

Stakeholder perception of risk tone in an insurance company

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Mini-dissertation submitted in *partial* fulfillment of the requirements for the degree
Magister Commercii in Applied Risk Management at the Vaal Triangle Campus of the
North-West University

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November 2016

PREFACE

This mini-dissertation is the final deliverable in the Centre for Applied Risk Management (UARM)'s taught master's degree programme. The mini-dissertation was written in article format and consists of three sections: Research project overview, Article, and 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 on 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 risk tone at different stakeholder levels within a leading insurance company in South Africa was evaluated in this study. Risk tone was viewed as both the result, and behavioural enabler of risk culture. The pilot version of the UARM Risk Culture Questionnaire (UARM RCQ-2016) was used as the survey instrument. The questionnaire consists of demographic, risk culture and diagnostic items based on key practices linked to the integration of risk management principles into organisational management. The population for this study consisted of risk practitioners across the organisation as well as a smaller business sample. Eighty-three employees completed the survey. This sample allowed for preliminary conclusions on the usefulness of this questionnaire to assess the organisation's risk culture. Statistically significant differences at the 90% confidence level were found for factor scores and individual item responses between management levels, as well as between risk stakeholder and business management functions. Management level differences indicated that senior managers felt more comfortable with their own understanding of risk in the organisation than middle management and non-managers. Risk management stakeholders were more positive about the value that risk management adds to business management than the business participants. The business participants were more confident in their knowledge of how well the organisation is doing in meeting its objectives. Participants provided comments on how risk management can be improved with key recommendations being improving accountability and responsibility, training, and awareness and communication. In addition, semi-structured interviews were conducted with a sample of the executive committee members of the organisation and key improvements noted; these included a more uniform approach across the organisation and simplifying technical concepts. These findings provide diagnostic pointers to areas where the integration of risk principles should be addressed to improve the risk tone and culture in the organisation. Based on the research results, the questionnaire shows promise for more extended use by the organisation and other insurance companies.

Key words – risk tone, risk culture, risk understanding

ACKNOWLEDGEMENTS

I thank God for the strength, guidance and wisdom that enabled me to complete this academic research project successfully.

In addition I acknowledge the following person(s);

- My family – thank you for your patience, understanding and belief in me. You've been very understanding and afforded me the necessary time, but also put up with my mood swings;
- My direct line manager – thank you for the support provided during my term of study and for allowing me the time to attend lectures and work on this research project. Your sponsorship and keen interest in the overall study and dissertation are well received;
- My organisation – I would like to thank the organisation that formed part of this study. I am also grateful to all the study participants, who took time off from your busy schedules to participate in this research;
- My study supervisor, Professor Hermien Zaaiman, for your support, guidance, intellectual know-how and wisdom. Navigation through this journey would have been rather stormy without you.

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RESEARCH PROJECT OVERVIEW

How does the study fit into the field of risk management?

Risk management as a discipline is crucial to the sustainability of financial services institutions. Financial services institutions can be generally classified as organisations that buy and sell risk. Although many approaches to risk management exist, most organisations adopt an enterprise risk management view that encompasses all risks the organisation faces in reaching its organisational objectives. The enterprise risk management approach provides a classification of risks with associated naming conventions and risk processes, which groups risks into classes as per the organisation's functional make-up. All of this is underpinned by an overall organisational culture. Risk culture is a sub-culture of organisational culture.

Why did the student decide to study this specific topic?

The organisation where the student is currently employed has undertaken a broader organisational culture survey across its workforce. Having already implemented some of the improvements based on that exercise, the organisation expressed a need to look into some of the behavioural issues identified earlier. It is understood that some of these behavioural issues have their roots in the organisation's overall risk culture. Risk culture, and specifically risk tone, are therefore a very real and relevant topic for the organisation.

