Project risk culture in a South African state-owned entity

FI Nemukula



orcid.org 0000-0001-9225-8401

Mini-dissertation accepted in partial fulfilment of the requirements for the degree *Master of Commerce in Applied Risk Management* at the North-West University

Supervisor: Prof H Zaaiman

Graduation: May 2020

PREFACE

This mini-dissertation is the final deliverable for the Master of Commerce (MCom) in Applied Risk Management. The mini-dissertation was written in article format and consists of three sections: Chapter 1: Introduction (Research project overview); Chapter 2: Article; and Chapter 3: Conclusions, limitations and recommendations (Reflection).

This mini-dissertation is the student's work. The student was responsible for the final concept, set up, execution of the research project and writing of the mini-dissertation. The members of the supervisory team contributed in an advisory and technical support capacity to study conception and design, analysis and interpretation of data and critical revision of the manuscript. The mini-dissertation was language edited before submission.

The main study supervisor gave the student permission to submit this mini-dissertation for examination.

ABSTRACT

The concept of risk culture came to the fore after the 2007/08 financial crisis, when it was identified as a leading contributor to instability in the financial industry. The available literature on risk culture tends to focus on the financial sector, with few risk-culture-specific articles published on non-financial institutions such as public organisations; and none could be found on project risk culture in South African state-owned entities (SOEs). The objective of this study was to explore the perceptions of project team members of aspects related to project risk management in a South African SOE, using a risk culture indicator (RCI) model to structure the research. The research question for this study was therefore: "How do project team members perceive project risk culture in this SOE?" Semi-structured face-to-face interviews were conducted with a sample of 15 participants whose roles require project implementation decision-making in the organisation. The results of the study indicated that project team members rely on experience and information from a panel of experts and consultants in order to include project risks when making project-related decisions. Interviewees suggested that the entity's project risk management process should be improved to ensure that the risk-related information documented, as a result of the internal risk management process, is relevant and of quality to assist with project decision-making. Four indicators – risk-based incentives, communication, challenge and risk accountability – did not feature in the participants' responses, and attention to these indicators may also assist with improving the entity's project risk culture. Overall, this study contributes to the understanding of the perceived project risk culture within the organisation and exemplifies a novel research approach for other researchers interested in conducting project risk culture studies.

Keywords: risk culture, project risk culture, project risk management, construction projects, public sector, risk culture indicator model

ACKNOWLEDGEMENTS

I wish to thank my supervisor, Professor Hermien Zaaiman, for the guidance and constructive comments that assisted me to complete this research. Your reassurance and commitment to this study pointed me in the right direction to ensure that the final output of this research is of quality standard.

I would also like to thank my employer for giving me permission to do the research within the organisation, not forgetting all the colleagues who consented to be interview participants for this study. Your contribution to this research is highly appreciated.

To my family, thank you so much for the support throughout the study journey. I have spent so much time away from you, late nights and early hours but in all this you supported me. I appreciate you so much.

To my study-mates, thank you for keeping me motivated and always being willing to assist when needed. God bless you and all the best with your studies.

Finally, I am grateful to the Almighty God for giving me the wisdom, strength, and courage required to complete this type of study. Thank you.

TABLE OF CONTENTS

PREFACE ..... **I**
ABSTRACT ..... **II**
ACKNOWLEDGEMENTS ..... **III**
TABLE OF CONTENTS ..... **IV**
LIST OF TABLES ..... **V**
LIST OF FIGURES ..... **V**
CHAPTER 1: INTRODUCTION (RESEARCH PROJECT OVERVIEW) **1**
CHAPTER 2: ARTICLE **3**
ABSTRACT 3
INTRODUCTION 4
BACKGROUND 4
METHOD 5
RESULTS AND DISCUSSION 11
CONCLUSION 24
REFERENCES 25
CHAPTER 3: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS (REFLECTION) **28**
APPENDICES **30**

LIST OF TABLES

Table 1. Study-related definitions based on a literature review.

Table 2. Study sample demographic overview.

Table 3. Project risk definition codebook and interviews where aspects of the definitions were mentioned.

Table 4. Frequency of responses per theme.

Table 5. Risk-culture-indicator-related themes from the interviews.

Table 6. Areas identified for improvement for inclusion of project risk in decision-making.

Table 7. Reflective journal.

LIST OF FIGURES

Figure 1. Major project risks managed by the SOE in this study.

Figure 2. Risk culture indicator (RCI) model (Zaaiman et al., In progress), with the indicators most relevant to this study indicated by ovals.

Figure 3. Diagram of links between the RCI model categories and study-related themes.

CHAPTER 1: RESEARCH PROJECT OVERVIEW

Research project context

This research report is the output of my part-time MCom Applied Risk Management mini-dissertation study. This mini-dissertation research project was executed within an existing UARM research project with the aim to teach the student how to do research, while allowing the student to produce her best possible mini-dissertation within the time available to execute this project. This study was conducted on a South African state-owned entity (SOE). The organisation requested that the study results be classified as confidential due to possible risks related to disclosing organisation-specific research information. However, if suitable for publication, the research results may be reworked into a publishable article post-examination with formal permission of the organisation in which the study was done.

Research programme in which this study resides

The study presented in Chapter 2 of this mini-dissertation forms part of the UARM Risk Culture Indicator model project within the Optentia Enhancing Risk Culture research programme. The aims of this parent UARM research project are to develop and test a risk culture indicator model based on organisational culture theory and supervisory risk culture guidance. This allowed the student to do practical, applied, organisation-based research, in addition to academically valuable research.

Organisational research context

The objective of this study was to explore the perceptions of project team members of aspects related to the project risk management culture in a South African SOE. The entity selected for this investigation is responsible for water infrastructure projects critical for ensuring water security in South Africa. The organisation has an internal risk management department responsible for developing risk management policies, processes and frameworks, and facilitation of enterprise-wide risk assessments, including project risks. This study is expected to contribute to greater understanding of risk culture in the selected SOE and to highlight possible areas for improvement of the project risk culture of the organisation.

Research field – theoretical background

Academic literature on the concept of risk culture is limited, and the available literature tends to focus on risk culture in the financial sector. Thus, there have been few published academic articles on the concept of risk culture in non-financial institutions such as public organisations, and on non-financial risks. Depending on its publishability, the study reported here may therefore be valuable to the academic research fraternity.

Selected journal

The *International Journal for Project Management* (IJPM, ISSN: 0263-7863, https://www.journals.elsevier.com/international-journal-of-project-management) was selected for the publication of this article. The journal publishes articles dedicated to project management from the perspectives of organisational behaviour, strategy, change, and innovation. The IJPM publishes the work of scholars worldwide, and its primary readership is academic researchers and students in the project management field. Further, the journal covers all project types in the private and public sectors. Therefore, this journal is deemed to be a suitable candidate for this work, as the study is expected to contribute a novel behaviour-based view to project risk management in public institutions, which could encourage other researchers to conduct further applied studies on project risk culture.

CHAPTER 2: ARTICLE

Project risk culture in a South African state-owned entity

Abstract

The concept of risk culture came to the fore after the 2007/08 financial crisis, when it was identified as a leading contributor to instability in the financial industry. The available literature on risk culture tends to focus on the financial sector, with few risk-culture-specific articles published on non-financial institutions such as public organisations; and none could be found on project risk culture in South African state-owned entities (SOEs). The objective of this study was to explore the perceptions of project team members of aspects related to project risk management in a South African SOE, using a risk culture indicator (RCI) model to structure the research. The research question for this study was therefore: "How do project team members perceive project risk culture in this SOE?" Semi-structured face-to-face interviews were conducted with a sample of 15 participants whose roles require project implementation decision-making in the organisation. The results of the study indicated that project team members rely on experience and information from a panel of experts and consultants in order to include project risks when making project-related decisions. Interviewees suggested that the entity's project risk management process should be improved to ensure that the risk-related information documented, as a result of the internal risk management process, is relevant and of quality to assist with project decision-making. Four indicators – risk-based incentives, communication, challenge and risk accountability – did not feature in the participants' responses, and attention to these indicators may also assist with improving the entity's project risk culture. Overall, this study contributes to the understanding of the perceived project risk culture within the organisation and exemplifies a novel research approach for other researchers interested in conducting project risk culture studies.

Keywords: risk culture, project risk culture, project risk management, construction projects, public sector, risk culture indicator model

Introduction

South African state-owned entities (SOEs) have been under scrutiny in recent years because of governance-, risk- and compliance-related failures. Furthermore, many large public infrastructure capital projects conducted by these organisations have been under-performing, resulting in implementation cost overruns and delayed service delivery (AGSA, 2018). These failures occurred despite significant investment in legislation and corresponding organisational structures intended to regulate and improve SOE performance. Government-authorised commissions of inquiry, such as the Nugent Commission and the Portfolio Committee on Public Enterprises (PCPE), as well as reports from South Africa's Public Protector (PP), have indicated that organisational cultural aspects related to managerial risk-related behaviour could be an underlying factor in the shortcomings of SOEs (Nugent, 2018; PCPE, 2018; PP, 2016). These findings confirm those of Coetzee and Lubbe (2013) that organisational cultures in the South African public sector tend not to support risk management adequately and that staff members are not equipped and supported to manage risk well.

