questions • No more than 15 open-ended questions • Ask factual before opinion • Use probes as needed	1) What risk management frameworks have been applied to the mining sector? 2) How have the risk management frameworks been implemented in the sector? 3) What controls are in place over the risk management frameworks? 4) What challenges have been experienced in the implementation of the frameworks? 5) What personnel capacity is available to implement the frameworks? 6) What best practice can be recommended for the mining sector? 7) What recommendations do you have for future efforts such as these?
Closing Key Components: • Additional comments • Next steps • Thank you	Is there anything more you would like to add? I'll be analysing the information you and others gave me and submitting a draft report to the organization in one month. I'll be happy to send you a copy to review at that time, if you are interested. Thank you for your time.

Appendix 3: Risk Management Frameworks applied to the mining sector

Risk Management Process Self-Assessment to identify the risk management frameworks that have been applied to the mining sector, ascertain the level of risk management frameworks implemented in the sector, establish controls designed and operating on the established risk management frameworks and to identify challenges experienced in the implementation of the risk management frameworks.

Respondent A: _____

Organization A: _____

Designation: _____

Role in your department: _____

Please complete the following self-assessment questions if your organization has implemented a risk management framework (e.g. enterprise wide risk management (ERM) - COSO Cube ERM or the Governance, Risk and Compliance (GRC) model; ISO 31000: 2009, Risk Management – principles and guidelines; KPMG ERM framework etc.

CATEGORY	**QUESTION**	**RESPONSE**				
		1 = STRONGLY AGREE	**2 = AGREE**	**3 = UNSURE**	**4 = DISAGREE**	**5 = STRONGLY DISAGREE**
PERSONNEL SKILLS AND COMPETENCIES.	1. Your qualifications are of significance to risk management.	○	○	○	○	○
	2. Years of experience are also significant to risk management effectiveness.	○	○	○	○	○
DETERMINE RISK SOURCES AND CATEGORIES.	3. Your organization has an approach to determining risk sources and categories.	○	○	○	○	○
	4. The organization has indicators that are used to identify and categorize risk sources.	○	○	○	○	○
DEFINE RISK PARAMETERS.	5. The organization has an approach to defining the parameters used to analyse and classify risks.	○	○	○	○	○
ESTABLISH A RISK	6. The organization has established a strategy to be	○	○	○	○	○

CATEGORY	QUESTION	RESPONSE				
		1 = STRONGLY AGREE	2 = AGREE	3 = UNSURE	4 = DISAGREE	5 = STRONGLY DISAGREE
MANAGEMENT STRATEGY.	used for risk management.					
	7. The organization has maintains a set of methods used for risk management.	○	○	○	○	○
IDENTIFY AND DOCUMENT THE RISKS.	8. The organization identifies and documents risks.	○	○	○	○	○
EVALUATE, CLASSIFY, AND PRIORITIZE RISKS.	9. The organization evaluates and classifies each identified risk using defined categories and parameters.	○	○	○	○	○
	10. The organization has determined risk categories by their relative priority.	○	○	○	○	○
DEVELOP RISK MITIGATION PLANS.	11. The organization has developed risk mitigation (handling) plans for the most important risks to the project, as defined by the risk management strategy.	○	○	○	○	○
IMPLEMENT RISK MITIGATION PLANS.	12. The organization monitors the status of each risk periodically.	○	○	○	○	○
	13. Risk and Audit Committee implements the risk mitigation (handling) plan as appropriate.	○	○	○	○	○
ESTABLISH AN ORGANIZATIONAL POLICY.	14. The organization has established an organizational policy for planning and performing the risk management process.	○	○	○	○	○
PLAN THE PROCESS.	15. The organization has established the requirements, objectives and plans for performing the risk management process.	○	○	○	○	○
PROVIDE RESOURCES.	16. The organization provides adequate resources for performing the planned process, developing the work products and providing the services for the risk management process.	○	○	○	○	○
ASSIGN RESPONSIBILITY.	17. The organization has assigned responsibility for performing the process, developing the work products, and providing	○	○	○	○	○

