

Perceptions of operational risk culture in a South African public service organisation

TNP Mngomezulu

 **orcid.org 0000-0002-4188-9585**

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Supervisor: Ms MA Zeller

Co-supervisor: Mr JF Goede

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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: Research project overview; Chapter 2: Article; and Chapter 3: 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

Globally, risk management is becoming the basis for challenging the quality of public sector services (Power, 2004). In South Africa, however, the focus of risk management has largely been on the private sector and rarely within the sphere of government. This study focused on how the perceptions of risk culture compared within a single South African public service organisation. In an online survey, using the Centre of Applied Risk Management (UARM) Risk Culture Scale (RCS), risk culture data were collected from management and non-management employees (n=201 valid responses). Both groups indicated a medium to high perception of risk culture. About 90% of all respondents reported having been employed in the organisation for 10 years and longer, which was believed to be the reason for the homogenous nature of the responses. However, more detailed analysis of the management group's responses indicated a significant finding that branch managers specifically (as distinct from operations managers) were more comfortable with their own risk management role. This result may be due to branch manager's active role in the organisation and branch level experience of risk related decision-making. Surprisingly, as much as 20.5% of all the respondents answered "*I do not know*" when asked if the organisation's risk training initiatives had prepared them to manage the risks connected to their roles. These results suggest that further action should include risk training to support risk management more strongly. In addition, the respondents suggested that *leadership's tone from the top* as well as *shared understanding of risk* should be encouraged to improve risk culture in the organisation.

Careful attention should be paid by public sector management to ensure that all operational processes support the management of operational risk to help detect and manage operational risks on time, avoiding government service delivery failure.

Keywords: public service organisation, perceptions of operational risk culture, management and non-management, public sector, South African public service, risk and operational risk, branch operations

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CHAPTER 1: RESEARCH PROJECT OVERVIEW

1.1 Research problem statement

The South African public sector is responsible for quality service delivery to all citizens and in return, the public is encouraged to meet their regulatory obligations to the state. According to National Treasury (2009), risk management within the public sector involves a systematic process to identify, assess and manage risks continuously thereby preventing risks that could negatively impact government's service delivery capacity. With public funds entrusted to the government, public service employees may face more scrutiny in managing funds compared to employees in the private sector (Vincent, 1996). In South Africa attention to risk and risk culture has been focused more on financial institutions and the private sector than on the public sector.

This study applies the (Zaaiman, Pretorius, Van der Flier, & Born, In progress) definition of risk culture which states that 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. Operational risk can be defined as the losses that can occur due to failed internal processes, people, systems and events from the external environment of the organisation (Cortez, 2011).

The South African public service organisation studied has an operations division that focuses on customer service. The division's head is located at the organisation's headquarters and senior management are located across the country together with the 53 branches in which the division operates. Owing to the geographical spread of the branches, the main challenge is to ensure that the risk culture in operations is perceived and managed in the same way. At the time of this study, the division was unclear about how operational realities in the different branches influence the operational risk culture of the division.

1.2 Scope of the research

This study aimed to compare how management and non-management employees within the division perceived risk culture within their roles. These findings could provide a starting point for the public sector and other related institutions on how to increase the inclusion of risk in decision-making and help to achieve a strong risk culture.

The study was also intended to inform senior branch operations management of the risk awareness of its employees and their perceived inclusion of risk in decision-making, which could assist the organisation to achieve its service delivery objectives.

1.3 Selected journal

The *Journal of Risk Research* was selected for potential publication of the article. The journal aims to explore inter-relationships between risk, decision-making and society and to promote ways to better risk management practice. This journal was selected because it is peer-reviewed and is indexed within several prestigious databases and among several business journals. This article has potential to add value to the journal's readership if accepted for publication. Though the journal contributes to the development of risk management methodologies in various areas of studies, I could not find any article that compares the perceptions of operational risk culture between different groups with the same organisation.

The article was written according to this journal's guidelines and the APA referencing style was used.

The link to the journal's guideline is:

<https://www.tandfonline.com/action/authorSubmission?show=instructions&journalCode=rjrr20>

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ABSTRACT

Perceptions of operational risk culture in a South African public service organisation

Globally, risk management is becoming the basis for challenging the quality of public sector services (Power, 2004). In South Africa, however, the focus of risk management has largely been on the private sector and rarely within the sphere of government. This study focused on how the perceptions of risk culture compared within a single South African public service organisation. In an online survey, using the Centre of Applied Risk Management (UARM) Risk Culture Scale (RCS), risk culture data were collected from management and non-management employees (n=201 valid responses). Both groups indicated a medium to high perception of risk culture. About 90% of all respondents reported having been employed in the organisation for 10 years and longer, which was believed to be the reason for the homogenous nature of the responses. However, more detailed analysis of the management group's responses indicated a significant finding that branch managers specifically (as distinct from operations managers) were more comfortable with their own risk management role. This result may be due to branch manager's active role in the organisation and branch level experience of risk related decision-making. Surprisingly, as much as 20.5% of all the respondents answered "*I do not know*" when asked if the organisation's risk training initiatives had prepared them to manage the risks connected to their roles. These results suggest that further action should include risk training to support risk management more strongly. In addition, the respondents suggested that *leadership's tone from the top* as well as *shared understanding of risk* should be encouraged to improve risk culture in the organisation.

Careful attention should be paid by public sector management to ensure that all operational processes support the management of operational risk to help detect and manage operational risks on time, avoiding government service delivery failure.

Keywords: public service organisation, perceptions of operational risk culture, management and non-management, public sector, South African public service, risk and operational risk, branch operations

2.1 Introduction

Understanding risk is fundamental for any organisation's performance and survival (Li, Griffin, Yue, & Zhao, 2013). Risk culture is increasingly a topic of interest to many organisations, as it is said to be the key driver of employee behaviour, influencing the daily risk related decisions that people make within their roles in the organisation (Levy, Larre, & Twining, 2010; Sheedy & Griffin, 2014). This interest in risk culture, of relevance to both private and public sectors, has resulted in many organisations questioning why employees behave the way they do when faced with different risks and how such behaviour affects risk management in the organisation. Overall, the risk culture of an organisation is influenced by the extent to which its employees understand risk (The Institute of Risk Management, 2012). Operational risk goes beyond operations and processes; it encompasses all aspects of business risk and needs to be taken seriously by all who are running, managing and leading a business (Blunden & Thirlwell, 2013). It is assumed that a sound risk culture can help with early detection and management of risk in an organisation.

Funded by the taxpayer, the public sector is responsible for providing and maintaining services that a country needs in order to function properly and to offer quality of life to its citizens. Quality service delivery by government institutions builds public trust and, in turn, encourages citizens to meet their obligations to the state and to society. Globally, public sectors have made risk management the basis of providing quality service delivery (Power, 2004). By contrast, in South Africa, the focus on risk management and risk culture has been prominent within financial institutions and more broadly in the private sector, rather than in the public sector. More specifically, no local academic studies could be found on the topic of operational risk culture in South Africa's public service organisations, nor on differences among operations management and non-management employee groups within this sector.

This study focused on how the perceptions of risk culture compare between management and non-management employees within a single division consisting of 53 branches in a South African public service organisation. The operations division is interested in understanding its risk culture as they are currently unclear how customer service in the different branches influences the operations risk culture of the division. The aim is to inform senior branch operations management of the risk awareness of its employees. This information can assist the division in achieving its service delivery objective of providing successful customer service that helps customers fulfil their obligations, and to do so in the most efficient and cost-effective way. The UARM Risk Culture Scale (UARM RCS) (Zaaiman et al., In progress) was used to collect the risk culture data by means of an online survey.

The study also examined the null and alternate hypothesis on the perception of risk culture among management and non-management employees. The null hypothesis is that management and non-management employees will have a similar perception of risk culture. The alternate hypothesis states

that management employees will have a higher level of perception of risk culture due to their level of accountability and active participation on risk related decision-making.

The study was guided by the following research question:

How do the perceptions of operational risk culture compare between management and non-management employees in a division of a public service organisation?

2.2 Background

2.2.1 South African public service organisation context

Public service organisations are government institutions responsible for service delivery to all citizens. To realise this, the National Treasury in South Africa, in 2016 introduced the Public Sector Risk Management Framework to guide public organisations to establish and maintain effective and efficient risk management processes. However, in today's competitive world it is becoming difficult for organisations to achieve their goals and manage their risks effectively. This is due to the increasing changes within the business environment in which operations take place, scarce resources and increasing challenges to identify and manage risk (Coetzee & Lubbe, 2013). The South African public sector defines risk management as a systematic process to identify, evaluate and manage risks continuously before events arise that can negatively impact the organisation's service delivery capacity (National Treasury, 2009).

Unlike the private sector, where the customer has an option to choose service providers, the public sector customer does not have a choice of service provider with regard to public services needed.

In some cases, the risk management process might be put in place for compliance purposes. According to (Thomas, 2012), however, risk management should be more than a checklist process. The passing of the Public Finance Management Act (PFMA) in South Africa was the catalyst that forced the government to formalise the need for risk management practice within the public sector (Public Finance Management Act 1, 1999). Public service employees need to take responsibility for risk management and understand its importance for successful strategies to ensure high performance. According to (Coetzee & Lubbe, 2013), in many cases management perceives the value of risk management to reduce threats to the organisation.

According to (Levy et al., 2010), the management of risk can help to develop and maintain appropriate employee behaviour and attitudes. When managers perceive risk as value-add, it can lead the organisation to realise a sound risk culture (Levy et al., 2010). According to the Financial Stability Board (FSB), the tone from the top is an important indicator of a sound risk culture because the values of the organisation and its risk culture expectations are set by organisational management (Financial Stability Board, 2014).

2.2.2 The public service organisation selected for this study

This study focused specifically on the branch operations division of a single public service organisation in South Africa. To achieve the organisation's strategy for customer satisfaction, branch operations has a vision of customer-centricity through which all customers are served in a way that exceeds their expectations.