Managerial risk-related behaviour includes risk-taking, -awareness, and -control behaviours that influence risk-informed decision-making. The level of inclusion of risk when making decisions can serve as a proxy for an organisation's risk culture, as such behaviour indicates how much risk management is valued by it (Zaaiman, Van der Flier, & Born, In progress). Evidence of the importance of including risk in decision-making can be found in post-financial-crisis financial supervisory risk culture guidelines (BCBS, 2015; FSB, 2014). Yet, there is limited academic literature on the concept of risk culture and little is known about how it affects management decisions in organisations (Pan, Siegel, & Wang, 2017; Roeschmann, 2014). The available literature tends to focus on risk culture in the financial sector, with few risk-culture-specific articles published regarding non-financial institutions such as public organisations; and none could be found on project risk culture in South African SOEs. For reference to risk culture in the public sector, one must draw on research that was published more than two decades ago in the work of Bozeman and Kingsley (1998) on risk-taking practices in public and private organisations. To fill this gap in the academic literature, there is therefore a need for researchers to provide current empirically based studies on project risk culture in the public sector.

The objective of the study reported here was therefore to explore the perceptions of project team members of aspects related to the project risk management culture in a South African SOE. The primary research question for this study was: 'How do project team members perceive project risk culture in this SOE?' The organisation selected for this investigation is responsible for water infrastructure projects critical for ensuring water security in South Africa, and listed as a major South African enterprise in terms of the Public Finance Management Act (PFMA (1999). Over the past seven years, an objective of this entity has been to embed risk management across the

organisation's business units. However, before this research project, the enterprise had not yet assessed project team members' perceptions of the culture of managing risk as part of managing and implementing projects in the entity.

The Risk Culture Indicator (RCI) model developed by Zaaiman et al. (In progress) was used to structure this investigation. This allowed for the testing of the applicability of using the RCI model to investigate the research question. As the first of its kind for the organisation, this exploratory study contributes to greater understanding of the perceived project risk culture within the entity. Furthermore, due to the lack of published literature on project risk culture, it also adds value to the academic body of knowledge in this under-reported research area.

Background

Study context

South African SOEs are public institutions established by government to foster the country's economic growth and service delivery through capital sourcing, infrastructure development and public–private partnerships for economic development (Fourie, 2014). These entities are regulated by the PFMA (1999), which requires all public entities to have risk management systems and to ensure that all major capital project risks are evaluated before final decisions are made before project execution. The entity studied here is listed as Schedule 2 in the PFMA, which means that it has extensive powers to borrow money through its accounting authority to implement water infrastructure projects. Infrastructure projects are complex, requiring the management of the multifaceted risks inherent in managing projects (Wang, Dulaimi, & Aguria, 2004). Project risk is defined as exposures that could result in the non-achievement of project objectives such as their scope, duration, cost and quality (PMBOK, 2000; Zou, Zhang, & Wang, 2007). Critical project risks in construction projects in developing countries include: obtaining project approvals; political instability; corruption; site safety; improper design; quality control; cost overruns; and environmental protection (Wang et al., 2004). Figure 1 depicts major project risks identified by the organisation studied in pursuit of its projects.

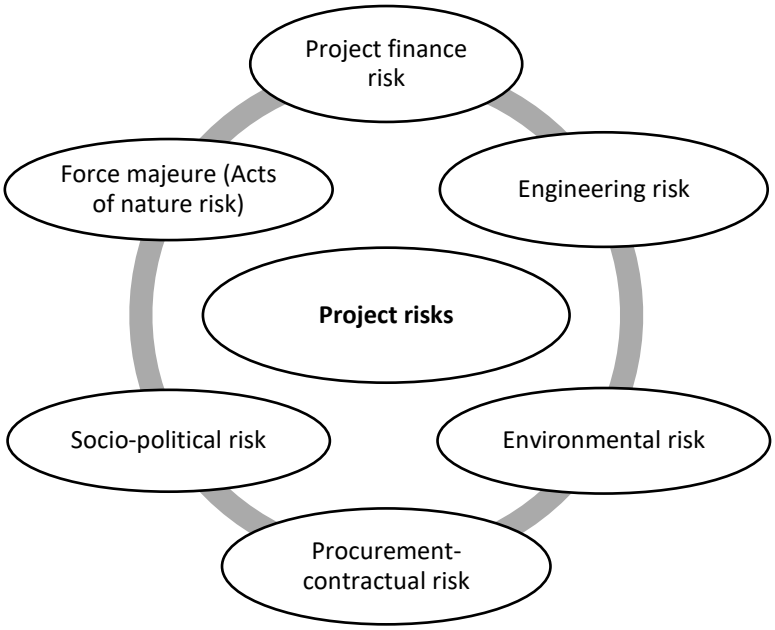


Figure 1. Major project risks managed by the SOE in this study.

The entity's risk management department guides its risk management processes to ensure that state funds and resources are effectively used as per the South African National Treasury regulations (Treasury, 2009). In addition, the organisation has adopted a formal project implementation methodology (PIM) to ensure a systematic approach when executing projects regardless of size. Project risk management forms an important part of the PIM to ensure that project teams assess project-related risks and make risk-informed decisions throughout each phase of a project. One of the aims of these measures is to pursue an organisational culture that permits and encourages active consideration of risk during project-related decision-making.

However, public organisations experience project challenges that differ from those in commercial companies. First, in public sector capital projects, the regulatory framework within which an entity operates has a bearing on how risks should be managed (Baldry, 1998). Second, Liu, Meng, and Fellows (2015) and Li, Griffin, Yue, and Zhao (2013) report that national cultures influence the risk management behaviours of project teams. Lastly, organisational external factors such as political and social issues significantly influence construction risk management (Adeleke et al., 2018).

Project risk management

Adeleke et al. (2018) describe project risk management as a systematic process to identify, analyse, and mitigate risks that could have an impact on achieving project objectives. Risk management is a critical requirement in the execution of capital projects as project teams are faced with multiple conflicting conditions requiring project management decisions (Erdogan, Šaparauskas, & Turskis, 2017; Liu, Zou, & Gong, 2013). For example, pressure from project funders and intended beneficiaries to complete the project on schedule despite socio-political or regulatory challenges

needing to be resolved before project tasks are completed, may result in the disregard of appropriate construction practices, including consideration of risk when making project decisions (Baldry, 1998). While organisations continue to adopt project risk management practices, there are opposing views on whether risk management actually adds value to the achievement of project objectives (Willumsen, Oehmen, Stingl, & Geraldi, 2019).

The concept of risk culture

The concept of risk culture came to the fore after the 2007/08 financial crisis, when it was identified as a leading contributor to instability in the financial industry (Palermo, Power, & Ashby, 2017; Roeschmann, 2014). The term "risk culture" generally refers to shared perceptions, preferences, values, beliefs, attitudes and risk-related practices within groups (Pan et al., 2017; Roeschmann, 2014; Sheedy, Griffin, & Barbour, 2017). In this study, the term project risk culture is based on the decision-focused definition of risk culture used in the RCI model under development by Zaaiman et al. (In progress): "The risk culture of an organisational group is manifested by the importance given to considering risk when the group makes decisions. The level of explicit inclusion of risk in decision-making represents the implicit, subjective value afforded to risk by the group." This definition is based on the definitions of risk culture advocated by the Basel Committee on Banking Supervision (BCBS, 2015) and the Financial Stability Board(FSB, 2014). In addition, the RCI model illustrated in Figure 2 shows a dynamic and interlinked view of 11 risk culture indicators based on the FSB (2014) risk culture indicators and De Nederlandsche Bank (DBN, 2015)'s approach to the supervision of behaviour and culture (Zaaiman et al., In progress). Despite being based on financial risk culture guidelines, it is expected that this decision-focused definition and model can also be used to frame risk culture studies in other sectors. The present study provided the opportunity to evaluate the usefulness of the model in the public sector.

The RCI model's structural and behavioural cultural levels are based on the 'onion' view of culture of Hofstede, Hofstede, and Minkov (2010, pp. 7-9). In their view, structural indicators of culture are more removed from the behavioural indicators of culture. Actual behaviour provides a greater indication of what is valued in an organisation than the formal structures intended to facilitate such behaviour.