CATEGORY	QUESTION	RESPONSE				
		1 = STRONGLY AGREE	**2 = AGREE**	**3 = UNSURE**	**4 = DISAGREE**	**5 = STRONGLY DISAGREE**
	the services of the risk management process.					
TRAIN PEOPLE.	18. The organization has trained the people performing or supporting the risk management process as needed.	○	○	○	○	○
IDENTIFY AND INVOLVE RELEVANT STAKEHOLDERS:	19. The organization has identified and involved the relevant stakeholders of the risk management process as planned.	○	○	○	○	○
MONITOR AND CONTROL THE PROCESS.	20. The organization is monitoring and controlling the risk management process against the plan and taking appropriate corrective action.	○	○	○	○	○
OBJECTIVELY EVALUATE ADHERENCE.	21. The organization objectively evaluates adherence of the risk management process and the work products and services of the process to the applicable requirements, objectives, and standards, and address noncompliance.	○	○	○	○	○
REVIEW STATUS WITH HIGHER-LEVEL MANAGEMENT.	22. The organization reviews the activities, status, and results of the risk management process with management and resolve issues.	○	○	○	○	○
ESTABLISH A DEFINED PROCESS.	23. The organization has established and is it maintaining the description of a defined (standardized) risk management process.	○	○	○	○	○
COLLECT IMPROVEMENT INFORMATION.	24. The organization is collecting work products, measures, and improvement information derived from planning and performing the risk management process to support the future use and improvement of the organization's processes and process assets.	○	○	○	○	○
ENSURE CONTINUOUS PROCESS	25. The organization ensures continuous improvement of the risk management process	○	○	○	○	○

CATEGORY	QUESTION	RESPONSE				
		1 = STRONGLY AGREE	**2 = AGREE**	**3 = UNSURE**	**4 = DISAGREE**	**5 = STRONGLY DISAGREE**
IMPROVEMENT.	in fulfilling the relevant business goals.					
CORRECT COMMON CAUSE OF PROBLEMS.	26. The organization identifies and correct the root causes of defects and other problems in the risk management process.	○	○	○	○	○

Appendix 4: Controls designed and operating on the established risk management frameworks.

Please tick (✓) on the most appropriate response.

INTERNAL CONTROL INDICATOR	1 = STRONGLY AGREE	2 = SOMEWHAT AGREE	3 = NEITHER AGREE NOR DISAGREE	4 = SOMEWHAT DISAGREE	5 = STRONGLY DISAGREE
1. The COSO FRAMEWORK is easy to use.	○	○	○	○	○
2. The ERM FRAMEWORK is easy to use.	○	○	○	○	○
3. The ISO 31000 FRAMEWORK is easy to use.	○	○	○	○	○
4. Other Framework is easy to use (specify) _____	○	○	○	○	○
5. Controls are designed and operating on the established risk management framework(s)	○	○	○	○	○
6. Internal controls are effected by the board of directors, management and other personnel.	○	○	○	○	○
7. Internal controls are designed to provide reasonable assurance regarding the achievement of mining objectives.	○	○	○	○	○
8. The criteria used to assess the effectiveness of internal control system remain largely unchanged over the past 5 years.	○	○	○	○	○
9. The system of internal controls in place reflects the increased relevance of technology	○	○	○	○	○
10. The internal control framework has management buy in towards discussion of corporate governance concepts	○	○	○	○	○
11. Anti-fraud expectations are clearly outlined	○	○	○	○	○
12. Financial and non-financial risk implications are considered on impact universally.	○	○	○	○	○
13. The organisation specifies strategic, financial operational and compliance objectives across the entity with sufficient clarity to identify risks.	○	○	○	○	○
14. The organisation identifies and assess changes that could significantly impact the system of internal controls.	○	○	○	○	○
15. The organisation communicates with external parties regarding matters affecting the functionality of other components of internal control.	○	○	○	○	○
16. The organisation internally communicates information, including objectives and responsibilities for internal control.	○	○	○	○	○
17. The organisation obtains or generates and uses relevant, quality information to support the functioning of other components of internal control	○	○	○	○	○
18. The organisation deploys control activities through policies and procedures that establish what is expected that put policies and procedures into action.	○	○	○	○	○
19. The organisation evaluates and communicates internal control deficiencies in a timely manner to those parties responsible for taking corrective action, including senior management and the board of Directors.	○	○	○	○	○
20. Management exercises judgement in assessing the trade-offs between the cost of achieving					