This division has 53 branch offices across the country. The Group Executive works at the organisation's headquarters, followed by the regional executives and senior managers responsible for the different regions in which the branches are located. The location of each branch office is such as to provide easy access by citizens to its services. At the branch level, the service consultants are responsible for delivering customer service to all customers. These consultants report to their operations managers who are responsible for the day to day branch operational activities. These managers, in turn, report to the branch manager, who is responsible for overseeing branch activities and making sure that daily operational goals are met. In this study, the focus was on branch management and non-management staff members responsible for decisions pertaining to the resolution of customer queries and direct face-to-face customer service.

The organisation views the branch operations division as having a critical responsibility to uphold the organisation's reputation in terms of customer service. However, branches are exposed to different operational risks, for instance not having enough skilled service consultants; possible service let-downs due to system failure; and non-conformance to standard operating procedures. All of which can result in different quality of service delivery at the different branches.

Successful customer service in the branches depends not only on the branch team but also on input from other divisions in the organisation that may or may not be located within the branch. Although these do not provide direct face-to-face customer service, they are critical for the successful finalisation of customer queries.

Customers visit the branch offices for various reasons; for example, some do so to meet their regulatory obligations, others may want to query the status of their account regarding a payment they need to make or to receive from the organisation. The quality of the customer service among branches that share the same operational processes and systems can be caused by poor management of operational activities and processes, by ill-disciplined employees or by lack of accountability. As a result, customers may prefer to travel further afield to where they have experienced more efficient service or to avoid repetition of previous service failure. This kind of customer behaviour can result in certain branches being overloaded while others remain inefficient; in these instances, operational risk arises such as human error and failure to resolve customer queries rises which might negatively impact the achievement of customer satisfaction.

Increasing operational complexities due to changes in the internal and external environment in which the public service organisation operates, such as political pressures, technological upgrades and

legislation, can increase uncertainty and risk when decisions are made (The Institute of Risk Management, 2012). These changes require branch employees across the country and the related division's employees in the organisation to have the same high-level understanding of operations risk and how to manage it.

In this study, to provide a starting point for further research, the perceptions of operational risk culture between management and non-management employees in a division of the selected public service organisation in South Africa were explored and compared.

2.2.3 Risk and operational risk

According to the International Organization for Standardization (ISO), and as the basis of this study the term 'risk' is defined as the effect of uncertainty on objectives (International Organization for Standardization:31000, 2018). This is relevant to the organisation in this study, as the possible loss that could arise from branches' operational activities can have an impact on the ability for the division to achieve its customer satisfaction objective.

Most academic authors have defined operational risk as the risk of loss resulting from failed processes, people, systems and external events (Bryce, Cheevers, & Webb, 2013; Rajendran, 2012). These definitions correspond to the areas where possible risks are encountered in the branch operations division under study through lack of appointment of skilled service consultants/employees, changes in technology within the external environment and service failures due to system failure.

Table 1 gives examples of operational risks identified in the literature but also applicable to the public sector (Bryce et al., 2013; Eckert & Gatzert, 2017; International Financial Law Review, 2016; Moosa, 2007; Shah et al., 2006)

Table 1: Examples of types of operational risks applicable to the public sector identified in the literature

People	Process	System	External
Loss of skills	Dependency on support divisions	System failure	Service protest
Human error	Lack of risk communication	Change in technology	Power cuts
Non-conformity to standard operating procedures	Failure to resolve customer queries within the promised turnaround time	Inability of the system to detect risks	Fraud

Risk is an important element both in private and public sector operations (Power, 2004). The main risk area for public service organisations is in the fulfilment of the public service delivery mandate (Kong, Lartey, Bah, & Biswas, 2018; Moloi, 2016; National Treasury, 2009). When public services

fail to deliver on their service delivery mandate, the government can lose the public's trust and the result can range from refusal to comply with government regulatory obligations and even public unrest.

2.2.4 Perceptions of operational risk culture

Events in financial organisations that led to the global financial crises in 2008 highlighted the importance for organisations to understand risk culture and how their employees experience it. Individual employees implement the organisation's objectives and the manner in which they take decisions in the face of risk depends on their attitude towards risk (Ring, Bryce, McKinney, & Webb, 2016). The understanding of risk has an influence on how people react during uncertainty and the manner in which people perceive risk informs us about their risk culture.

Though risk culture is regarded by organisations as important for organisations to understand, there is still no clear consensus on how to define it among practitioners and academics alike (Levy et al., 2010; Power, Ashby, & Palermo, 2013). This study uses the UARM definition of risk culture which states that the risk culture of a group is manifested by the importance given to consider risk when the group makes decisions (Zaaiman et al., In progress).

The culture within an organisation relates to its people, its performance, individual beliefs within the organisation and its leadership (The Institute of Risk Management, 2012). In order for an organisation to provide customer satisfaction, it should come up with ways to encourage positive behaviour to its employees which can in return affect their behaviour when serving customers.

In this study, the results of the perceptions of risk culture aim to provide senior branch operations management to gain insight into the integration of risk in decision-making within the division. The outcome of the perceived level of comfort with own risk management role may provide senior branch operations management with a view on how employees understand their risk management role within their level.

2.3 Method

This quantitative study was carried out using an online survey. The UARM RCS scale was employed to collect data related to the respondent's perceptions of risk culture. The responses were analysed to compare the perceptions of management and non-management employees in the organisation. Statistical tests were selected according to the research objectives, the scale format and distribution of the data. Descriptive and inferential statistical analysis was performed.

2.3.1 Demographic data

The demographic variables required for this study are listed in Table 2. All respondents were requested to include this mandatory information.

Table 2: Demographic information required from the participants

Variable	Options
The level of current role in the organisation provided information on the role of the respondent in the organisation in order to group responses for data analysis to achieve the study objectives.	• Management • Non-management
Role type gave information on the type of role the respondent performed in the organisation.	• Branch manager • Operations manager • Service consultant
Time employed in the organisation was used for data analysis to determine whether the period of employment was a factor that could influence respondents' choice of answers.	• Less than or equal to 1 year • More than 1 and less than or equal to 3 years • More than 3 and less than or equal to 5 years • More than 5 and less than or equal to 10 years • More than 10 years
The highest level of formal education completed	• High school (Matric-NQF level 4) • College (Post-matric certificate or diploma, NQF levels 5-6) • University bachelor's Degree or Advanced Diploma (NQF level 7) • Honours degree; Four-year bachelor's; or Post-graduate diploma (NQF level 8) • Master's or PhD degree (NQF levels 9 and 10) • Other

¹ In South Africa, NQF stands for National Qualifications Framework

2.3.2 Population and sample

The branch operations division in the public service organisation selected for this study operates in all nine provinces of South Africa and its 53 branch offices that are responsible for face-to-face customer service.

The survey questionnaire was sent to 521 staff members responsible for direct customer interaction in all the service branches in the country. Of the population that received the invitation to participate, 208 were management employees and 327 were non-management employees.

The management group included branch managers and operations managers. The branch managers are responsible for overseeing branch activities to ensure that daily operational goals are met, and the operations managers are responsible for daily operational activities including the management of employees. The non-management employees are responsible for providing satisfactory customer service to all clients. The purposive sampling method was used as it involves a random selection of units within a segmented population with the most information on the characteristic of interest (Guarte & Barrios, 2006). For this study, the purposive sampling technique was applied by selecting all branch managers, operations managers and service consultants according to the country's branch operations employee list.

2.3.2.1 Sample analysis

A total of 38% of the employees responded to the survey (Table 3). The sample broadly represented the demographics and geographical spread of the service branch offices (see Table 4 - 6 for participants' demographic data).

Table 3: Sample size and response rate for management and non-management

Respondents role level	Sample	No. of respondents	% respondents
Management	202	85	42
Non-management	327	117	35
Total	529	202	38

Table 4: Total sample and respondents according to role level

Respondents role type	Sample	No. of respondents	% respondents
Branch manager	53	24	45
Operations manager	149	61	40
Service consultant	327	117	35

Table 5: Respondents education level according to role level

Education level	% Management	% Non-management
High school (Matric-NQF level 4)	18	35
College (Post-matric certificate or diploma, NQF levels 5-6)	22	33
University bachelor's degree or Advanced diploma (NQF level 7)	38	22
Honours or Four-year bachelor's degree; or Post-graduate diploma (NQF level 8)	11	6
Masters or PhD degree (NQF levels 9 and 10)	7	0
Other	4	4

Table 6: Respondents period employed according to role level

Number of years employed in role	% Management	% Non-management
Less than or equal to 1 year	0	1
More than 1 and less than or equal to 3 years	0	3
More than 3 and less than or equal to 5 years	1	3
More than 5 and less than or equal to 10 years	1	9
More than 10 years	98	84

The Cronbach alpha for the scale was 0.98, indicating high reliability of the data from the scale. Therefore, the scale worked well for my sample.

The null hypothesis (H0) of the study stated if the distributions are equal:

If $p > \alpha = 0.05$; do not reject H0 meaning there is no significant difference between the management and non-management groups.

If $p < \alpha = 0.05$; reject the null hypothesis as there are significant differences between the management and non-management groups.

Since the data were not normally distributed, the non-parametric Mann-Whitney U test was used to compare the distribution between management and non-management.

2.3.3 Data collection

2.3.3.1 Instrument

The questionnaire used a 42-item five-point Likert scale. It was regarded as valid for the study as it set out to assess risk culture as defined by UARM as “*the perceived level of integration of risk in decision-making processes*”. The scale has two risk culture factors: Factor 1 had 24 items that represent the participant’s perceived level of integration of risk in decision-making in the organisation, and Factor 2, a diagnostic factor, had 18 items reflecting the participant’s perceived level of comfort with own risk management role. The risk culture factor scores were obtained by calculating the scores of each item per factor; higher scores indicated a higher level of perceived risk culture (for the UARM RCS-2019 overview, see Appendix A).

The items of the scale have not been disclosed due to the questionnaire being in the process of publication (for additional information from the Author refer to Appendix A).