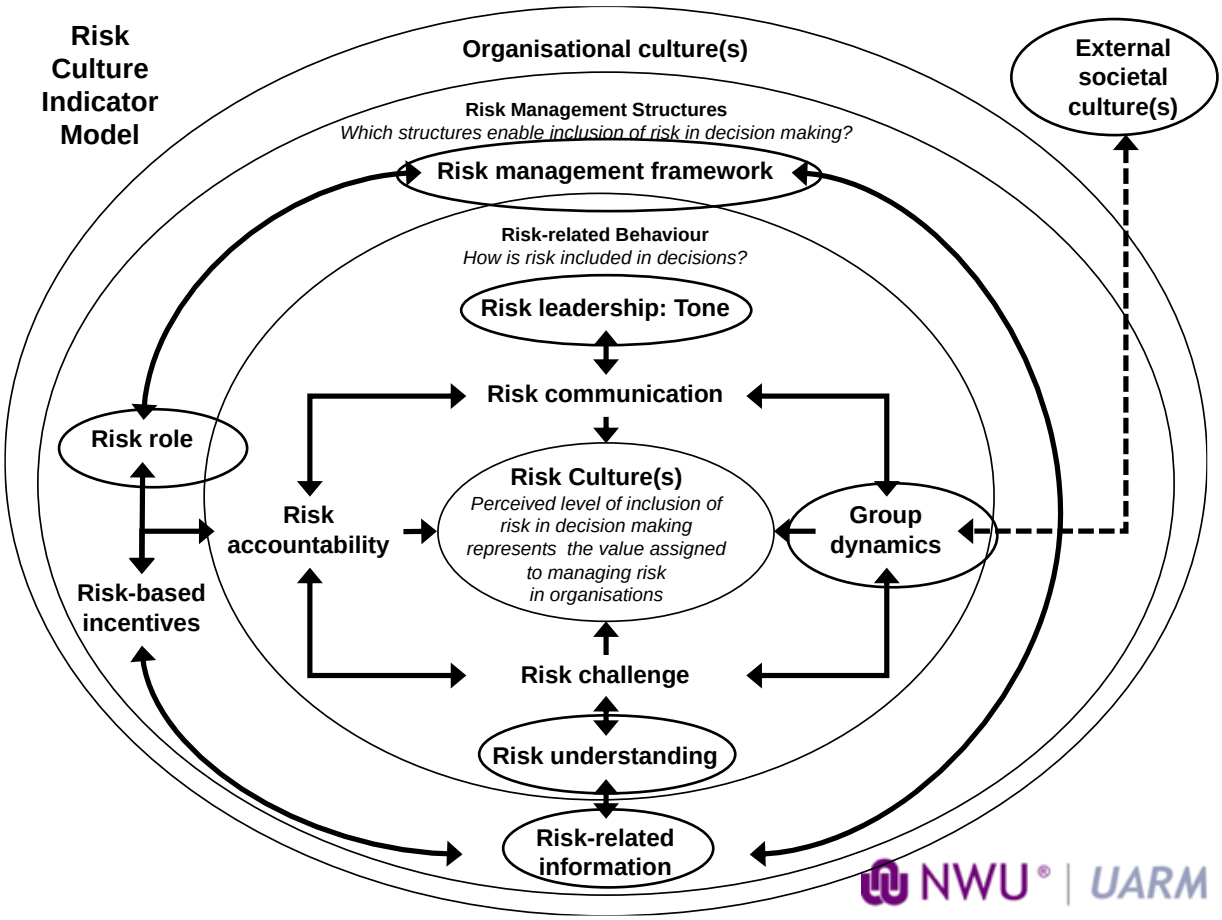


Figure 2. Risk culture indicator (RCI) model (Zaaiman et al., In progress), with the indicators most relevant to this study indicated by ovals.

Based on thematic analysis of the literature on construction project risk management plus the interview data, the seven indicators most relevant to this study will now be briefly introduced.

Behavioural indicators – Risk-related behaviour

Risk leadership: Tone

The entity's board of directors and executive managers send implicit risk-related messages of the value of formal consideration of risk during project decision-making. Tone from the top therefore contributes to the project risk management environment and largely determines the project risk culture of an organisation (FSB, 2014; Zaaiman et al., In progress).

Group dynamics

The interaction between different project stakeholders affects project decision-making processes (DBN, 2015; Zaaiman et al., In progress). Project stakeholders include contractors and project teams who play significant roles in terms of skills, providing capacity and experience to execute project tasks. Also, external communities who are affected by the project or have a particular interest in it such as funders influence the decision-making dynamics of projects (Baldry, 1998; Liu et al., 2015). In terms of project risk management, project teams are expected to collaborate with enterprise risk

managers to influence and improve construction project risk management, instead of practising silo-based (project-level) risk management (Liu et al., 2013). There are therefore multiple role players that influence the inclusion of risk when decisions are made concerning construction projects.

Risk understanding

Effective project risk management is possible if project team members have a shared understanding of risk, the value of risk to the organisation, and its risk management framework (FSB, 2014; Zaaiman et al., In progress). Table 1 presents literature-based definitions that are of importance for project team members to understand in order to include risk explicitly in decision-making and to optimise the risk culture of the organisation.

Table 1. Study-related definitions based on a literature review

Category	Description	Source
Definition of risk	The potential negative effect of uncertainty on achieving an organisation's objectives.	Zaaiman et al. (In progress)
Decision-focused definition of risk culture	The risk culture of an organisational group is manifested by the importance given to considering risk when the group makes decisions. The level of explicit inclusion of risk in decision-making represents the implicit, subjective value afforded to risk by the group.	BCBS (2015) and FSB (2014)
Definition of project risk	Refers to uncertain events that could hinder achievement of project objectives related to project scope, duration, cost and quality.	PMBOK (2000); Wang et al. (2004) and Zou et al. (2007)
Project risk types	Refers to critical project risks associated with construction projects, e.g. political instability, human resources, cost-overruns, incompetent contractors, inadequate funding.	Wang et al. (2004) and Zou et al. (2007)
Definition of risk management in construction projects	A systematic process to identify, analyse, and mitigate risks that could have an impact on achieving project objectives.	Adeleke et al. (2018)

External societal culture(s)

Inclusion of risk in project decision-making can be influenced by socio-cultural factors external to the organisation (Zaaiman et al., In progress). In public sector projects, national socio-economic issues such as community expectations of a project , labour, and related legislation influence decision-making by project team members and as such also affect the risk management culture of these projects (Adeleke et al., 2018; Baldry, 1998; Liu et al., 2015). In addition, cultural diversity within teams has an impact on how the team members and contractors discuss, manage and respond to risk. Therefore, external societal culture(s) may hinder or contribute to the inclusion of risk during project decision-making.

Structural indicators – Risk management structures

Risk management framework

An organisation's risk management framework or structure provides project team members with tools and information to manage risk and make decisions. However, a risk management framework alone is not sufficient to prevent risk-related behavioural issues (DBN, 2015; Zaaiman et al., In progress). Aibinu and Jagboro (2002) and Liu et al. (2013) find that risk management policies and practices are not applied systematically and consistently during project execution. Such inconsistency may contribute negatively to the inclusion of project risk in decision-making. Liu et al. (2013) encourage organisations to cultivate a risk-focused culture through an enterprise-wide risk management process, rather than having project risk management as an isolated aspect of an organisation. This is expected to provide project team members with a solid structure on how to include risk in decision-making. However, based on project experience, I believe that an enterprise-wide risk management process or framework may be too difficult to implement in practice, so project-specific risk management structures may be required to achieve systematic and consistent project risk management practices conducted by organisations.

Risk role

Each project team member should have a clear understanding of their roles in managing risk during project implementation, including for what aspects they are responsible and accountable (DBN, 2015; Zaaiman et al., In progress). Experience and knowledge of the project's role players, such as project managers and environmental managers, are critical to inform project risk analysis and decision-making.

Risk-related information

The quality of project risk information used in decision-making is another determining factor of the quality of project-related decisions (DBN, 2015; Zaaiman et al., In progress). Sources of project risk information may include: project risk registers, records of lessons learned from previously completed projects, and reports from professional service providers.

Method

An interview-based qualitative approach was followed to investigate the research question. The use of semi-structured face-to-face interviews was suitable for this study because it allowed for an exploratory investigation into an academically under-explored area and one not yet executed in the organisation researched here.

A representative sample of employees with project execution decision-making responsibility were selected to answer the following interview questions aimed at providing information related to the research question:

- In your opinion, what does the term project risk mean in your organisation?
- How are project-related risks included when project decisions are made?
- What assists you to consider risk when you make project-related decisions?
- What hampers consideration of risk in project decision-making?
- How could inclusion of risk during project decision-making be improved?

These questions probed the interviewees' experience and perceptions of project risk culture at work. In addition, areas where inclusion of risk in project decision-making could be improved were identified.