INTERNAL CONTROL INDICATOR	1 = STRONGLY AGREE	2 = SOMEWHAT AGREE	3 = NEITHER AGREE NOR DISAGREE	4 = SOMEWHAT DISAGREE	5 = STRONGLY DISAGREE
perfection and the benefits of seeking to operate at various lower levels of performance.	○	○	○	○	○
21. The board of Directors and management "Sets the tone at the top".	○	○	○	○	○
22. The expectations of the board of directors and senior management concerning integrity and ethical values are defined in the organisation's standards of conduct.	○	○	○	○	○
23. All external financial reporting objectives comply with applicable International Financial Reporting Standards (IFRS), considers materiality and reflects organisational activities.	○	○	○	○	○
24. Compliance objectives reflects adherence to listing requirements, external laws and regulations.	○	○	○	○	○
25. The organisation assesses changes in: a. External environment b. Business model c. Leadership that could significantly impact on the system of internal controls.	○	○	○	○	○

Appendix 5: Personnel capacity available to implement the risk management frameworks.

Please tick (✓) on the most appropriate response.

ATTRIBUTE	1 = STRONGLY AGREE	2 = AGREE	3 = NEITHER AGREE NOR DISAGREE	4 = DISAGREE	5 = STRONGLY DISAGREE
a) While the boards of Directors has ultimate responsibility, the ownership of risks must reside with management at lower levels.	○	○	○	○	○
b) Internal auditors have a role to play given their expertise and independence.	○	○	○	○	○
c) You recommend a split of the internal audit function reporting to Audit Committee and risk management function with a dedicated Chief Risk officer(s)	○	○	○	○	○
d) Audit committees are increasingly taking on risk ownership.	○	○	○	○	○
e) There is doubt about the extent of audit committee/internal audit collaboration in practice.	○	○	○	○	○
f) Everyone in an entity has responsibility for enterprise risk management	○	○	○	○	○
g) The Chief Executive officer is ultimately responsible for risk management and should assume ownership.	○	○	○	○	○
h) Other managers and professional staff support the organisation's risk management philosophy, promote compliance with its risk appetite and manage risks within their spheres of responsibility.	○	○	○	○	○

Appendix 6: Best practice trends for risk management frameworks – board oversight.

Please tick (✓) on the most appropriate response.

WHICH OF THE FOLLOWING RISK OVERSIGHT ACTIVITIES DOES YOUR COMPANY'S BOARD OF DIRECTORS OR BOARD RISK COMMITTEE(S) PERFORM?	**1 = STRONGLY AGREE**	**2 = AGREE**	**3 = NEUTRAL**	**4 = DISAGREE**	**5 = STRONGLY DISAGREE**
1) Approve the enterprise-level statement of risk appetite.	○	○	○	○	○
2) Review regular risk management reports on the range of risks facing the organization.	○	○	○	○	○
3) Review and approve overall risk management policy and/or ERM framework.	○	○	○	○	○
4) Review and approve the organization's formal risk governance framework.	○	○	○	○	○
5) Review corporate strategy for alignment with the risk profile of the organization.	○	○	○	○	○
6) Monitor risk appetite utilization including financial and non-financial risk.	○	○	○	○	○
7) Monitor new and emerging risks.	○	○	○	○	○
8) Review individual risk management policies, e.g., for market, credit, liquidity, or operational risk.	○	○	○	○	○
9) Incentive compensation plans to consider alignment of risks with reward.	○	○	○	○	○
10) Conduct executive sessions with the chief risk officer (CRO).	○	○	○	○	○
11) Help establish and embed the risk culture of the enterprise; promote open discussions regarding risk.	○	○	○	○	○
12) Review management's steps to remediate any noncompliance with risk management policy.	○	○	○	○	○
13) Define risk management reporting lines and independence.	○	○	○	○	○
14) Review the charters of management-level risk committees.	○	○	○	○	○
15) Organisation need the services of a Chief Risk Officer or equivalent.	○	○	○	○	○

Appendix 7: Best practice risk management trends – risk appetite statement

Please tick (✓) on the most appropriate response.