In addition, this study is expected to contribute to the broader community of knowledge and practice in the form of other organisations and fellow academic researchers. A detailed journal evaluation exercise to identify a suitable journal for this work was conducted by the student, assisted by the university and the study supervisor. Based on the evaluation, I concluded that the nature and topic of this study is aligned to similar articles published in the last five years in the *Journal of Risk Research*. This journal was therefore selected as the preferred journal for this study. The *Journal of Risk Research* is an international peer-reviewed journal that is committed to publishing theoretical and empirical research and commentaries at the forefront of the communication, regulation, and management of risk. This article should contribute to the journal in the less-published field of the perception of risk tone across different stakeholder groups in an insurance organisation. The writing guidelines for the journal are available at:

[http://www.tandfonline.com/action/authorSubmission?journalCode=rjrr20&page=instructions
#.V4u_1stPgM8](http://www.tandfonline.com/action/authorSubmission?journalCode=rjrr20&page=instructions#.V4u_1stPgM8)

ARTICLE

Article title:

Stakeholder perception of risk tone in an insurance organisation

1. Abstract

The risk tone at different stakeholder levels within a leading insurance company in South Africa was evaluated in this study. Risk tone was viewed as both the result of and behavioural enabler of risk culture. The pilot version of the UARM Risk Culture Questionnaire (UARM RCQ-2016) was used as the survey instrument. The questionnaire consists of demographic, risk culture and diagnostic items based on key practices linked to the integration of risk management principles into organisational management. The population for this study consisted of risk practitioners across the organisation as well as a smaller business sample. Eighty-three employees completed the survey. This sample allowed for preliminary conclusions on the usefulness of this questionnaire to assess the organisation's risk culture. Statistically significant differences at the 90% confidence level were found for factor scores and individual item responses between management levels, as well as between risk stakeholder and business management functions. Management level differences indicated that senior managers felt more comfortable with their own understanding of risk in the organisation than middle management and non-managers. Risk management stakeholders were more positive about the value that risk management adds to business management than the business participants. The business participants were more confident in their knowledge of how well the organisation is doing in meeting its objectives. Participants provided comments on how risk management can be improved, with key recommendations being improving accountability and responsibility, training, and awareness and communication. In addition, semi-structured interviews were conducted with a sample of the executive committee members of the organisation; key improvements noted included a more uniform approach across the organisation and simplifying technical concepts. These findings provide diagnostic pointers to areas where the integration of risk principles should be addressed to improve the risk tone and culture in the organisation. Based on the research results, the questionnaire shows promise for more extended use by the organisation and other insurance companies.

Key words – risk tone, risk culture, risk understanding

2. Introduction

In this study, I evaluated the risk tone at different stakeholder levels and among functional groups in a leading insurance company in South Africa. The business is a diversified financial services provider which is also undergoing an operating model change. Having already conducted a broad-based culture survey in support of the operating model change, specific outcomes of the general cultural survey highlighted cultural behaviour patterns that were not always in line with the company's stated value system. As an example, some of the survey responses referred to a lack of accountability from certain areas within the company even though accountability is a core value of the company.

Specific cultural attributes came to the fore during the process of understanding the root causes of the broad-based survey outcomes. One such root cause revolved around risk culture. During discussions with key organisational stakeholders on the overall results of the survey, the term "tone at the top" was commonly mentioned. During the initial literature review on the concept of tone at the top, it was established that the terms tone at the top, tone in the middle, ethical tone and risk tone are used interchangeably among regulators, and consulting houses. Baker (2009) argues that the challenge is not only to set the right tone at the top, but also to ensure that it is in harmony with the tune in the middle, which ultimately ensures that the same tone is cascaded across the organisation. In addition, Baker (2009) also notes that tone in this instance refers to the unwritten real world rules that describe how employees across the organisation should behave and work. This definition clearly links to the definitions of risk culture described in this article's background section.

Academic and general literature searches for risk tone resulted in many references to risk tone related terms by regulators, some academically published articles and a host of published content from consulting houses. My conclusion is that risk tone as a concept is generally used without a generally accepted published academic definition. For purposes of this study, the student describes risk tone as both the result of and a behavioural enabler of risk culture. The literature review in the background section explains how this description is arrived at.