The *I do not know* or *I do not understand* responses were not included in the factor analysis, and only respondents with fewer than 30% of *I do not know* answers per factor were included in the calculation of the scores (Zaaiman & Pretorius, In progress). This means that the respondents

needed to have answered at least 16 of the items in Factor 1 and at least 12 items in Factor 2 for their responses to be included in the calculation of the factor score.

In this study a total of 201 responses were included in the calculation of Factor 1 and a total of 202 responses were included in the calculation of Factor 2.

2.3.3.2 Procedure

An introductory email about the study purpose was sent to the sampled population by the organisation's research project sponsor. Thereafter a link to the online survey was emailed to the selected sample employees by the researcher. Owing to the quantitative nature of this research, the geographical location of the 53 branches did not pose a challenge as the link to the survey was emailed to all sampled employees using the organisation's central email server. During the 7-week period (In July and August 2019) when the survey was open for completion, the researcher and project sponsor encouraged participants to complete the survey by means of four weekly reminder emails and approximately 100 courtesy telephone calls.

2.3.3.3 Ethical considerations

The research study was executed only after the following approvals were received:

- Formal approval by the organisation to conduct the study;
- Approval of the proposal by the Scientific Optentia Committee at North-West University
- Approval of the proposal by the university's (EMS-REC) Faculty of Economic and Management Sciences Research Ethics Committee.

Consent to participate in the study was obtained from all respondents and participation in the study was voluntary and non-mandatory. All respondents were requested to confirm that they were above 18 years of age. Confidentiality was assured and maintained regarding all the employees and the participating organisation. The data were analysed by the UARM statistician and provided in aggregated format to the researcher; this process was designed to ensure that the additional demographic information could not be used by the researcher to identify respondents.

2.3.3.4 Limitations of the study

The research study was limited to the following factors:

- Time limitation: The nature of the study being a mini-dissertation only allowed for only a limited time for the study to be conducted;
- Survey fatigue: participants are likely not to stay engaged with long surveys and online surveys can be deleted or ignored by the sampled population
- Differences in the understanding and interpretation of information;

- Single focus: The South African public sector has many organisations that are responsible for customer service. The results of this study were limited to just one organisation within the South African public sector, providing an opportunity for future research to investigate and confirm these results;
- Social desirability and conformity: if the survey topic is socially acceptable, it is possible that the respondents support and overstate their responses.

2.4 Results and Discussion

The survey results and discussion are presented in this section, which covers the testing of the hypothesis, the risk culture diagnostic analysis, and opportunities for improvement.

2.4.1 Factor 1 result: *Perceived level of integration of risk in decision-making*

According to (Basel Committee on Banking Supervision, 2015), risk culture influences the day-to-day decisions of management and non-management employees and has an impact on the risks they assume. Factor 1 tested the way in which the respondents *perceived the inclusion of risk in decision-making* in the division, which represents their group's perceived risk culture.

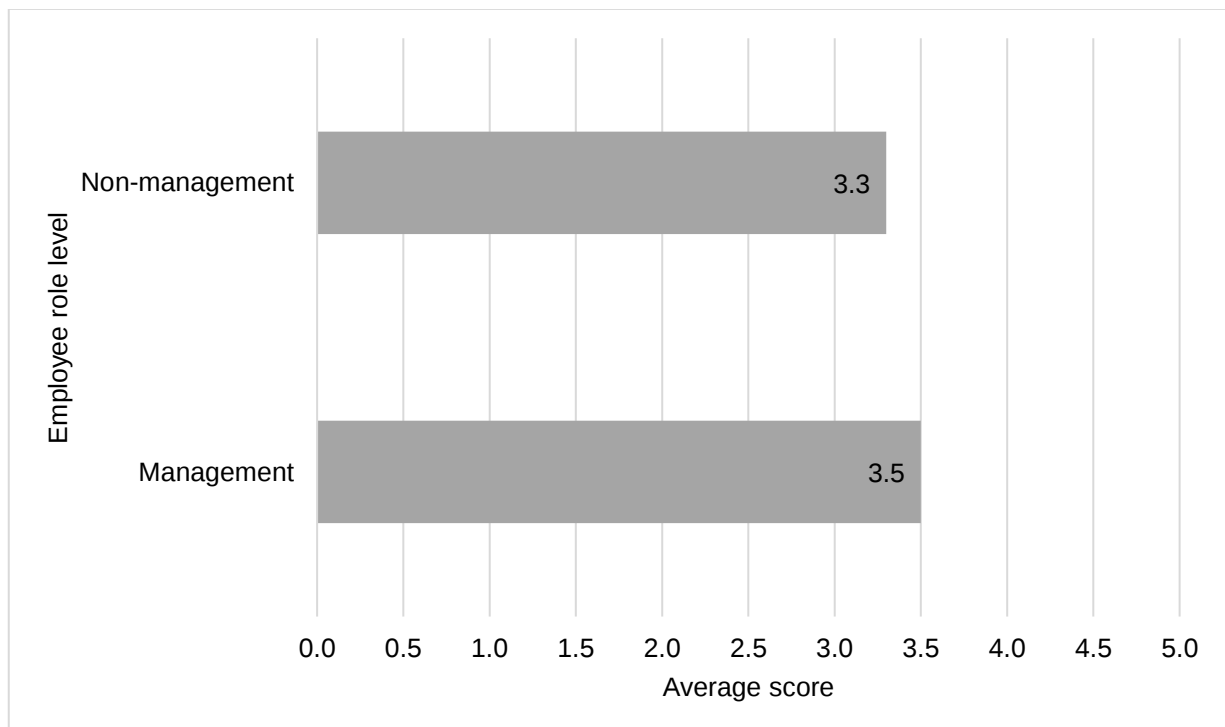


Figure 1: The average Factor 1 scores of management and non-management employees

According to (Zaaiman & Pretorius, In progress), factor scores between $\leq 2.5 < 3.5$ are medium and Factor scores between $\leq 3.5 < 4.5$ are high (see Appendix B for the risk culture scale decision-based

view). The results showed that both management and non-management employees revealed a medium-high *perceived level of integration of risk in decision-making*.

The results in Figures 2 and 3 show the comparison between management and non-management employees' *perceived integration of risk in decision-making*. Both results show a medium-high perception of the integration of risk in decision-making. The medium-high level answer is characterised by non-committal responses that imply some doubt regarding the integration of risk in decision-making. This non-committal response presents an opportunity for senior management to introduce interventions to try to improve the risk culture in the division.