The individual interviews ran for a maximum of 20 minutes and were recorded with each participant's consent. The audio-recordings were transcribed by the researcher within a week of the interview. The study sample was selected from the 25 employees in the entity who are directly involved with the execution of projects. A purposive-judgemental sampling approach was followed as the participants were selected based on their roles and responsibilities in line with the study requirements (Panacek & Thompson, 2007; Patton & Patton, 2002; Sharma, 2017). Further, the concept of thematic data saturation was used to guide the sample size. For example, Guest, Bunce, and Johnson (2006) find data saturation to be reached within the first 12 interviews of an interview-based study. Based on this, 15 interviews were selected as a suitable sample size. The interviewee sample comprised 15 management and non-management employees whose roles included project managers, environmental managers, project engineers as well as social and land acquisition managers, and project support personnel (Table 2).

Table 2. Study sample demographic overview.

Project role	Number of participants	Level of seniority	Number of years in position
Project manager	4	Management	6–10
Environmental manager	4	Management	6–10
Project engineer	3	Non-management	6–10
Social manager	1	Management	0–5
Land acquisition manager	1	Management	0– 5
Project support personnel	2	Management	>10

This study adhered to the ethical guidelines of North-West University (NWU)'s policy on research ethics and was approved by the relevant research committees before being undertaken. Participation in the study was voluntary. All participants provided informed written consent to participate in the study and could leave the investigation at any time (see Appendix A). Care was taken to ensure that neither the organisation nor the interviewee was identified in the transcriptions. Furthermore, the interview content is reported on anonymously. The audio-recordings and transcriptions constitute the raw data for this study, which will be stored safely by the researcher for three years, and thereafter deleted. All the literature reviewed and referenced in this study is available in the public domain.

The interviews were conducted using the interview guide shown in Appendix B. A thematic data analysis approach was used to interpret the data. The interview transcripts were coded using the risk culture indicators discussed in the Background section as guide. The aims of the coding process were to evaluate how well the interviewees understood the concept of risk culture; to identify themes related to the project risk culture indicators arising from the interview questions, specifically positive and negative contributions of the indicator to inclusion of risk when making decisions; and to provide suggestions for improving inclusion of risk when project decisions are made by the organisation. The interview data were analysed using a constant comparative approach with the aim to reach thematic data-saturation. This means that the data were analysed until no new themes emerged (Aldiabat & Navenec, 2018; Barney, 1965; Hennie, 2002). Analysis of the data was an iterative process and themes were reviewed by the study supervisor to optimise the trustworthiness, validity and reliability of the study results (Nowell, Norris, White, & Moules, 2017).

Results and Discussion

The following section presents the empirical results of the interviewees' perceptions of project risk culture at the SOE.

Understanding of the concept project risk culture

The first research question was: "In your opinion, what does the term project risk mean in your organisation?" In response, the interviewees defined the term project risk to allow the researcher to evaluate the level of shared understanding of the concept. Nine out of 15 respondents defined the term project risk as an event that, if it happened, could derail, hamper or affect a project from achieving its objectives, as shown in Table 3. Some participants perceived project risk to either have a negative or a positive effect on the achievement of objectives. However, the project risk literature distinguishes between risk and opportunity (Browning, 2014; Olsson, 2007). An organisation takes risks to leverage opportunities to achieve its objectives.

Furthermore, other interviewees view project risk as a formal risk management process instead of an uncertain event that is identified as a result of a risk management process. Some participants listed project risk types that they manage within their project roles, to describe their understanding of the term project risk. The types of project risks revealed by these interviewees included: community protest, incompetent contractors, inadequate funding, landowners refusing access to land, heavy rain and environmental degradation. The effects of all these project risk types mentioned by the interviewees are negative. These declarations indicated practical experience and understanding of project risks in the organisation. The uncertainty as to what the term means could be attributed to the entity's enterprise-wide risk management framework, which does not distinguish between risk and opportunity.

The interview data highlighted differences in understanding of the term project risk within the entity, indicating that some of the participants do not necessarily understand the term project risk and do not share an understanding of its meaning. Improving the understanding of the project-risk-related risk terms, shown in Table 1, is therefore an area capable of improvement for the entity. This finding is also relevant to other organisations with multidisciplinary project teams. Such enterprises need to ensure that their team members understand what terms related to project risk mean to allow for shared understanding of the terms used during project risk communication, discussion and challenge.

Despite the apparent range of understanding of the term project risk by the group, the non-definition-specific interview questions led to useful information on project risk from most of the interviewees, as shown in Table 4. This increased my confidence that interviewing multidisciplinary team members provided data relevant to the study, as discussed next.

How do project team members perceive the project risk culture in this SOE?

The interviewees' responses to the interview questions:

- How are project-related risks included when project decisions are made?
- What assists you to consider risk when you make project-related decisions?
- What hampers consideration of risk in project decision-making?
- How could inclusion of risk during project decision-making be improved?

are now discussed to answer the study's research question: *How do project team members perceive project risk culture in this SOE?*

The iterative interview data analysis and coding process resulted in themes related to risk culture indicators, as shown in Table 5. The themes from the interview data were analysed and grouped using the RCI codebook developed by Zaaiman et al. (In progress) as a basis. The RCI codebook was useful to streamline and guide the data analysis process as I was able to allocate the interview themes to the indicators as shown in Figure 3. Table 5 presents the study results, organised first by risk category and theme, then by a description of the category, and an illustrative quotation from the interviews where the theme arose. The themes represent the study participants' perceptions of project risk culture within the entity, based on interviewee experience of factors influencing the inclusion of risk in project decision-making in the organisation.

As explained in the Method section, the study population indicated a range of views about project risk management in the organisation. But, as this is a qualitative study, with the aim to identify themes until data saturation was achieved, rather than a comprehensive survey, the frequency of responses per theme does not indicate the prevalence of these responses in the population of the organisation as a whole. Data saturation was reached after interview number 14, as no new information or themes were added in the last interview (15).

The interview data showed that interviewees are aware that, for every project decision to be made during a project life cycle, associated risks should be evaluated and considered. Therefore, participant responses indicated that team members understand the value of risk inclusion and how it should be included in project decision-making in the organisation. As shown in Table 5, the interviewees indicated 14 themes related to project risk, linked to seven factors of the RCI model that assist project team members to consider risks when make project-related decisions. This indicated an awareness of the need for behaviour and structures in the organisation related to project risk culture. Experiences that have a bearing on the inclusion of risk when project decisions are made, will now be discussed.

Table 3. Project risk definition codebook and interviews where aspects of the definitions were mentioned.

Category	Description	Interview														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Project risk	Refers to uncertain events that could hinder achievement of project objectives related to project scope, duration, cost and quality.	X	X	X	X		X			X	X	X	X			
Project risk types	Refers to critical project risks associated with construction projects, e.g. political instability, human resources, cost-overruns, incompetent contractors, and inadequate funding.		X							X			X		X	

Table 4. Frequency of responses per theme.

Category	Interview														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A. Behavioural indicators															
RCI Mod: Risk Leadership: Tone															
Lack of management buy-in	X	X													
RCI Mod: Group dynamics															
Project risk inclusion - planning phase	X	X	X			X		X				X			
Time pressures						X		X							
Project teams working in silos						X								X	
RCI Mod: Shared risk understanding															
Project risk inclusion - execution phase									X			X	X	X	X
RCI Mod: External societal culture(s)															
Legislation			X		X				X						
Community												X			X
B. Structural indicators															
RCI Mod: Risk management framework															
Project risk register: High-level													X	X	
Project risk register: Not operational				X										X	
Project risk management process: Tick-box exercise	X		X		X								X		
RCI Mod: Risk role															
Experience			X				X	X			X		X		
RCI Mod: Risk-related information															
Inadequate critical risk information							X			X				X	
Reliance on third-parties for information					X		X								
Documented project risks						X				X		X			

Table 5. Risk-culture-indicator-related themes from the interviews

Category	Description	Example quotation
A. Behavioural indicators		
RCI Mod: Risk Leadership: Tone		
Lack of management buy-in	Management commitment to inclusion of risk during decision-making may influence project team members' behaviour.	"…if you don't get the buy-in from management you may raise a risk, but [still may] lack support in terms of resources needed to deal [with these] risks …"
RCI Mod: Group dynamics		
Project risk inclusion - planning phase	Project team members identify risks during the project planning phase and ensure that they are considered in decision-making. Shared understanding of risk is important for team members to effectively participate in this process.	"...risk-assessment come at the beginning of the project... when we prepare the project implementation plan, then even when we prepare the strategies for each project, so we incorporate risks..."
Time pressures	Pressure to complete project within schedule may cause the project team not to do a detailed risk analysis before a decision is made.	"For me it's [referring to not doing a detailed risk analysis] maybe when the projects are urgent when everyone wants things to be done today, and there's no time to plan..."
Project teams working in silos	Project teams working on different projects rarely share risk information or lessons learned to assist in decision-making.	"...we are trying to learn from different projects and to break this silo mentality; risk might be cutting across, so we try to learn…, from our lessons learned..." '…We each act in our little area, …, but to get that cross-project integration is difficult…'
RCI Mod: Shared risk understanding		
Project risk inclusion - execution phase	During project execution, project team members understand that project risks and decision-making go together and evaluate risks when making decisions.	"…we take risks seriously before implementation, but once you start with the implementation, we tend to forget that this is a continuous activity..."