The subject of this study is a diversified financial services organisation based in South Africa with limited operations outside the country. The company is listed on the Johannesburg Stock Exchange. Its core business includes life and non-life insurance, savings investments and asset management, healthcare administration and employee benefits. These products and service offerings are intended for, and provided to, all market segments. The insurance

business is all about managing risk, since its core activities involve pricing for and underwriting uncertainty. Insurance is generally categorised into life or non-life contracts. In the case of life insurance, the insurer issues a contract to the policyholder, then collects premiums from these policyholders, performs a host of reserving functions and invests the premiums into investments according to risk appetite measures. At contract maturity, the insurer reimburses the policyholder or nominated beneficiaries the contractual amounts less fees due. In the case of non-life insurance, the policyholder has a need to insure against events. Similar to life contracts, premiums are collected and contractual obligations are settled when a claim arises after due processes have been followed.

2.1 The insurance industry during the 2008 financial crisis

The consequences of the 2008 financial crisis affected banks, insurers and other financial market participants. According to Baluch, Mutenga, and Parsons (2011), the projected total losses from the financial crisis was around US\$4.1 trillion, of which about two-thirds was expected to constitute write-downs by banks and one-third losses suffered by insurance companies, pension funds and other financial institutions. This puts into perspective the sheer size of the direct financial losses related to the crisis and the share of the insurance industry. Depending on actual experience, insurance business lines find themselves in either a 'hard' or 'soft' market. 'Hard' refers to less underwriting capacity being available or available at much higher premiums, and 'soft', the opposite. According to Chappe, Semmler, and Nell (2013), the 2008 crash was different; although it started in the USA, the financial economic and social impacts were felt world-wide. This crisis was created by the financial sector but played out in many other parts of the economy.

2.2 The South African insurance market

The South African insurance market consists of the life and non-life insurance sectors. The value of the market can be demonstrated by using the total gross written premium income. According to an industry report, *Insurance in South Africa*, produced by MarketLine (2016), the South African insurance market was expected to generate total gross written premiums of approximately \$55.6 billion in 2015, which represents a compound annual growth rate (CAGR) of just over 12% between 2011 and 2015.

3. Background

This study focused on how different stakeholder or management groups within the South African insurance company perceive risk tone. Much has been written about risk culture since the 2008 global financial crisis, yet the academic literature appears to contain little on

the related concept of risk tone. This article brings together a research journey that started out by analysing the concept of risk tone. Risk tone has its roots in risk culture, which can be referred to as a sub-culture of organisational culture. Schein (2010, p. 55) argues that shared assumptions that create sub-cultures most often form around the functional units of the organisation. One such functional unit is the risk management unit of a given organisation. Similarly, other functional units such as the finance unit or information technology unit could be seen as units with their own sub-culture. As an example, a business management function that creates client value propositions could be seen as having a formal culture, or an innovative culture. For the purposes of this study, the total risk management function as well as a business management sales and fulfilment unit were chosen as part of the overall study population. This business management unit is a stakeholder of the risk management function and formed part of the overall study population, which consisted mainly of risk practitioners and a smaller business sample.

The next three sections provide a review of the three components that support the logical flow of the study, namely organisational culture, risk culture as a sub-culture of organisational culture, and the link between risk tone and risk culture.

3.1 Organisational culture

In its most basic form, organisational culture may be referred to as the way in which things are done at a specific organisation. Schein (2010, p. 18) stated that the culture of a group can be defined as a pattern of shared basic assumptions learned by that specific group as the group solves problems. This definition favours a patterning and integration approach that is a result of the group's overall accumulated learning over a period of time.

In addition, Schein (2010, p. 22) argues that culture and leadership are two sides of the same coin such that neither culture nor leadership can really be fully understood in isolation. Similarly, risk tone and risk culture can also be framed as two sides of the same coin, where risk culture assesses the organisation's overall approach to risk management on the one hand and risk tone is the result of and behavioural enabler of that risk culture.