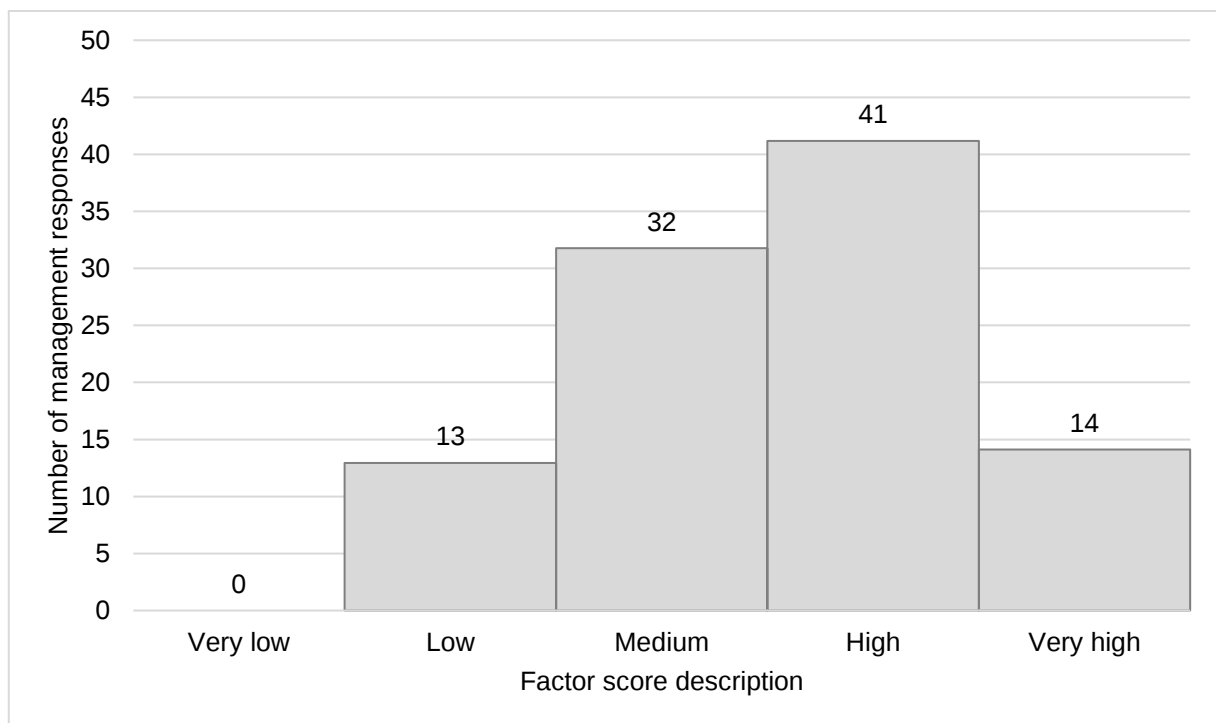


Figure 2: Factor 1 risk culture scores of management employees

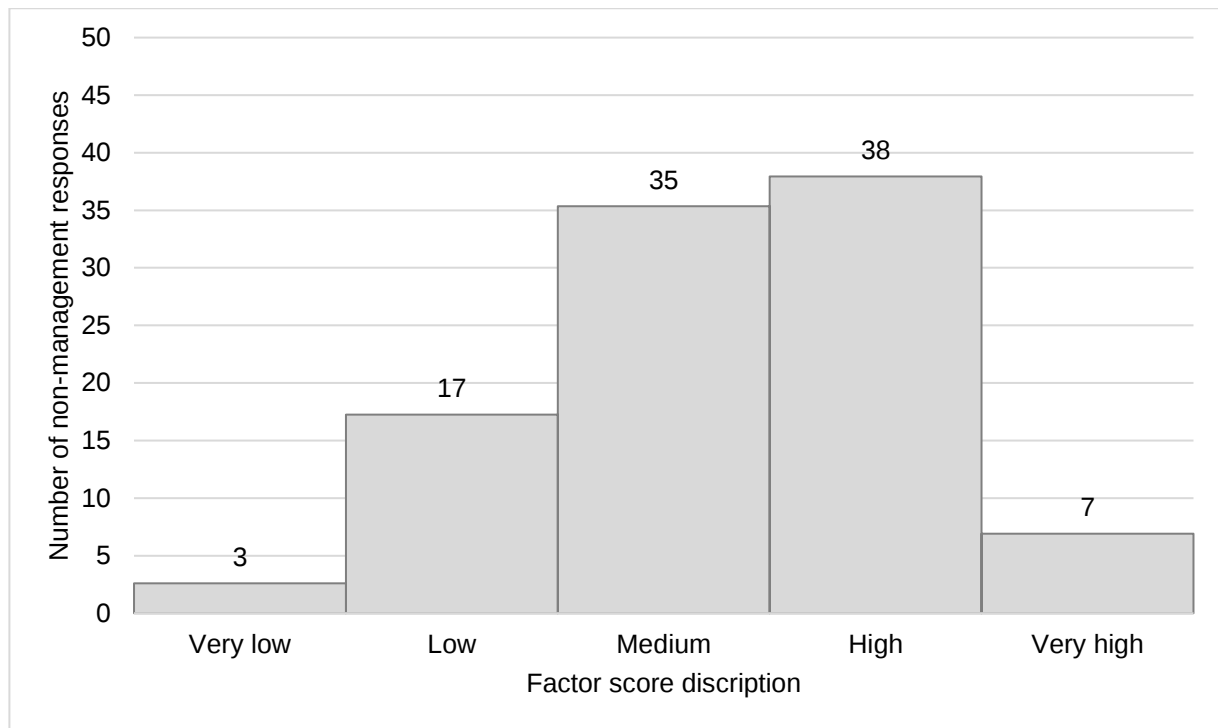


Figure 3: Factor 1 risk culture scores of non-management employees

The comparison of the respondents' *perceived level of risk integration in decision-making* is presented in Table 7 (Mann-Whitney test). The results suggest that there was no significant difference relating to the perception of risk culture between the groups. This result supports the null hypothesis. This outcome is somewhat unexpected, given the active branch risk related decision-making role of management employees compared to non-management employees. However, the fact that 90% of the employees in this study had worked in the organisation for more than 10 years may help to explain the homogeneity of the responses in the two groups.

Table 7: Comparison of management's and non-management's perceived level of risk integration (Mann-Whitney test)

Level of role	N	Wilcoxon mean score	Chi-square test statistic	p-value	Significant difference at $\alpha=0.05$
Factor 1: Perceived level of risk integration in decision-making in the division					
Management	85	110	3.57	0.059	No
Branch managers Operations managers					
Non-management	116	94			
Service consultants					

2.4.2 Diagnostic information

2.4.2.1 Factor 2 results: *Level of comfort with own risk management role*

The (National Treasury, 2009) suggests that everyone has a responsibility in terms of risk management. Factor 2 is a diagnostic factor that was used to compare the groups' *perceived comfort with their own risk management role*. The information reported in Figure 4 illustrates the average score achieved by the respondents on Factor 2. The results show a significant difference between management and non-management employees' scores, with management employees indicating a higher *perceived comfort with own risk management role* compared to non-management. This could be due to their lengthy branch level experience regarding risk related decision-making.

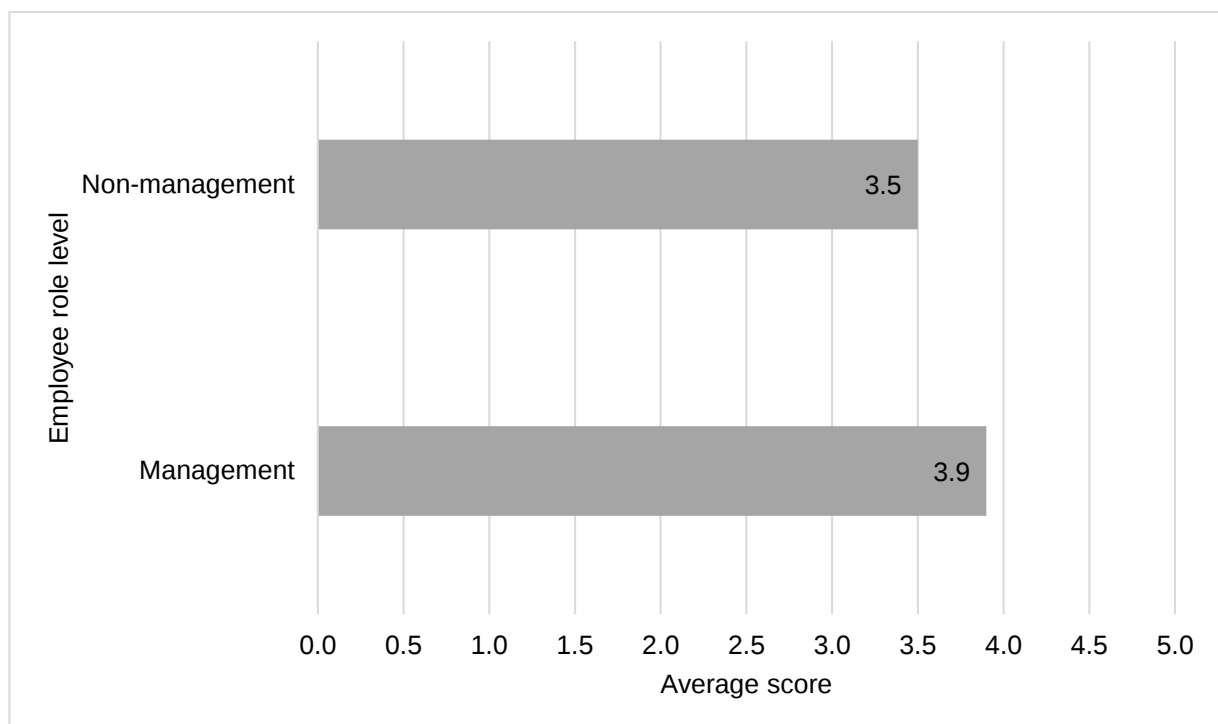


Figure 4: The average Factor 2 scores of management and non-management employees

Figures 5 and 6 further illustrates the comparisons between the two employees' levels of *perceived comfort with own risk management role*. Though the results indicate a significant difference between the groups regarding Factor 2, these results were consistent with Factor 1 results, indicating a medium-high *perceived level of comfort with own risk management role*. This was unexpected as a higher level of *perceived comfort with own risk management role* was expected given the length (10+ years) of time the employees had been employed in the same role. This is also supported by (Rus & Rusu, 2015), stating that the more we live within a culture, as the culture grows, the more it will influence our perceptions, thoughts and feelings.

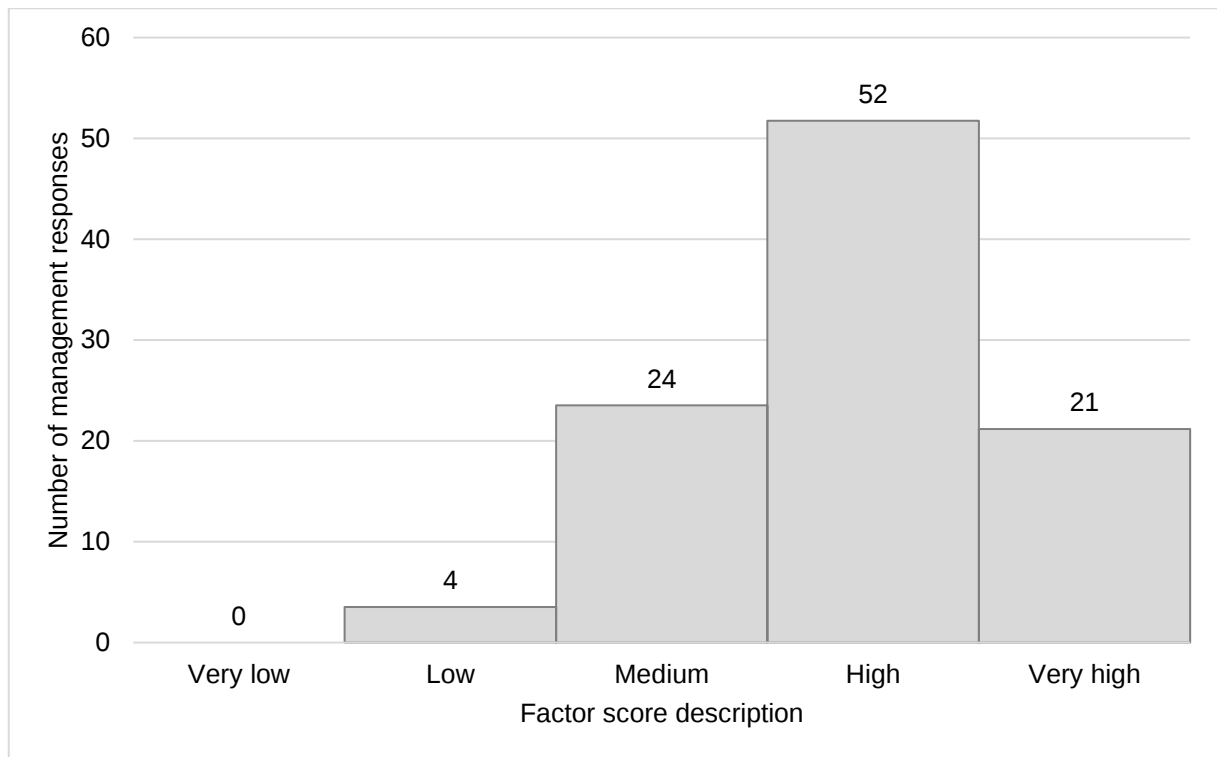


Figure 5: Factor 2 risk culture scores of management employees.