RCI Mod: External societal culture(s)		
Legislation	National laws have an impact on the risk attitude and behaviour of project teams, e.g. the National Environmental Management Act affects decision-making on matters affecting the environment.	"...so that you can be able to manage that risk that is brought about by that legislation." "…well, if I could only talk for my field it will be the environment legislation."
Community	The behaviour of community members during execution of projects affects decision-making, e.g. the decision on contractors and labour force.	"...it is actually recent that we have consistently been having this problem of social community involvement problems..."
B. Structural indicators		
RCI Mod: Risk management framework		
Project risk register: High level	The entity's project risk registers are high level, and risk is identified based on strategic project deliverables, e.g. inadequate detailed information complicates the inclusion of documented risks in decision-making throughout project implementation stages.	"…we do this exercise at such a high level that it is not an informing tool …, it's not really helping you [referring to project teams] make decisions..."
Project risk register: Not operational	The entity's project risk registers are not operational. Project risks that are identified from day-to-day contractor's activities but require decision-making from the project team members that are not documented.	"…we need to insist on better recording of risks, of operational issues the lower-level things [, which] people don't see ... as important ... [but] they deal with on a daily basis." "…some projects don't even have an operational risk register run by a consultant, which is a contractual requirement."
Project risk management process: Tick-box exercise	The way in which project risk assessments are conducted within the organisation is a tick-box exercise, and not done to assist project team members in decision-making.	"…we use risk as a recording exercise, and we are ticking boxes; we're not actually using it in decision-making…"
RCI Mod: Risk role		

Experience	Project team members' experience is key in risk consideration and managing related risks.	"…people that are having experience, people that can manage the risks, people that can assist you in making decisions to manage the risks."
RCI Mod: Risk-related information		
Inadequate critical risk information	Project team members may not have critical risk information required for decision-making.	"…but even as filling in a risk register, you need to understand what kind of information should go in." "…involvement of other people who are not that close to the project perhaps in terms of improving the quality of our risk registers."
Reliance on third parties for information	Project team members rely on a panel of experts, project consultants and contractors' experiences and expertise for quality of risk information used in decision-making.	"...we have the panel of experts who have worked on numerous projects..."
Documented project risks	The project risk input to the periodic projects progress report, recorded from the internal risk management process, is useful for decision-making.	"...if risk register is up-to-date whenever you need to make a project-related decision, you can use the register..." "…there was no formal paper trail or evidence that could summarise and pull together to show a picture and the change over time."

Figure 3 shows the associations between the RCI model categories and themes related to project risk identified from the study participants' responses. The coverage of the RCI model categories indicates that the study population have a systemic view of the challenges facing team members when considering risk when project decisions are made.

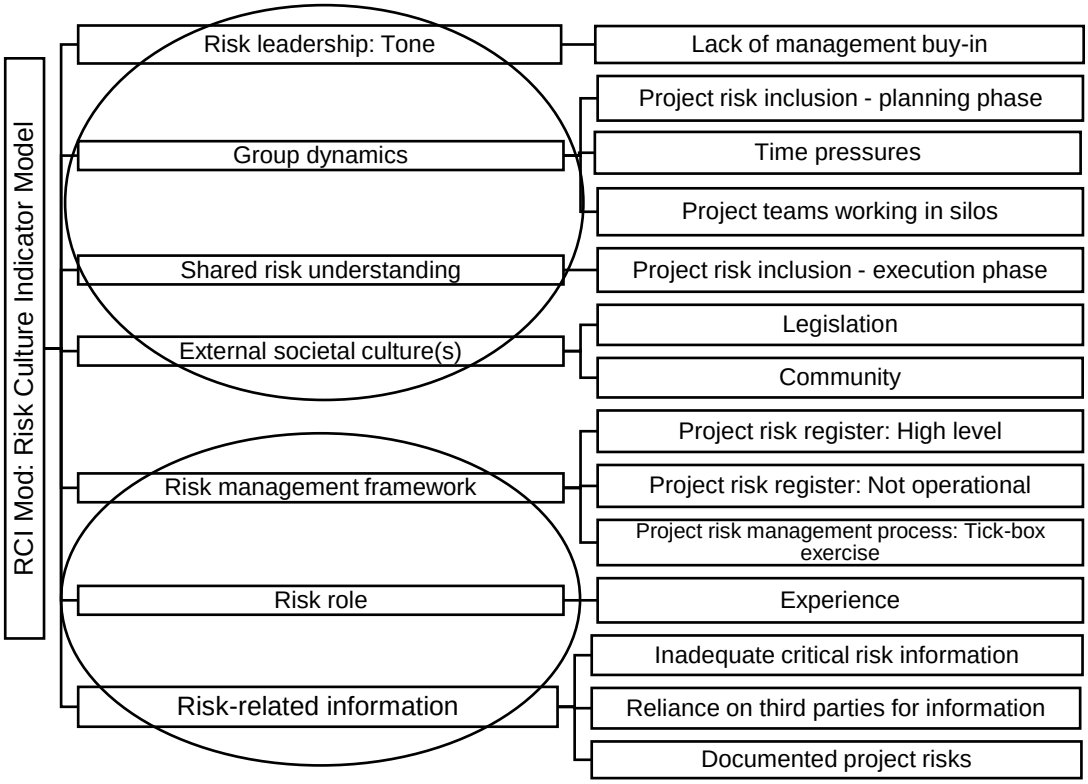


Figure 3. Diagram of links between the RCI model categories and study-related themes. The ovals indicate which themes belong to the behavioural and structural indicator categories.

Behavioural indicators – Risk-related behaviour

Risk leadership: Tone

Participants' responses indicated that there is lack of management buy-in to support risk inclusion in project decision-making, as shown in Table 5. Coetzee and Lubbe (2013) identified the issue of management commitment to risk management as one of the main concerns in the public sector to ensure an effective risk management strategy. A top-down approach to project risk management may drive a culture of project risk inclusion in decision-making.

Group dynamics

Those surveyed indicated that, during the planning phase, a structured process of identifying project risks and developing mitigation measures to manage the risks is followed. The risks identified are then highlighted in initial project management documents such as the project charter and the project implementation plan, to assist with project decision-making. However, as the project progresses, pressure to complete it on time may result in project teams not conducting detailed risk analysis before a decision is made.

Also, group dynamics within the entity manifest in project teams who are assigned to different projects working in silos. There is a perception that personnel engaged on different projects rarely share risk information or lessons learned from completed projects to assist in decision-making, even though the projects may be similar, as shown in Table 5. Although project managers coordinate the preparation of a lessons-learnt report once a project is completed, there is an indication that the process to manage such information and ensure ease of access by other project teams is non-existent in the organisation. This indicates that the enterprise lacks critical discussion and debate on risks related to project decisions; however, the study participants indicated exceptions to this when it comes to risks posed by legislation, in which case project team members consult with the internal legal department before making decisions.

Risk understanding

The interviewees indicated that project risk management and decision-making go together, as shown in Table 5. Participants perceived a general inconsistency in assessing, evaluating and considering project risks during the project execution phase. When a project is about to start, the organisation conducts a project risk workshop to identify risks and how they might be addressed. Yet, project risk register updates and formal risk management interactions do not happen continuously once a project starts. This results in project risk registers containing outdated risk information that project team members cannot rely on subsequently to make risk-informed decisions.

External societal culture(s)

Those surveyed indicated that external factors such as legislation and community behaviour contribute to their considering risks when they make decisions, especially in the environmental management field, as indicated in Table 5. Environmental compliance and enforcement are taken seriously by the South African government and environmental activist groups, and non-compliance may result in penalties, huge fines and possible imprisonment of the accounting officer. This is supported by a study by Adeleke et al. (2018) and Baldry (1998), who found that external socio-economic issues such as rules and regulations have a bearing on decision-making on public sector projects.

Structural indicators – Risk management structures

Risk management framework

The study population indicated that the entity's project risk registers are high level and not operational (also see Table 5). This makes it challenging for project teams to use the information in the risk registers in day-to-day project decision-making. Instead of these registers containing information to assist with both high-level and operational project decision-making, the risk information they contain is strategic. Wang et al. (2004) aver that project risks in developing countries are multifaceted and

risk mitigation decisions are based on a hierarchy of levels. In this case, it seems that the entity prioritises project risks that affect organisational strategic objectives.