3.2 Risk culture

A key challenge in making sense of risk culture is to agree on a clear understanding of what the term actually means. There is an extensive body of research on organisational cultures, and interest in the concept called risk culture has increased since 2008 (Power, Ashby, & Palermo, 2013). The recent literature is summarised in the next section.

Roeschmann (2014) argues that there is a difference between the risk management framework and risk culture. The risk management framework referred to in this statement includes the risk management processes, risk limits and the overall values system of an organisation. Risk culture in this instance focuses on the behaviour and actions of those who execute the overall risk management processes.

Moreover, Levy, Lamarre, and Twining (2010) argue that even where attention is paid to the organisation's risk or the risk management processes, the focus is generally skewed towards improvements in risk management systems or risk models as opposed to risk culture. Historically, regulatory obligations were limited in their explicit mention of risk culture.

The authors of the definitions given in Table 1 indicate the organisational stakeholders who typically should have an interest in risk culture. These parties include regulatory bodies, management consultants and academic sources.

Table 1 Definitions of risk culture

Definitions of Risk Culture	Author(s)
"Internal operational risk culture is taken to mean the combined set of individual and corporate values, attitudes, competencies and behaviour that determine a firm's commitment to and style of operational risk management."	Basel Committee (2003)
"A firm's risk culture encompasses the general awareness, attitude and behaviour of its employees and appointed representatives to risk and the management of risk within the organisation."	Ashby, Palermo, and Power (2012)
"The norms of behaviour for individuals and within an organization that determine the collective ability to identify and understand openly discuss and act on the organization's current and future risks."	Levy et al. (2010)
"Risk culture is a term describing the values, beliefs, knowledge and understanding about risk shared by a group of people with a common purpose, in particular the employees of an organisation or of teams or groups within an organisation."	IRM (2012)
"The organisation's propensity to take risks as perceived by the managers in the organisation."	Bozeman and Kingsley (1998)

Given these descriptions, a broad definition of risk culture should include a collective system of values, behaviours, traditions and norms that shape an organisation's risk and reward decisions. For purposes of this study, the baseline definition of risk culture, as proposed by North-West University's Centre for Applied Risk Management (UARM), is, "how groups of people integrate risk when making decisions on uncertain future events that could have a

negative impact on reaching the organisation's objectives". This definition forms part of the UARM risk culture pilot study. Additional information relating to the pilot study and the UARM risk culture questionnaire (UARM RCQ-2016) is included in Appendix 1.

3.3 Risk tone

The Financial Stability Board (2014) refers to tone at the top as an indicator of risk culture in its framework for assessing risk culture. This provides a basis to understand and interrogate the link between risk culture and risk tone. As with the link between leadership and organisational culture, the link between risk culture and risk tone goes both ways in that risk tone is framed as an indicator of tone at the top and vice versa. The framework also provides guidance by mentioning that the appropriate tone and standard of behaviour 'from the top' is a necessary condition for promoting a sound risk culture and for ensuring that it is appropriately embedded within the institution. Risk culture and behaviour in reference to tone at the top, within and across an organisation, is consistently mentioned by many of the regulators and consulting houses (The Financial Stability Board, 2014; IRM, 2012; Deloitte, 2014; Cole, 2014). Although a bias towards tone at the top is clearly evident, references to tone in the middle and tone at the bottom are also starting to find their way into the public domain, as discussed by Baker (2009).

Although there is no publicly accepted published academic definition of the term risk tone, the literature review will attempt to indicate how this term has come about. The earliest published reference to tone at the top was in 1987 as part of a publication known as *The National Commission on Fraudulent Financial Reporting*. Subsequently, limited mention was made until the 2008 financial crisis, after which a keen interest on tone within organisations and risk culture were recorded as evidenced by a large number of references in and by academics, publications from consulting houses, financial regulators and within organisations (Power et al., 2013).