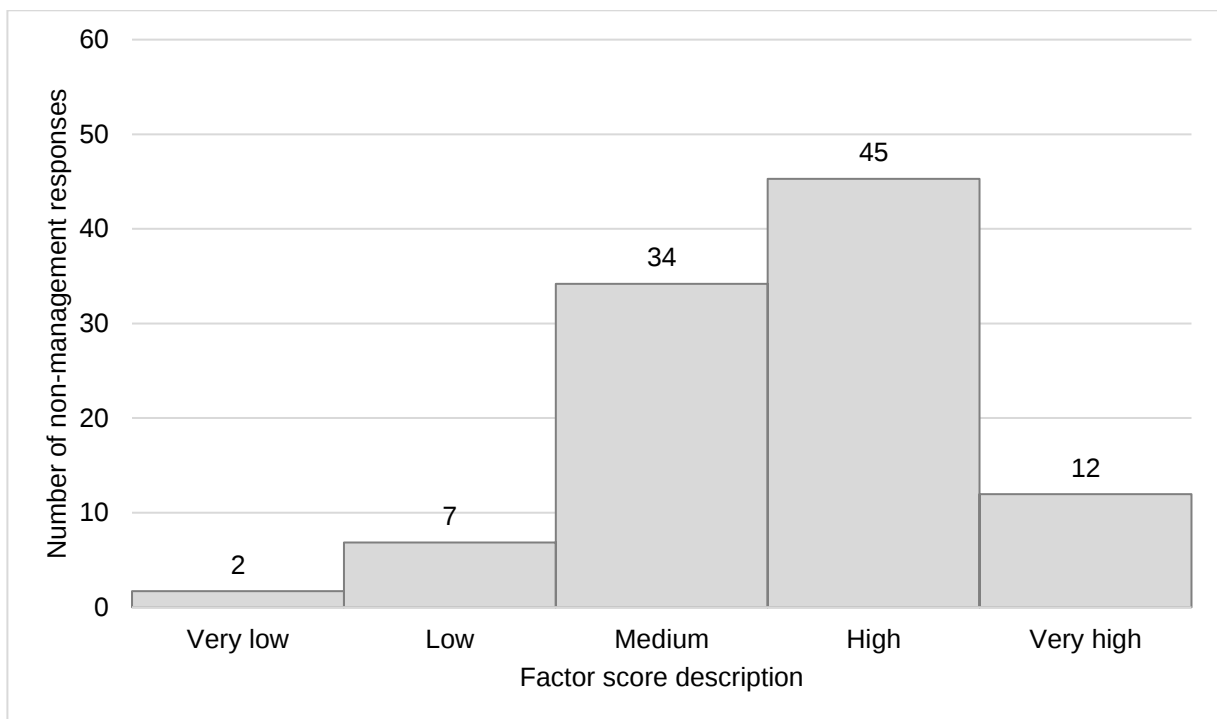


Figure 6: Factor 2 risk culture scores of non-management employees.

Table 8 indicates the significant difference between management and non-management employees when comparing the *perceived comfort with own risk management role*. To further investigate this significant difference, further tests were done comparing the respondents by role to identify which

roles differed. Table 9 compares the respondent's *perceived level of comfort with own risk management role* by their current role. The perceptions by branch managers were significantly higher, with a mean factor score of 91 compared to non-management whose mean score was 67.

The significant differences between the management employees (branch managers) and non-management employees (service consultants) may be due to the management employees taking an active branch role in risk and making-decision compared to the non-management employees whose role is more prescribed and transactional.

Table 8: Comparison of management and non-management perceived comfort with own risk management role

Level of role	N	Wilcoxon Mean Score	Chi-square test statistic	p-value	Significant difference at $\alpha=0.05$
Factor 2: Perceived comfort with own risk management role					
Management Branch managers	85	117	10.14	0.001	Yes
Operations managers					
Non-management Service consultants	117	90			

Table 9: Comparison of the perceived level of comfort with own risk management role

Level of role	N	Wilcoxon Mean Score	Chi-square test statistic	p-value	Adjusted p-value	Significant difference at $\alpha=0.05$
Factor 2: Perceived comfort with own risk management role						
Management Branch manager	25	91	7.22	0.007	0.022	Yes
Non-management Service consultant	116	67				
Management Operations manager	61	101	4.96	0.026	0.078	No
Non-management Service consultant	116	83				

In contrast, the perceptions of operations managers achieved a mean score of 101 compared to non-management who scored a mean of 83, recording no difference between the two groups. Despite the management role performed by the operations managers, this indicates a possible lack of awareness and discussion about risk relating to work related objectives. (Cortez, 2011), highlights the view that risk needs to be discussed and measured in a common language and that all employees should understand everything about the product they offer, down to the last detail.

The close working relationship among the management employees (operations managers) and non-management employees (service consultants) due to their direct reporting lines may have contributed to their lack of differences between their distributions.

Although differences between management and non-management employees might have been expected because of the relationship gap between the groups (Figure 7), it is important for non-management employees to improve their level of comfort with their own risk management role in order to help them to avoid or to manage operational risks related to their roles. For example, improving the understanding of standard operating procedures related to their work could help to improve their quality of work to reduce errors and to avoid non-conformity to standard operating procedures.

When considering the differences observed between management and non-management responses to Factor 2 items, other contributing factors to the variations were the high selection of *I do not know* and *not at all* answer options by the non-management employees (Factor 2 full item responses by participants' role are included in the Appendix B).

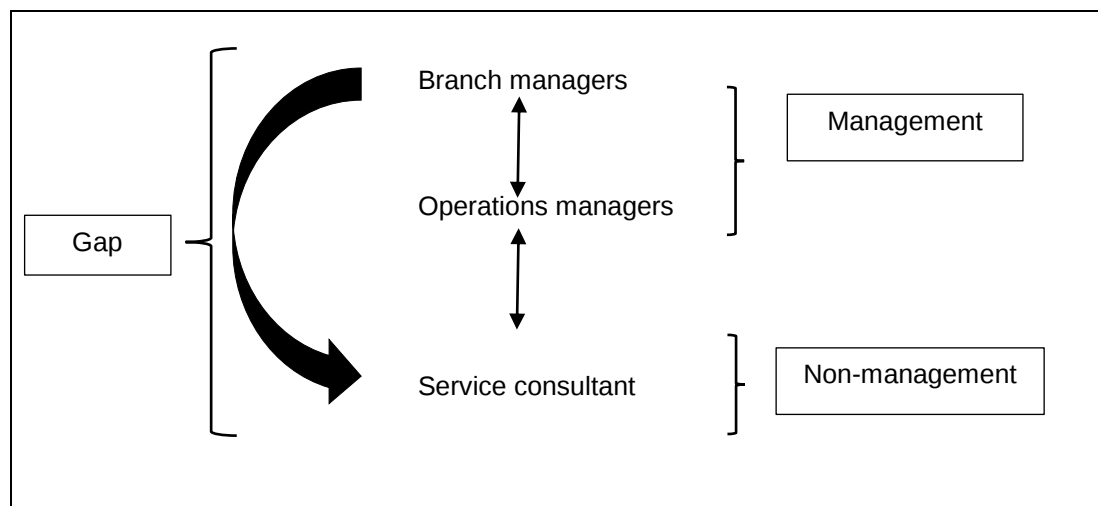


Figure 7: Relationship gap between management and non-management employees.

2.4.2.2 Factor 1 and Factor 2 comparative analysis

The primary aim of our study was to compare the perception of risk culture between management and non-management employees. The comparison between how well risk was integrated in decision-making compared to how well the employees were comfortable with their own risk management role is reflected in Figure 8. The results indicate a more positive response with the *comfort with own risk management role* than with the *perceived level of integration of risk during decision-making* in the division. This perception was expected as, from the population sample, it

appeared as if the respondents had a more optimistic view of themselves compared to others (self-selection bias). (Whitman & Woodward, 2012) suggest, that self-selection and confidence ratings are likely to be affected by familiarity with the subject matter. This suggestion applies to the sample given the high (90%) number of respondents who have reported to have been within the same role for more than 10 years, and could be the reason for the self-selection bias.

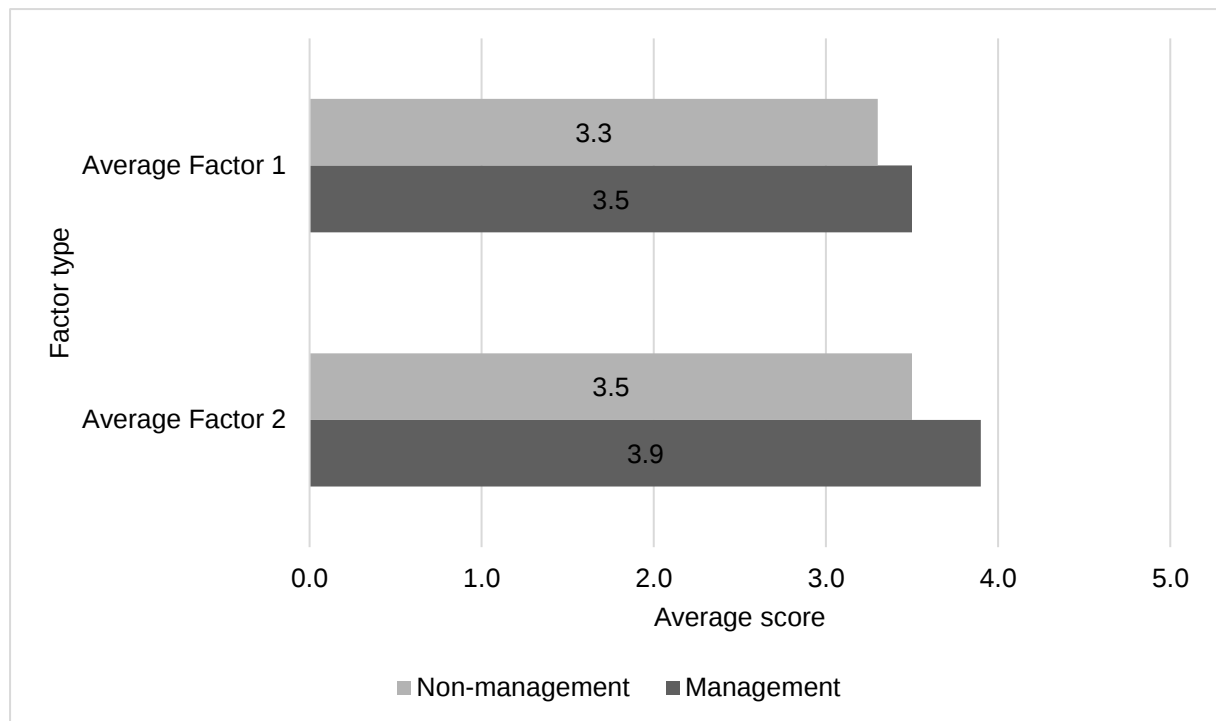


Figure 8: Factor 1 and Factor 2 comparative analysis between management and non-management.