The interviewees also perceive the way in which project risk assessments are conducted within the organisation to be a tick-box exercise, which does not assist project team members in decision-making, as shown in Table 5. Hence, most of the risks in different project risk registers are the same and do not assist in circumventing the numerous pitfalls that projects encounter.

Risk role

Interviewees mentioned that they rely on their experience when considering risk during decision-making, as shown in Table 5. The experience of project team members is viewed to be key in the consideration of risk, and there is an indication that project teams understand their role in managing the project-related risks for which they are responsible.

Risk-related information

The interviewees also considered the quality of the project-related risk information that is available as the most important contributor to decision-making in the organisation. Participants mentioned that they rely more on information provided by third parties such as panels of experts, project consultants and contractors to make project-related decisions (see Table 5). This may be due to inadequate critical risk information in the project risk register. Respondents felt that having documented project risks available assists when considering risks in decision-making. However, they suggested that more should be done to ensure that the information in the projects risk registers is up to date and at operational project level. One of the respondents reported that project managers sometimes do not enforce the compilation of risk registers by contractors even though this is one of their deliverables. And integrating risk information documented by both the organisation and the contractor could improve the quality of available risk information.

Areas of improvement for inclusion of risk during project decision-making

A further six themes were identified as possible areas of improvement for inclusion of risk during decision-making in the entity's projects. These areas so highlighted are entity specific. Table 6 summarises the study participants' perceptions of what should be improved to ensure inclusion of risk during project decision-making.

Table 6. Areas identified for improvement for inclusion of project risk in decision-making.

Theme	Description	Example quotations
Continuous project risk assessment	The process of detailed project risk assessment should continue throughout the project phases.	"...even risk identification is something that has to keep on happening because the fact that it was done in the beginning it doesn't mean that as the project advances, there won't be any other new risks coming in. So that engagement has to be continuous until the end of the project."
The use of lessons learned from previous projects	Project teams should share lessons learned from completed projects useful for decision-making.	"...if people were to share information that we have implemented on this project, so these [documented project lessons] were the kind of risks that we encountered..."
Risk management training for project personnel	Project personnel should be trained to enhance project risk management skills and capabilities.	"I actually think we need specific training, to be honest. We're not trained..."
Broader participation	Contributors to project risk assessment should involve those who do not work closely with the project.	"…involvement of other people who are not that close to the project [may assist] perhaps in terms of improving the quality of our risk registers …"
Change of approach to project risk management	Changing current risk approach, which is high level, for record keeping and management reporting.	"….. I think it needs to be a different kind of setup...."
		"…project teams remain responsible for the risk, … The coordination and control function [risk facilitation] that can move to the risk division…"

The areas identified for improvement relate to formal structural risk management indicators of culture, which the entity should put in place to facilitate active consideration of risk by project team members. Some interviewees proposed enhancements of the current organisational project risk management process to enable team members to incorporate risk when they make project-related decisions. This includes broader participation by employees of the entity, during risk workshops, who are not directly involved with a project. In addition, ensuring that the project risk assessments to include day-to-day operational risks and not only high-level risks which are used for record keeping and business reporting. Also, detailed project risk analysis should be conducted continuously throughout the course of a project to ensure that risk information in the project risk registers is relevant to assist with decision-making. The interviewees were also of the opinion that proper documentation, storing and sharing of lessons learned from completed projects could improve the quality of risk information that project team members should consider when making decisions. Lastly, participants were of the view that project team members and risk management personnel should be trained in project risk management to improve their skills and awareness of the value of considering risk in the project decision-making process.

In summary

These results show that the organisation's project team members differ in their understanding of the term project risk. However, the project teams do understand the importance of the inclusion of project risk in decision-making to achieve project objectives and that for every project decision to be made, associated risks need to be considered. There is a perception that thorough project risk analysis is conducted only in a project's initial phase. Once project execution starts, there are no in-depth project risk assessments, and the update of project risk registers by the project team members and the internal risk management department is not conducted in a way that informs decision-making but is a tick-box exercise. Consequently, project team members rely on their experiences and information from panels of experts, consultants and contractors to make risk-informed decisions. It is also evident that these team members do consider risks when they make decisions. However, documented risk information from an established internal risk management process does not contribute as expected to operational project decision-making in practice. There are several areas of possible improvement that were identified in terms of project risk culture, such as the approach to project risk management, and the use of lessons learned from previous projects in risk analysis and project decision-making.

Seven of the eleven risk culture indicators were applicable to this study, indicating that the RCI model developed by can be used to structure similar studies in the public sector. Four indicators – risk-based incentives, communication, challenge and risk accountability – did not feature in the literature studied or the interview responses. More attention to these indicators may assist with improving the project risk culture of the organisation.

Conclusion

In this study I investigated the perceptions of project team members of aspects related to project risk management in a South African SOE. The study's focus was on whether these team members actively include risk when they make project-related decisions. The study makes a contribution to the understanding of perceived project culture within an SOE. It also contributes to the risk culture body of knowledge by addressing an under-reported research area of project risk culture in the public sector in South Africa. The study findings indicate that project team members understand the value of including risk and that project risks should be considered in project-related decision-making in the organisation. The risk information that project team members consider when making project-related decisions is mainly from their experiences and third parties such as panels of experts, consultants and contractors. There is a strong perception that the entity's approach to project risk management should be enhanced so that project risks identified through an internal risk management process could be useful to inform project decision-making. Overall, project team members are of the opinion that a culture of active risk consideration and inclusion during project decision-making exists within this particular SOE.

The results of this exploratory study should be seen as indicative. Further research on an expanded sample, including a broader participant cohort, such as the entity's risk management staff, auditors and executive managers, may provide additional findings. However, the outcomes reported here provide useful indicators of the project risk culture of the organisation and identified areas of improvement for project risk management and its risk culture.

This study may be used as a basis for future research. First, within the entity to further investigate the shortfalls in the current approach to project risk management and to identify possible solutions. Second, researchers can use the approach followed in this study to further explore the project risk culture in other South African SOEs and public sector institutions.

Number of words:

Abstract: 279

Article: 7041

References

Adeleke, A. Q., Bahaudin, A. Y., Kamaruddeen, A. M., Bamgbade, J. A., Salimon, M. G., Khan, M. W. A., & Sorooshian, S. (2018). The Influence of Organizational External Factors on Construction Risk Management among Nigerian Construction Companies. *Safety and Health at Work, 9*(1), 115-124. doi:10.1016/j.shaw.2017.05.004

AGSA. (2018). PFMA 2017-18 consolidated general report - Auditor-General. Retrieved from https://www.agsa.co.za/Portals/0/Reports/PFMA/201718/GR/PFMA2017-18%20Consolidated%20General%20Report.pdf

Aibinu, A. A., & Jagboro, G. O. (2002). The effects of construction delays on project delivery in Nigerian construction industry. *International Journal of Project Management, 20*(8), 593-599. doi:10.1016/S0263-7863(02)00028-5

Aldiabat, K. M., & Navenec, L. J. T. Q. R. (2018). Data saturation: The mysterious step in grounded theory method. *23*(1), 245-261.

Baldry, D. (1998). The evaluation of risk management in public sector capital projects. *International Journal of Project Management, 16*(1), 35-41. doi:https://doi.org/10.1016/S0263-7863(97)00015-X

Barney, G. G. (1965). The Constant Comparative Method of Qualitative Analysis. *Social Problems, 12*(4), 436. doi:10.2307/798843

BCBS. (2015). The Basel Committee on Banking Supervision - Guidelines on corporate governance principles for banks. Retrieved from https://www.bis.org/publ/bcbs294.pdf

Bozeman, B., & Kingsley, G. (1998). Risk Culture in Public and Private Organizations. *Public Administration Review, 58*(2), 109-118. doi:10.2307/976358

Browning, T. R. (2014). A Quantitative Framework for Managing Project Value, Risk, and Opportunity. *IEEE Transactions on Engineering Management, Engineering Management, IEEE Transactions on, IEEE Trans. Eng. Manage.*(4), 583. doi:10.1109/TEM.2014.2326986

Coetzee, G. P., & Lubbe, D. (2013). The risk maturity of South African private and public sector organisations. *Southern African Journal of Accountability and Auditing Research, 14*(1), 45-56.