Tone is the signal that is sent across the organisation, generally from top to bottom about what kind of behaviour is allowed versus behaviours that are not allowed (MacDonald, 2013). MacDonald describes organisational behaviours in relation to tone as those which should be allowed, versus those which should not be tolerated. Mayer, Aquino, Greenbaum, and Kuenzi (2012) as well as Baker (2009) maintain that leaders set the overall tone of an organisation, thereby encouraging certain behaviours. These arguments in relation to risk tone have behaviour as a common thread with examples of ethical behaviour, and behaviours driven by incentives or how employees are generally rewarded.

Levonius (2015) argues that although the tone is set at the top, it would be naive to rely solely on those at the top to drive this across the organisation. Levonius (2015) introduces a view on tone at the bottom for which he further states that the ethical tone at the bottom more accurately reflects the moral compass of an organisation. This is because employee expectations, decisions, and everyday actions are a direct outcome of how they go about their daily work tasks. In addition, their unconscious everyday work tasks, as completed by them in the workplace, are a clear articulation of their perception of the behaviours that are allowed versus those that are not allowed. If risk tone is not assessed or understood across an organisation, it could be the cause of unintended business failures such as the almost £24.2 billion that was paid by banks as compensation for incorrectly selling of Payment Protection Insurance by banks in the United Kingdom (Dunkley, 2016).

Deloitte (2014) states that the tone at the top sets an organisation's guiding values and ethical climate. This definition has the organisation's value system and ethical climate as its foundation. Ethical tone, on the other hand, singles out ethical behaviour as part of the definitions in use. Mayer et al. (2012) maintain that leaders set the ethical tone of an organisation and are instrumental in encouraging ethical behaviour, thereby reducing interpersonal conflict among their subordinates.

A key aim of this study was to test the perceived risk tone across three stakeholder groups, senior management, middle management and non-management personnel. In addition, responses between risk stakeholders as well as those from business stakeholders were also compared.

In summary, the following key words, phrases and excerpts were used in the definitions of and references to tone across an organisation:

- organisation's guiding values, ethical climate
- signal
- kind of behaviour admired / emulated – kind of behaviour not tolerated
- ethical tone
- ethical behaviour
- how they behave
- what people say
- drive their behaviour
- moral compass

By analysing the key words and phrases as listed above, behaviour is mentioned by all the commentators in the literature quoted in this study. A possible deduction based on this review of the literature is that tone at the top and across the organisation is viewed as a behavioural enabler of a risk culture.

Organisational culture is generally defined by the values system of the organisation that guides the organisation's behaviour patterns. It is fundamental that organisations keep a watchful eye on their employees making the right decisions unconsciously. Managing the expectation of delivering on short-term goals as there are always short-term organisational measurements in place, versus long-term organisational sustainability can be complex. As an example, the decision to sell a product not designed for a customer may be the right decision for the organisation's representative at that time but it could be the wrong product for the customer.

The perceived risk tone within an organisation is the tone that sets the attitude of all employees with regard to their approach to them doing their part in meeting the organisation's objectives. With consideration to the literature cited, it was decided to view risk culture in terms of the perceived risk tone across different stakeholder groups in the company of interest. The UARM RCQ-2016 questionnaire combined with semi-structured discussions was used to assess overall risk tone, and the understanding of the study population's perception of risk culture. This is further discussed under the Method section.

4. Method

The purpose of the methods used in this study was to determine the perceived risk tone at different stakeholder levels and as understood by the risk assurance and business communities in an insurance company. The UARM RCQ-2016 as well as targeted semi-structured interviews were designed and executed to test differences across these levels of stakeholders.

4.1 Research objectives and questions

The primary research question for this study is: What is the perceived risk tone across the organisation? The research objectives linked to the primary research question are listed in Table 2.