2.5 I do not know analysis

To avoid forcing respondents into selecting answers in cases where they did not know the answer during their completion of the survey, the *I do not know* or *I do not understand* answer option was added (the overall *I do not know* scores per employee level are included as Appendix C).

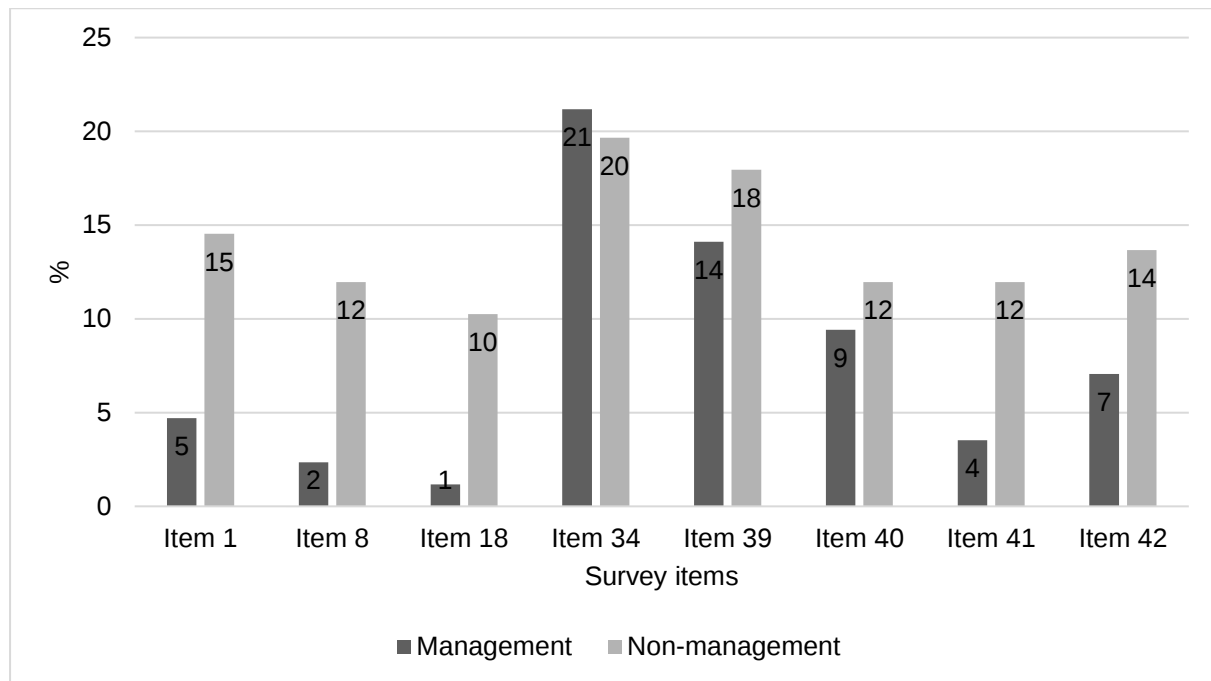


Figure 9: *I do not know* scores according to employee level and scores $\geq 10\%$

Figure 9 focuses on questionnaire items that received 10% and more *I do not know* or *I do not understand* answer scores. The details of the illustrated items ranking from the highest received score are presented in Table 10.

Table 10: *I do not know* statements ranked from the highest as selected by respondents

Rank	Item No.	Question relating to item
1	34	Risk training initiatives
2	39 and 40	Punishment and rewards linked to risk
3	1, 8, 18, 41, 42	Risk role

Non-management employees recorded the highest *I do not know* answers on most of the items as compared to management employees. This was expected owing to the transactional nature of their roles. Conversely, item 34 received the highest result of *I do not know* responses from both groups of about 20% because of the absence of risk training and awareness within the division, presenting an opportunity to improve risk culture in the division through risk training interventions. (Cortez, 2011), indicates that risk awareness is important for everyone to understand, as their responsibility towards risk management and training can be used to embed a conscious culture into the individual attitudes of employees.

Rewards and punishment ranked second. The selection of *I do not know* by management employees for items linked to rewards and punishment was of concern, as these items formed part of the

management key performance indicators. This supports the suggestion by (Thomas, 2012) that risk management is often viewed as a checklist exercise. The absence of risk related responsibilities within the non-management employees was a possible contribution to their high choice of the *I do not know* answer statements for most of the items.

2.6 Areas of improvement

At the end of the survey the respondents were provided an opportunity to share ideas for improvement. These inputs were given in terms of (1) organisational characteristics that assists respondents to include risk when making decisions, and (2) which areas the respondents believed could be improved in order to increase the inclusion of risk when making decisions.

The top four ideas are listed in Figures 10 and 11 based on the responses received from the questionnaire.

Accountability for including risk when making decisions was unanimously selected by both management and non-management as the highest motivator to include risk when making decisions. Though a significant difference was observed between the two groups of respondents regarding *own comfort with own risk management role*, this result suggests that understanding their risk accountability was acknowledged by all the respondents.

To *increase the inclusion of risk when making decisions*, most respondents chose *the shared understanding of risk*, which according to (The Institute of Risk Management, 2014) can have an influence on people's perception of risk culture. This selection by the respondents suggests that the 20% of the participants who selected the *I do not know* answer responses when completing the survey might have been due to the lack of shared understanding of risk by the respondents. *Leadership: tone from the top* also received a high score, supporting the view (Australian Prudential Regulation Authority, 2016; Ring et al., 2016) that the tone from the top is an indicator of a sound risk culture.

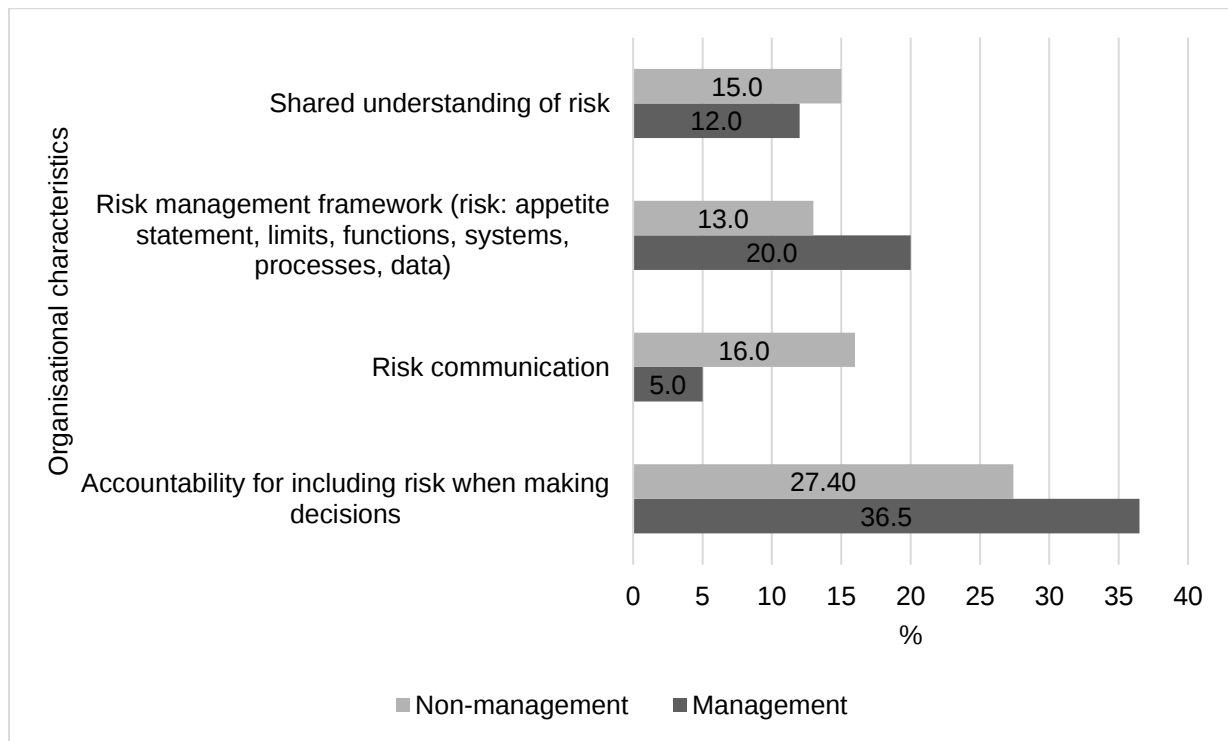


Figure 10: Organisational characteristics that help employees to include risk during decision-making.