DBN. (2015). Supervision of behaviour and culture: foundations, practice & future developments. Retrieved from https://www.dnb.nl/binaries/SupervisionofBehaviourandCulture_tcm46-334417.pdf

Erdogan, S. A., Šaparauskas, J., & Turskis, Z. (2017). Decision Making in Construction Management: AHP and Expert Choice Approach. *Procedia Engineering, 172*, 270-276. doi:10.1016/j.proeng.2017.02.111

Fourie. (2014). The role of public sector enterprises in the South African economy *African Journal of Public Affairs*. doi:2014-08-22T05:45:54Z

FSB. (2014). Guidance on supervisory interaction with financial institutions on risk culture: a framework for assessing risk culture. . Retrieved from http://www.fsb.org/2014/04/140407/

Guest, G., Bunce, A., & Johnson, L. (2006). How Many Interviews Are Enough?: An Experiment with Data Saturation and Variability. *Field methods, 18*(1), 59-82. doi:10.1177/1525822X05279903

Hennie, B. (2002). A Purposeful Approach to the Constant Comparative Method in the Analysis of Qualitative Interviews. *Quality & Quantity*(4), 391.

Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). *Cultures and Organizations, Software of the Mind, Intercultural Cooperation and its Importance for Survival* (Third ed.). USA: McGraw Hill.

Li, K., Griffin, D., Yue, H., & Zhao, L. (2013). How does culture influence corporate risk-taking? *Journal of Corporate Finance, 23*, 1-22. doi:https://doi.org/10.1016/j.jcorpfin.2013.07.008

Liu, Meng, F., & Fellows, R. (2015). An exploratory study of understanding project risk management from the perspective of national culture. *International Journal of Project Management, 33*(3), 564-575. doi:https://doi.org/10.1016/j.ijproman.2014.08.004

Liu, Zou, P. X. W., & Gong, W. (2013). Managing Project Risk at the Enterprise Level: Exploratory Case Studies in China. *Journal of Construction Engineering & Management, 139*(9), 1268-1274. doi:10.1061/(ASCE)CO.1943-7862.0000717

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic Analysis: Striving to Meet the Trustworthiness Criteria. *International Journal of Qualitative Methods, 16*(1). doi:10.1177/1609406917733847

Nugent, J. R. (2018). *Report of SARS commission of enquiry*. Retrieved from www.thepresidency.gov.za/download/file/fid/1466

Olsson, R. (2007). In search of opportunity management: Is the risk management process enough? *International Journal of Project Management, 25*(8), 745-752. doi:10.1016/j.ijproman.2007.03.005

Palermo, T., Power, M., & Ashby, S. (2017). Navigating institutional complexity: The production of risk culture in the financial sector. *Journal of Management Studies, 54*(2), 154-181. doi:10.1111/joms.12241

Pan, Y., Siegel, S., & Wang, T. Y. (2017). Corporate Risk Culture. *Journal of Financial and Quantitative Analysis, 52*(6), 2327-2367. doi:10.1017/S0022109017000771

Panacek, E. A., & Thompson, C. B. (2007). Sampling methods: Selecting your subjects. *Air Medical Journal, 26*(2), 75-78. doi:10.1016/j.amj.2007.01.001

Patton, M. Q., & Patton, M. Q. (2002). *Qualitative research & evaluation methods*: Thousand Oaks, Calif. : Sage Publications, c2002.3rd ed.

PCPE. (2018). *Report on the inquiry into governance, procurement and financial sustainability of Eskom*. Retrieved from https://www.parliament.gov.za/storage/app/media/Links/2018/November%202018/28-11-2018/Final%20Report%20-%20Eskom%20Inquiry%2028%20NOV.pdf

PFMA. (1999). *Public Finance Management Act*. South Africa: Government gazzette Retrieved from www.treasury.gov.za/legislation/PFMA/act.pdf

PMBOK. (2000). *Project Management Body of Knowledge* Newtown Square (PA): Project Management Institute.

PP. (2016). A Report of the Public Protector on State of capture. Retrieved from https://cdn.24.co.za/files/Cms/General/d/4666/3f63a8b78d2b495d88f10ed060997f76.pdf

Roeschmann, A. Z. (2014). Risk Culture: What It Is and How It Affects an Insurer's Risk Management. *Risk Management and Insurance Review, 17*(2), 277-296. doi:doi:10.1111/rmir.12025

Sharma, G. J. (2017). Pros and cons of different sampling techniques. *International Journal of Applied Research, 3*(7), 749-752.

Sheedy, E. A., Griffin, B., & Barbour, J. P. (2017). A Framework and Measure for Examining Risk Climate in Financial Institutions. *Journal of Business and Psychology, 32*(1), 101-116. doi:10.1007/s10869-015-9424-7

Treasury, N. (2009). Public Sector Risk Management Framework. Retrieved from https://oag.treasury.gov.za/Guidelines/Forms/AllItems.aspx

Wang, S. Q., Dulaimi, M. F., & Aguria, M. Y. (2004). Risk management framework for construction projects in developing countries. *Construction Management and Economics, 22*(3), 237-252. doi:10.1080/0144619032000124689

Willumsen, P., Oehmen, J., Stingl, V., & Geraldi, J. (2019). Value creation through project risk management. *International Journal of Project Management, 37*(5), 731-749. doi:https://doi.org/10.1016/j.ijproman.2019.01.007

Zaaiman, H., Van der Flier, H., & Born, M. P. (In progress). Which risk culture? Introducing an expanded Financial Stability Board risk-culture-indicator model and codebook.

Zou, P. X. W., Zhang, G., & Wang, J. (2007). Understanding the key risks in construction projects in China. *International Journal of Project Management, 25*(6), 601-614. doi:10.1016/j.ijproman.2007.03.001

CHAPTER 3: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS (REFLECTION)

I look back at this moment and feel humbled by the journey I undertook during this research project. They say the only time you should ever look back is to see how far you have come, and yes, this has been quite a learning experience in my academic life.

Personal experience

After completing the first year of the MCom in Applied Risk Management in 2018, I made sure to get enough rest in preparation for the research project in year two. Two months into 2019, I got the news from the doctor that there was a new family member on the way. This was great news for the family, but for me it meant I had to double the effort to submit a full mini-dissertation at the end of October 2019. Through the support received from my family, colleagues from work and the UARM lecturers and study-mates, I have been able to deliver a complete study report.

The research projects

It was clear in my mind from the start of the project that I wanted to do a quantitative study on risk culture in a South African state-owned entity. However, three days before presenting the study proposal I had a consultation with my supervisor and realised that what I intended to do with the research would not be viable in my organisation because of its structure and population. We then discussed possible study options in the organisation, leading to me submitting an interview-based qualitative study on project risk culture in a South African state-owned entity. As an indication of my research journey, Table 7 presents a journal of my reflections on the corresponding research data analysis and coding process (Nowell et al., 2017). The guidance from my supervisor, and the Kerlick workshops for language editing and support to have a consistent storyline, were of immense value.

Table 7. Reflective journal

Approach	Experience	Action
Code according to RCI model	Not all RCI codes were applicable	Include only applicable RCI codes in discussion.
Use term codes for themes from interview data	Use the term category instead of codes	Change the terminology.
Reduce information used to describe categories and example quotes	Keep descriptions concise	Review the category descriptions and example quotes. But they should still make sense.
Have an RCI literature-based codebook in the background	Leave only the study-based definitions in a table format.	Include literature-based codes and descriptions in text (paragraphs).

Search for repeating information in interviews to analyse data	Coding should follow a structure, e.g. guided by research question	Analyse data and group according to definitions, diagnostic themes and solutions.

Study limitations and recommendations

A study limitation was that the cohort of participants were limited to employees within the project management and implementation division of the organisation, whose roles involve project decision-making. Inclusion of other business units and executive managers in the study sample could have added a peripheral perception of project risk culture by people outside the division investigated. It is recommended that the entity conduct an in-depth study on the structural indicators of project risk culture and evaluate whether a project-specific risk management structure is required to achieve systematic and consistent project risk management practices in the organisation, instead of the current holistic enterprise-wide risk management framework. Academic researchers and students are encouraged to conduct further applied studies on project risk culture in other public sector institutions.

References

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic Analysis: Striving to Meet the Trustworthiness Criteria. *International Journal of Qualitative Methods, 16*(1). doi:10.1177/1609406917733847

APPENDICES

Appendix A - Interview Informed Consent Form

Study title: Project risk culture in a South African state-owned entity

Student (also called 'the researcher' in this form)**:** Fhulufhedzani Irene Nemukula

Study supervisor: Prof Hermien Zaaiman

Supervisor contact details: hermien.zaaiman@nwu.ac.za (082 921 0463)

Document aim

The aim of this document is to provide potential interview study participants the opportunity to provide formal informed consent to participate in this study.

Why this interview?

This is an academic study at master's degree level, which provides the student the opportunity to learn how to do an interview-based study, while obtaining data expected to be useful for your organisation.

Informed consent process

The interviewer will obtain written consent from participants before setting up the interviews. Written consent is given by completing and signing this form.