Table 2 – Research objectives, questions and method

No.	Research objectives	Research questions	Method
1.	Assess the current risk tone as per the selected population across the organisation. Assess the perceived risk tone for senior management, middle management and non-management participants. Assess the perceived risk tone across risk management stakeholders versus business management stakeholders.	What is the perceived risk tone across the organisation? How should it be measured?	UARM RCQ-2016 Semi-structured interviews
2.	Analyse the results	How well did the questionnaire work for this group? What are the data trends across the different levels and groups?	Statistical analysis of research results
3.	Interpret the research results	What do the research findings mean within the context of the organisation?	Interpretation of research results
4.	Propose recommendations based on the outcomes of the surveys and questionnaires.	Which actions should the organisation take based on the results?	Draw conclusions from the research results

4.2 Research design

The aim of this section is to explain the overall research design as proposed for this research project. For academic research, researchers generally make use of two broad types of research categories, quantitative research and qualitative research. The mixed methods research design selected for this study includes elements of both qualitative and quantitative research.

The organisation completed a general culture survey during 2015. Improvement initiatives are under way and a second culture survey is planned for 2017. A selected sample was purposefully chosen by the researcher for purposes of this study, to limit confusion by running the organisational culture survey as well as the proposed risk culture survey throughout the organisation. The research objectives were presented to the Risk Executive Committee to ensure buy-in and to obtain agreement on applying the UARM RCQ-2016 to the selected sample. From an organisational perspective, a similar memorandum was drafted and presented to the Executive Management Committee to enlist their buy-in and participation in the research project.

4.3 Research execution

The UARM RCQ-2016 risk culture questionnaire

The UARM RCQ-2016 questionnaire was hosted and administered online. This ensured the anonymisation of research responses, which was a prerequisite from the Risk Executive Committee. This included the non-identification of participants even when relatively small teams participated in the survey. E-mails were sent to the participants to notify them of the survey link and instructions on how to complete the survey. The instrument was administered to 146 participants and was available for completion from 20 July 2016 to 12 August 2016. This population included the entire risk management team within the organisation, which comprises 129 team members as well as 17 business management stakeholders.

The UARM RCQ-2016 instrument included 34 items, of which 25 assessed risk integration, 7 individual risk understanding and 2 related to individual responsibility and accountability.

Semi-structured Interviews

Nine executives that serve on the Executive Management Committee were selected as the sample for semi-structured interviews. E-mail notification of the research title and research description was sent to the research participants. Thirty-minute discussion sessions were arranged to conduct the interviews. Six semi-structured interviews were conducted, which were designed to assess the Executive Committee Members' overall view of the risk management function as well as their understanding of risk culture and risk tone. In addition, their perceptions of the current status of the effectiveness of the risk management function were also assessed.

4.4 Data analyses

Quantitative data

Data computation and statistical analyses were performed on the UARM RCQ-2016 data. The statistical tests are discussed in the results section. The UARM RCQ-2016 as completed by the chosen participants included demographic data such as gender, age group, first language, highest level of education, level of current role and risk type most relevant to role. The demographic data are reported in the results section. Descriptive statistics were calculated for the demographic and individual items. Inferential statistics were used to answer the research questions, which included comparing the groups. Outputs are discussed in the results section.

Qualitative data

Recordings of the semi-structured interviews were analysed to highlight key themes. A summary of these themes is also included in the results section.

4.5 Data analysis approach

Analyses of the item response data were performed for the total group, the three different levels of management, as well as for the business participants and risk participants group. The SAS[®] system was used to analyse the data.

In order to test the internal reliability of the UARM RCQ-2016 questionnaire for this specific population, Cronbach's alpha coefficient was calculated using the PROC CORR procedure in SAS[®]. To assess risk culture across the different management levels, the UARM RCQ-2016 factor maturity scores were obtained by calculating the means of items per factor.

The PROC UNIVARIATE procedure in SAS[®] was used to test for normality of data. The results showed that the histograms for the items and factors were mostly skewed to the right. Since the parametric assumption of normality did not hold, non-parametric tests to reveal any differences between the groups were used.