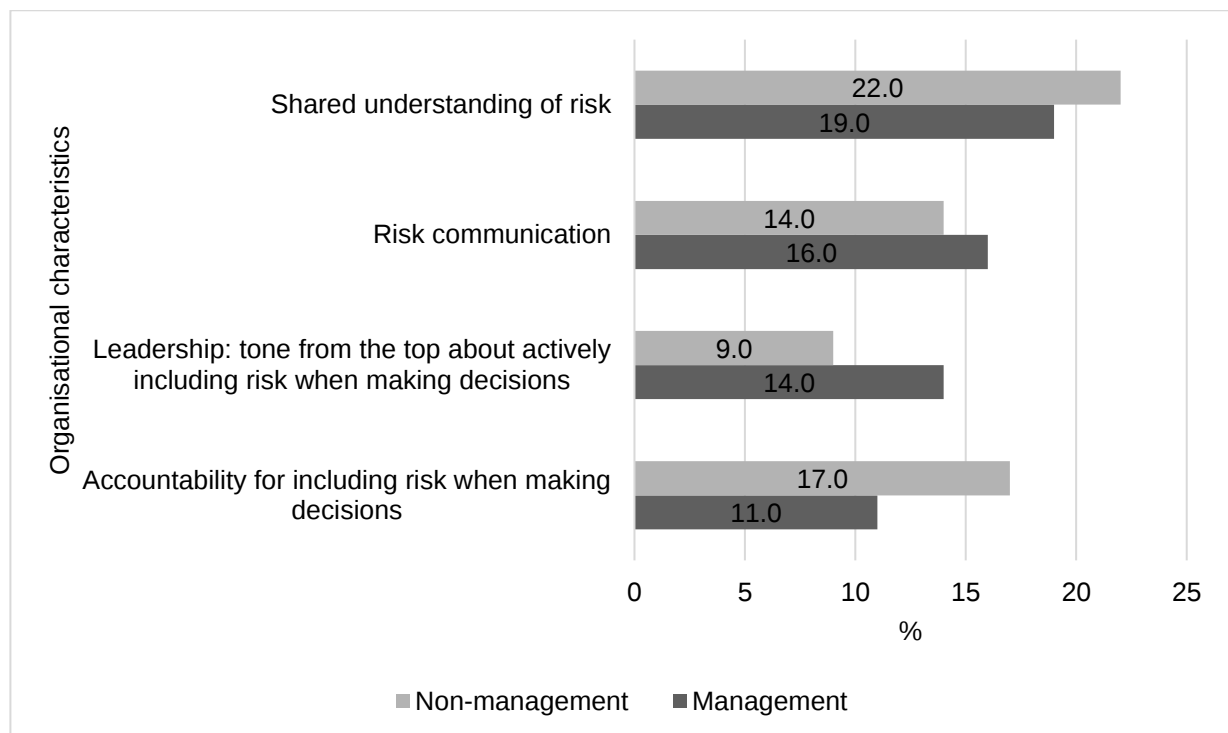


Figure 11: How employees perceive the division can improve the inclusion of risk in decision-making.

These results provide insightful information for the division's senior management to understanding what characteristics influence employees including risk when making decisions and on what the

division should focus on to improve the inclusion of risk in decision-making. This will assist the division in integrating risk when making-decisions and, in return, build a sounder risk culture.

2.7 Conclusion

This study aimed to contribute towards knowledge about risk management in the public sector and to provide insights into the risk culture perceptions of non-management and management employees as to how they include risk in decision-making. (Power, 2004) states that the public sector globally is starting to take notice of the detrimental impact that improperly managed risk management might have on the achievement of successful service delivery.

In support of the null hypothesis, the results of the survey indicated that both management and non-management employees had a similar perception of risk culture in the organisation. The perceived risk culture within the operations division in this study seemed to be influenced by *leadership tone from the top, shared understanding of risk and the communication of risk*. Though the respondents understood the *accountability for including risk when making decisions*, they did not have a high level of *perceived comfort with their own risk management role*. This could mean that the respondents might have had basic knowledge about risk and risk management and, if more risk information could be communicated from the top, this could lead to an increased understanding of risk and respondents might become more comfortable with risk within their own roles.

It was assumed by the researcher that managers undertake more accountability and role related risk decision-making than non-managers, which could give them have a higher perception of risk culture. Surprisingly, the findings of the perceptions of risk culture between the groups in this study did not show any differences. Overall, the respondents' answers indicated an element of non-commitment to their perceived risk culture. This non-commitment presents an opportunity for senior branch management to increase risk awareness through targeted risk training interventions and dedicated branch risk communication. These opportunities might not only increase the employees' perceptions of risk culture but also allow them to report risks better through understanding their operational risk losses. Improving the perceived risk culture can help to build a culture that encourages effective risk management, supports open communication, and increases sharing knowledge of and commitment towards ethical and accountable business behaviour (Inouye, 2014). These research findings provide a starting point for management teams in the public sector to increase the perceived value of including risk in decision-making and as such to build a strong risk culture. Using the Risk Culture Scale for this study aimed to contribute towards supporting the scale as a valid instrument to measure risk culture within the public sector.

The results further suggest that the more people within the same connected roles spend time together, the more similar their perceptions. Although this result presents a gap on the perceptions of risk culture among people from the same connected roles, it can also yield positive results for the

organisation. If the division's perception of risk culture is high, it could mean that everyone within the division has the same view and understanding of risk, increasing the level of risk integration in decision-making. In addition, the perceptions of new employees introduced to the division may become quickly influenced owing to the high number of similar views.

The results of the study indicate the importance of understanding operational risks within any organisation. This supports (Blunden & Thirlwell, 2013), who state that, by definition, operational risk can occur within all organisations irrespective of their size and complexity. Lack of operational risk management has the potential to trigger silo-based decision-making which could result in losses in the organisation. The inability of an organisation to perceive risk can lead to risk management failure, resulting in higher risk acceptance and encouraging risk behaviour that can negatively impact government's service delivery capacity, as stated by the (National Treasury, 2009), as well as further undermining the public's trust in government.

The survey findings will be shared with branch operations senior management to enable them to explore the research recommendations and to help them to identify areas of activity that could improve branch operation's risk culture. These findings could also be used as a basis for future research or branch operational risk improvement initiatives.

Following this study's recommendations for future risk initiatives for the public service in this study, the organisation could focus in particular on how risk communication and employee risk knowledge could be developed to better the shared understanding of risk. Possible future research within the public sector could focus on how the understanding of employees' own risk management role could be improved.

Number of words:

Abstract: 295 (max: 300 words)

Article: 6 076 (max 8,000, excluding abstract and references)

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CHAPTER 3: REFLECTION

Working within the public sector responsible for customer service, a person is responsible for how the public perceive the public sector's service deliver capacity. Starting off my research I could not narrow down ideas to a specific topic that could explore the perception of risk culture within public service organisations. I researched previous academic literature to try to find the best way to approach the study. It was challenging to find articles on operational risk within the public service in general and in the South African public service specifically; however, with more searches through the university's database by breaking down the research topic into themes I managed to identify a limited number of relevant articles.

Being new within the academic writing sphere, it took a lot of reading and exploration to try to understand the art of academic writing. The first assignment, which was about academic writing, assisted me in understanding the foundation for academic writing, and which to date I still refer to. It was then that I had the personal revelation that academic writing is similar to art because in order for the author's research to make an impact, the researcher needs to have passion for his/her topic to be able to portray it in a way that will appeal to the reader.

The aim of the study was to establish the risk culture of the division with the expectation that the risk culture of management employees would be higher than that of non-management. These expectations were not realised as similar perceptions between the groups were recognised. Although the expectations were not met, the research outcomes presented an opportunity for the organisation as it highlighted characteristics to help employees to include risk when making decisions and areas of improvement that could assist them in including risk during decision-making.

The applied risk management master's degree has provided me with an opportunity to learn more about risk and risk management which is my fascination. The collective efforts over the past two years with the different lecturers and the students from different sectors provided me with invaluable experience and exposure to ways in which others deal with risk and risk management related matters. The academic writing experience, and the risk and risk management exposure gained from this course have had a positive impact on both my personal and professional life and I now consider myself as professionally better with my newly acquired skills.

4. APPENDICES

4.1 Appendix A: UARM Risk Culture Scale (UARM RCS-2019) An Overview

UARM Risk Culture Scale (UARM RCS-2019)

An Overview

Hermien Zaaiman and Hedré Pretorius

Aims

This document provides a summary of the North-West University (NWU)'s Centre of Applied Risk Management (UARM) Risk Culture Scale (UARM RCS). Current approaches to risk culture tend to be qualitative, using a general view of what risk culture is. Where risk culture questionnaires are applied, it is important to ascertain the validity and reliability of the resulting information against the broad construct of risk culture. The UARM Risk Culture Scale (UARM RCS) was developed to meet the need for an academically validated instrument to measure the risk culture in organisations.

Approach

Multiple definitions of risk culture exist in regulatory papers and risk standards. One of the more comprehensive definitions is that of the Basel Committee on Banking Supervision (BCBS) defining risk culture as: "A bank's norms, attitudes and behaviours related to risk awareness, risk-taking and risk management, and controls that shape decisions on risks. Risk culture influences the decisions of management and employees during the day-to-day activities and has an impact on the risks they assume"(Basel Committee on Banking Supervision, 2015).

However, applying such broad definitions to evaluate and improve the risk cultures of organisations is complex. This process requires the development of instruments to assess and measure specific aspects of risk culture. The UARM RCS was developed using our decision-focused view of risk culture as basis for the development and testing of its items:

'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.'

The scale items were therefore developed to represent aspects of the integration of items in risk culture based on our Risk Culture Indicator (RCI) model, described by Zaaiman in the Appendix: 'Risk Culture Indicator Model – An Overview'.

Status

The UARM RCS provides three sets of results that can be used to assess the:

1) Two risk-culture-related factors

The 42-item five-point Likert scale has been developed and piloted over 3 years (2016-2018). The scale is now mature and can be regarded as valid, as the scale items map to the RCI model and has been shown in 13 studies to work well across sectors, functions and management levels (content validity). The scale also shows a high Cronbach α reliability coefficient of 0.97 (internal consistency). This mini-dissertation study forms part of further testing of the scale.

The scale measures two risk-culture-related factors:

- Perceived level of integration of risk in decision-making processes (24 items)

Note: Although the items cover the indicators in the RCI Model, only one factor is found in the answer data. This can be ascribed to the interlinked nature of the indicators and provides an indication of the validity of the scale for the study of this focused view of risk culture.