Permission to do this study

The organisation has provided formal permission for this study to be conducted. This study has been approved by the North-West University Faculty of Economic and Management Sciences Research Ethics Committee (EMS-REC.) Ethics clearance number: NWU-00392-19-A4

Study aim

South African SOEs have been under scrutiny in recent years due to governance-, risk-, and compliance-related failures. The SOE selected for this study manages and implements multi-billion-rand capital projects and depends on government guarantees to raise commercial funding for such projects. However, the entity has not yet undertaken any initiative to assess project team perception of risk culture when managing and implementing projects.

The primary research question for this study is: How do project team members perceive project risk culture in this SOE?

The main aim of this study is to explore project team member perceptions of aspects related to the management of project risk culture in the designated entity.

Why have you been invited to take part?

This study's target sample will consist of 15 employees who are involved with the project management and implementation of the entity. The following demographical information is to determine the general profile of the respondents and would not be used to make any comparisons. Participants' demographics will comprise

of a representative cross-section of project managers; environmental managers; project engineers; social-, land acquisition- and public relations-personnel, and projects support team members.

Interview process – what to expect from the interview

The scheduled interview will last 20 minutes. I may request more information from you post interview if necessary for clarifying study data. However, I shall endeavour to keep post-interview follow-up questions to a minimum.

The interviews will be run in a semi-structured manner, meaning that I shall ask a set of open-ended questions and may ask additional questions to clarify my understanding of your response.

You will be expected to answer the following questions during the interview:

- In your opinion, what does the term project risk mean in your organisation?
- How are project-related risks included when project decisions are made?
- What assists you to consider risk when you make project-related decisions?
- What hampers consideration of risk in project decision-making?
- How could inclusion of risk during project decision-making be improved?

I need to audio-tape your interview to allow me to transcribe and analyse your responses post-interview. This will allow me to give full attention to your responses during the interview and not get side-tracked by multiple note-taking. I therefore kindly request that you consent to such audio-taping based on the requirement that the recordings be deleted after transcribing.

Study data management

The audio-recordings will be deleted after the information was transcribed by the researcher or transcriber. If a separate (i.e. not the study researcher) transcriber is used, s/he will sign a confidentiality clause before transcribing (i.e. the transcriber may not talk to anybody about the study data). Neither the company, nor the interviewee will be identified in the study transcriptions. The transcriptions constitute the raw data for this study, which will be stored safely by the researcher for three years. The interview content will be analysed and reported on anonymously. Responsible members of the North-West University may be given access to the anonymised data for supervision and/or audit of the research.

The researcher may wish to directly quote some of your responses in the study report, without identifying you. You will be asked to give permission for each such quote to be used.

Publication of the study results

The study will be written up as a confidential study report in the researcher's mini-dissertation. The report will be made available to the organisation in which the study was done. Post examination, the study may be published as an academic article if formal permission to do so has been received by the organisation.

Potential risks to you and the organisation in taking part in this study

There following risks are involved in taking part:

- Data leaks
- Breach of confidentiality

In order to reduce any potential risks, the researcher will ensure that neither the organisation nor the interviewee will be identified in the study transcriptions. Further, responsible members of the North-West University may be given access to the anonymised data for supervision and/or audit of the research.

Should you have any other concerns about taking part in this study, please contact the researcher or study supervisor to discuss your concerns.

Potential benefits to you in taking part in this study

Your input to this study will contribute to this important issue in the organisation and may result in the improvement of project management and implementation decision making process in the organisation.

Should you have concerns on this study

The interviewer has been trained to do the interview in an ethical and academically sound manner. Should you have any concerns about the interview that cannot be allayed by the researcher, either before or after the interview, you are welcome to contact the student's supervisor (contact details above) to discuss these concerns. Should you wish to further escalate your concerns, please contact the module leader, Prof Hermien Zaaiman at hermien.zaaiman@nwu.ac.za (082 921 0463).

Informed consent

	yes/no
I have read and understood this consent form.	
I have had a chance to ask the researcher questions on the study.	
These questions have been adequately answered for me to be able to provide informed consent to participate in this study.	
I understand that taking part in this study is voluntary.	
I have not been pressurised to take part in this study.	
I understand that I may exit the study at any time without being penalised or prejudiced against in any way.	
I hereby provide consent to contribute to this study under the conditions explained in this form.	

Initial each page and sign

Participant name:

Signature:

Date:

Appendix B - Study interview guide

Study title: Project risk culture in a South African state-owned entity

Student (also called 'the researcher' in this form)**:** Fhulufhedzani Irene Nemukula

Study supervisor: Prof Hermien Zaaiman

Supervisor contact details: hermien.zaaiman@nwu.ac.za (082 921 0463)

Document aim

The aim of this document is to provide as a guide to the student on how s/he will be conducting the interview after obtaining informed consent from the interviewee (see MARM Interview Consent Form for this study for information provided to the interviewee before the interview).

Interview process

1. Clarification of understanding of informed consent form at start of the interview process:

Thanks for agreeing to participate in this study. I appreciate your willingness to assist me with this research.

Do you have any further questions or concerns on the informed consent form that you would like to discuss before we start the interview?

- If the interviewee has questions/concerns, discuss the questions before continuing with the interview. Remind the interviewee that s/he is allowed to leave the interview at any time during the interview.
- If the interviewee does not have questions or concerns, continue with the interview.

2. Interview:

- Pose the interview questions in the pre-defined sequence:
  - In your opinion, what does the term project risk mean in your organisation?
  - How are project-related risks included when project decisions are made?
  - What assists you to consider risk when you make project-related decisions?
  - What hampers consideration of risk in project decision-making?
  - How could inclusion of risk during project decision-making be improved?
- Facilitate the interviewee responses only when required by asking non-leading further questions:
  - Do not overdo probing questions to avoid influencing the interviewee responses.
  - Do not lead your respondent into providing information that you expect to be the answer to your research questions.
  - Pre-prepare non-leading probing questions for your interview. Example questions:
    - *When you say ....., what do you mean by that?*
    - *Tell me more about.... (referring to something the respondent said, not what you wanted him/her to say)*
    - *Please give me an example (concrete examples provide more information about the actual situation than general statements about a situation)*
    - *What does this look like in practice?*
    - *How does this happen? (note: ask 'how' rather than 'why' questions – see Harvard interview strategies document available on link listed at the end of the document)*
    - *How is this important to you?*
    - *How is this important to the organisation?*
    - *How is this important in the context of risk management (or insert a phrase related to your specific research objective) in the organisation?*

- *If the person refers to how somebody else or a group feels about something, ask: How do you feel about this?*
- *How does this information relate to the topic under discussion? (steer respondent back to topic when s/he digresses from the topic)*

3. Interpersonal aspects of interviews to keep in mind

Your behaviour during the interview will influence the interviewee's responses.

- **Do:**
  - Keep the possible biases and limitations of interviews in mind when designing, executing and writing up your interviews – interview transcriptions will assist you and others to evaluate how your own expectations and natural biases may have influenced the interview data.
  - Understand the aims of your interview questions in the context of your research project.
  - Ask simple questions that will provide information related to your research objectives.
  - Pilot and practice your interview before formal data gathering so that you can see what works and what doesn't work.
  - Ask only one question at a time.
  - Give the person time to think about the question – stay quiet during that time.
  - Listen attentively to the interviewee.
  - Ask clarifying questions where necessary for purposes of your research.
  - Remain ethically sensitive as described in the Informed letter of consent – do not change the rules of engagement during the interview.
  - Stay warm and empathetic (not sympathetic – see under 'Don't' below) during the interview – you do not have to suddenly become a 'cold fish' during the interview.
  - Relax and enjoy the interview.
  - At the end of the interview, state why you are grateful to the participant for her/his time and inputs to allow the respondent to feel appreciated for their efforts to contribute to your research question.
- **Don't:**
  - Interrupt your interviewee.
  - Convey any approval, sympathy, or disagreement, with your interviewee's comments through words or actions (e.g. avoid encouraging nods, frowns, verbal affirmations or disagreements) – the interview is about what the person thinks, and not about how you feel about what they think.
  - Answer the question for the interviewee.
  - Don't ask questions that can be answered with one word, such as 'yes' or 'no'.
- **What if the interviewee becomes frustrated or emotional during the interview?**
  - Stay calm.
  - Do not interrupt, try to defend, comfort the interviewee, or 'fix' the situation – say as little as possible and allow the person to calm down.
  - Turn the audio-recording off if the person requests this.
  - When the person has calmed down, ask a question that acknowledges the emotion, such as *What about the situation prompted these strong emotions?*

4. Further preparation for the interviews

Use other useful interview advice available online to prepare yourself for the interviews, e.g.:

https://msu.edu/user/mkennedy/digitaladvisor/Research/interviewing.htm

https://sociology.fas.harvard.edu/files/sociology/files/interview_strategies.pdf