HOW CHALLENGING IS EACH OF THE FOLLOWING IN DEFINING AND IMPLEMENTING YOUR ORGANIZATION'S ENTERPRISE-LEVEL RISK APPETITE STATEMENT?	**5 = EXTREMELY CHALLENGING**	**4 = VERY CHALLENGING**	**3 = CHALLENGING**	**2 = NOT CHALLENGING**	**1 = NO CHALLENGE AT ALL**
1. Defining risk appetite for strategic risk.	○	○	○	○	○
2. Defining risk appetite for reputational risk.	○	○	○	○	○
3. Defining risk appetite for operational risk.	○	○	○	○	○
4. Allocating the risk appetite among different business units.	○	○	○	○	○
5. Translating the risk appetite for individual risk types into quantitative risk limits.	○	○	○	○	○
6. Integrating stress testing results when defining risk appetite.	○	○	○	○	○
7. Gaining the active participation of business units in implementing the risk appetite and risk limits.	○	○	○	○	○
8. Complying with regulatory expectations regarding risk appetite.	○	○	○	○	○

Appendix 8: Best practice risk management trends – risk management and response

Please tick (✓) on the most appropriate response.

HOW CHALLENGING IS EACH OF THE FOLLOWING FOR YOUR COMPANY WHEN MANAGING RISK?	5 = EXTREMELY CHALLENGING	4 = VERY CHALLENGING	3 = CHALLENGING	2 = NOT CHALLENGING	1 = NO CHALLENGE AT ALL
1. Increasing regulatory requirements and expectations.	○	○	○	○	○
2. Risk information systems and technology infrastructure.	○	○	○	○	○
3. Risk data.	○	○	○	○	○
4. Establishing and embedding the risk culture across the enterprise.	○	○	○	○	○
5. Identifying and managing new and emerging risks.	○	○	○	○	○
6. Attracting and retaining risk management professionals with required skills.	○	○	○	○	○
7. Attracting and retaining business unit professionals with required risk management skills.	○	○	○	○	○
8. Aligning compensation and incentives with risk Management	○	○	○	○	○
9. Securing adequate budget and resources.	○	○	○	○	○
10. Collaboration between the business units and the risk management function.	○	○	○	○	○
11. Active involvement of senior management.	○	○	○	○	○
12. Collaboration between the risk management function and other functions.	○	○	○	○	○
13. Active involvement of the board of directors.	○	○	○	○	○

Appendix 9: Best practice risk management trends -Stress Testing

International Actuarial Association (2013) defined stress testing as a projection of the financial condition of a firm or economy under a specific set of severely adverse conditions that may be the result of several risk factors over several time periods with severe consequences that can extend over months or years.

Please tick (✓) on the most appropriate response.

TO WHAT EXTENT ARE THE RESULTS OF STRESS TESTS USED BY YOUR ORGANIZATION FOR EACH OF THE FOLLOWING PURPOSES?	**1 = VERY GREAT EXTENT**	**2 = GREAT EXTENT**	**3 =SOME EXTENT**	**4 = LITTLE EXTENT**	**5 = VERY LITTLE EXTENT**
1. Reporting to the board.	○	○	○	○	○
2. Reporting to senior management.	○	○	○	○	○
3. Understanding firm's risk profile.	○	○	○	○	○
4. Regulator inquiries.	○	○	○	○	○
5. Assessing adequacy of regulatory capital.	○	○	○	○	○
6. Defining/updating capital capacity requirements for risk.	○	○	○	○	○
7. Defining/updating risk appetite.	○	○	○	○	○
8. Strategy and business planning.	○	○	○	○	○
9. Assessing concentrations and setting limits.	○	○	○	○	○
10. Assessing adequacy of economic capital.	○	○	○	○	○
11. Rating agency inquiries.	○	○	○	○	○
12. Deciding on hedging and other risk mitigation strategies.	○	○	○	○	○
13. Allocating capital to businesses and products.	○	○	○	○	○
14. Pricing products or benefits.	○	○	○	○	○
15. Merger and acquisition decisions.	○	○	○	○	○