- Comfort with own risk management role (18 items)

The factor scores are calculated as the average of the responses over the items making up the factor. This translates to the following scale for the decision-based view of risk culture used in this study.

		UARM RCS-2019 (FS = Factor Score)				
		1.0 $\leq$ FS < 1.5	1.5 $\leq$ FS < 2.5	2.5 $\leq$ FS < 3.5	3.5 $\leq$ FS < 4.5	4.5 $\leq$ FS $\leq$ 5.0
	<i>Item response options related to the level provide an indication of group perception associated with the level</i>	Very low level: Never and Not at all	Low level: Infrequently and Not well	Medium level: Sometimes and Moderately well	High level: Well and Usually	Very high level: Always and Perfectly
Factor 1	Perceived level of integration of risk in decision-making processes	Very low level of perceived integration	Low level of perceived integration	Medium level of perceived integration	High level of perceived integration	Very high level of perceived integration
Factor 2	Comfort with own risk management role	Very low level of comfort	Low level of comfort	Medium level of comfort	High level of comfort	Very high level of comfort

2) The I-do-not-know/I-do-not-understand-the-statement answer option

Item response options include an 'I do not know' or "I do not understand the statement" option to mitigate possible spurious effects of respondents who truly do not know the answer to an item. The I-do-not-know answers were not included in the scale's factor analysis, and only participants with fewer than 30% of I-do-not-know answers (per factor) are included in the calculation of the factor scores. This means that the participant has to have answered at least 16 of the items in factor 1 and 12 items in factor 2 to be included in the calculation of the factor score.

In addition, the full set of the study's I-do-not-know answers is analysed separately, thereby providing possibly valuable information on the levels of uncertainty about risk-culture-related aspects in the study sample(s) that could be indicative of possible risk-related knowledge in the study population(s).

3) Two further diagnostic questions

The scale also contains two further RCI model-based diagnostic questions:

'Which organisational characteristic assists you most to include risk when you make decisions?'

'To improve the inclusion of risk in decision-making in the organisation, I believe that we must start with improving....'

The options to these responses correspond to the risk culture indicators in the UARM risk culture indicator model. These options are presented in alphabetical order.

Evaluating the responses to these questions allow for suggestions on the way forward on improving the risk culture of the organisation.

Scale application

This is an online scale housed on Research.net (SurveyMonkey's professional (Premier) plan). Data gathering is done by UARM and the data sets are housed and analysed by us. Each instance of the scale is set up for anonymous data capturing, meaning that the respondents cannot be identified. After formal permission to apply the scale has been obtained from the organisation and NWU ethics clearance for the study, a suitable project sponsor in the studied organisation sends out the weblink to the scale (not the student doing the study). The scale is closed after a maximum of two reminders to complete the survey. Study-relevant data results are provided to the student (and organisational project sponsor, if requested) in analysed, aggregated format.

Interpretation of results

Scale results have to be interpreted in the context of the study for which the results were obtained.

To keep in mind when analysing and interpreting the scale results:

- 1) In a scale like this, only the group response makes sense and the individual's factor score cannot be used as an indication of the individual's 'risk culture' as culture is always a group concept.
- 2) Levels of the measured factor could be inflated by response biases (e.g. positive response bias and social desirability influence).
- 3) The results of the scale are valid at factor level. A scale-based factor is based on the coherence for the group of items that make up the factor. These items were designed based on the

measurement aims of the scale but do not contain every possible item that could have been used. Other items that refer to the construct may have shown the same result, implying that focusing on differences at item level could divert the user's attention to inadequately tested aspects of the underlying construct, while not considering the validated construct. The scale may be used to provide indications of where risk culture-related issues lie in the organisation, but was not designed to identify micro-level issues. Other scales and research methods are required to do detailed follow-up investigations.

For more information on the UARM RCS, please contact: Hermien Zaaiman at

hermien.zaaiman@nwu.ac.za

<http://commerce.nwu.ac.za/uarm>

4.2 Appendix B: Factor 2 item responses per respondent's role

Table 11: Factor 2 item responses per respondent's role

Item 21	Role type		
	Branch manager	Operations manager	Service consultant
I do not understand the statement	0%	2%	3%
Not at all	0%	2%	7%
Not well	8%	11%	12%
Moderately well	28%	25%	26%
Well	48%	46%	39%
Perfectly	16%	15%	13%
Item 22	Role type		
	Branch manager	Operations manager	Service consultant
I do not know	0%	0%	1%
Never	0%	0%	3%
Infrequently	8%	3%	11%
Sometimes	20%	16%	15%
Usually	36%	36%	40%
Always	36%	44%	31%
Item 23	Role type		
	Branch manager	Operations manager	Service consultant
I do not know	0%	0%	0%
Never	0%	5%	12%
Infrequently	12%	10%	11%
Sometimes	24%	21%	28%
Usually	40%	36%	30%
Always	24%	28%	18%
Item 24	Role type		
	Branch manager	Operations manager	Service consultant
I do not understand the statement	0%	0%	3%
Not at all	0%	2%	1%
Not well	0%	3%	7%
Moderately well	16%	15%	27%
Well	44%	43%	39%
Perfectly	40%	38%	24%

Item 25	Role type		
	Branch manager	Operations manager	Service consultant
I do not understand the statement	0%	0%	2%
Not at all	0%	0%	3%
Not well	4%	5%	14%
Moderately well	20%	31%	28%
Well	40%	39%	35%
Perfectly	36%	25%	18%
Item 26	Role type		
	Branch manager	Operations manager	Service consultant
I do not understand the statement	4%	0%	1%
Not at all	0%	3%	3%
Not well	16%	11%	22%
Moderately well	16%	31%	26%
Well	44%	36%	34%
Perfectly	20%	18%	16%
Item 27	Role type		
	Branch manager	Operations manager	Service consultant
I do not understand the statement	0%	0%	3%
Not at all	4%	2%	3%
Not well	0%	11%	12%
Moderately well	12%	25%	28%
Well	56%	39%	35%
Perfectly	28%	23%	18%
Item 28	Role type		
	Branch manager	Operations manager	Service consultant
I do not understand the statement	4%	0%	1%
Not at all	0%	2%	3%
Not well	0%	2%	9%
Moderately well	12%	20%	27%
Well	56%	49%	41%
Perfectly	28%	28%	20%

Item 29	Role type		
	Branch manager	Operations manager	Service consultant
I do not understand the statement	4%	0%	0%
Not at all	0%	0%	3%
Not well	0%	3%	13%
Moderately well	12%	25%	21%
Well	32%	34%	39%
Perfectly	52%	38%	25%
Item 30	Role type		
	Branch manager	Operations manager	Service consultant
I do not understand the statement	0%	0%	1%
Not at all	0%	2%	5%
Not well	4%	3%	11%
Moderately well	16%	23%	23%
Well	52%	46%	41%
Perfectly	28%	26%	19%
Item 31	Role type		
	Branch manager	Operations manager	Service consultant
I do not know what this means	0%	0%	1%
Not at all	0%	7%	9%
Not well	0%	10%	13%
Moderately well	20%	25%	28%
Well	56%	41%	41%
Perfectly	24%	18%	9%
Item 32	Role type		
	Branch manager	Operations manager	Service consultant
I do not understand the statement	0%	2%	3%
Not at all	0%	3%	5%
Not well	8%	8%	9%
Moderately well	20%	21%	33%
Well	52%	41%	37%
Perfectly	20%	25%	14%

Item 33	Role type		
	Branch manager	Operations manager	Service consultant
I do not understand the statement	0%	0%	1%
Not at all	0%	0%	3%
Not well	4%	5%	11%
Moderately well	24%	34%	27%
Well	64%	34%	43%
Perfectly	8%	26%	15%
Item 34	Role type		
	Branch manager	Operations manager	Service consultant
I have not received formal risk training in this organization	24%	20%	20%
Not at all	4%	5%	6%
Not well	16%	8%	15%
Moderately well	24%	31%	26%
Well	24%	28%	26%
Perfectly	8%	8%	8%
Item 35	Role type		
	Branch manager	Operations manager	Service consultant
I do not understand the statement	0%	2%	6%
Not at all	0%	0%	6%
Not well	4%	11%	9%
Moderately well	36%	33%	35%
Well	48%	34%	34%
Perfectly	12%	20%	9%
Item 36	Role type		
	Branch manager	Operations manager	Service consultant
I do not know	4%	0%	3%
Never	4%	3%	5%
Infrequently	0%	0%	7%
Sometimes	8%	23%	22%
Usually	28%	31%	39%
Always	56%	43%	25%

Item 37	Role type		
	Branch manager	Operations manager	Service consultant
I do not know	4%	2%	1%
Never	0%	2%	3%
Infrequently	4%	2%	8%
Sometimes	4%	13%	17%
Usually	24%	39%	35%
Always	64%	43%	36%
Item 38	Role type		
	Branch manager	Operations manager	Service consultant
I do not understand the statement	0%	2%	3%
Not at all	0%	2%	7%
Not well	16%	7%	12%
Moderately well	16%	25%	23%
Well	36%	28%	31%
Perfectly	32%	38%	24%

4.3 Appendix C: *I do not know* scores per employee level

Table 12: *I do not know* scores per employee level

Item	Percentage score per employee level	
	Management	Non-management
1	5	15
2	1	7
3	2	5
4	2	8
5	0	2
6	0	6
7	0	4
8	2	12
9	1	4
10	0	3
11	2	5
12	1	3
13	2	6
14	2	6
15	1	2
16	4	9
17	0	2
18	1	10
19	1	3
20	1	3
21	1	3
22	0	1
23	0	0
24	0	3
25	0	2
26	0	2
27	0	3
28	0	2
29	0	1
30	0	1
31	0	1
32	1	3
33	0	1
Items	Percentage score per employee level	

	Management	Non-management
34	21	20
35	1	6
36	0	3
37	1	2
38	1	3
39	14	18
40	9	12
41	4	12
42	7	14