The Kruskal-Wallis test was used to indicate any differences in the distributions of the different management levels. Pairwise Man-Whitney U tests for each combination of pairs were performed for cases where statistically significant differences were observed between management levels. The p-value was adjusted for the inflated Type I error with the following formula: Adjusted p-value = (p-value) x (number of combinations).

Non-parametric Man-Whitney U tests were used to assess whether the responses for items across the various stakeholder groups differed significantly at the 90% confidence level. The results are reported at the 90% confidence level due to the purposefully limited population and sample size. This was done for each item in the questionnaire and for the calculated factors.

5. Results and Discussion

5.1 Introduction

The results from this study are presented in the following sections:

- Demographic information and analysis for the chosen sample
- Descriptive statistics based on the different factors
- An analysis and discussion on the significant differences between the different management levels, management versus non-management participants, and business versus risk participants.

In order to test the reliability of the UARM RCQ-2016 for this sample, Cronbach's alpha was calculated. This resulted in a 0.95 reliability score, which is considered adequately reliable for this sample.

5.2 Demographic summary of the sample group

All 83 participants that completed the questionnaire were South African citizens, with gender split of 49% male and 51% female. Thirty-eight percent listed English as their first language. In terms of age, 5% fell in the 20–29-year group; 42% in the 30–39-year group; 39% in the 40–49-year group; 12% in the 50–59-year group and 2% were 60 years or older. The majority of participants were employed in a risk management function. The highest level of education for the total population can be summarised as follows: 51% with university post-graduate qualifications, 34% with university undergraduate qualifications, 10% with a college qualification and 5% having reached secondary school.

The three stakeholder comparison groups consisted of three management levels, senior management, middle management and non-management participants. In addition, a separate comparison was performed for risk management participant responses against business management participant responses. In terms of the level of current role, 25% were in senior management roles, 30% in middle management and 45% in non-management. This equates to 55% in management roles versus 45% in non-management roles. Eighty-

seven percent of the participants were employed in a risk management function with the balance of 13% in a business management function.

The biggest group of participants, 30%, had been employed for more than 10 years in the organisation, with 26% employed for more than 5 up to 10 years, 16% for more than 3 years and up to 5 years, 22% for more than 1 year and up to 3 years, 6% for less than a year.

UARM RCQ-2016 Factors

In order to assess the perceived risk tone across the different stakeholder groups using the level of role, management versus non-management participants as well as risk versus business stakeholders, maturity scores were derived by calculating the mean of items per factor.

Table 3 – UARM RCQ-2016 factors

UARM RCQ-2016 Factor	Total # items
Factor 1 – Risk culture: Risk integration	25
Factor 2 – Risk culture diagnostics: Individual	
Sub-factor 2.1 – Risk understanding	7
Sub-factor 2.2 – Individual responsibility and accountability	2

Table 4 – Factor scores for all participants

Factor Scores			
	Factor 1	Sub-factor 2.1	Sub-factor 2.2
All participants	3.6	3.9	4.3

Table 5 – Factor scores for level of role

	Factor Scores		
Level of role	Factor 1	Sub-factor 2.1	Sub-factor 2.2
Senior management	3.8	4.1	4.3
Middle management	3.6	3.8	4.4
Non-management	3.5	3.8	4.2

Management versus non-management

Table 6 – Factor scores for management versus non-management

	Factor Scores		
Level of role	Factor 1	Sub-factor 2.1	Sub-factor 2.2
Management	3.7	3.9	4.3
Non-management	3.5	3.8	4.2

Risk management versus business management participants

Table 7 – Factor scores for risk management versus business management participants

	Factor Scores		
Function	Factor 1	Sub-factor 2.1	Sub-factor 2.2
Risk management	3.6	3.9	4.2
Business management	3.5	3.8	4.6

5.3 Significant differences between level of role

The PROC NPAR1WAY procedure in SAS was used to test for differences in distributions for the three different levels of management. The Wilcoxon scores were used to obtain the Kruskal-Wallis test results. Statistically significant differences are shown in Table 8 (marked with **).

Table 8 – Discussion on significant differences (level of role)

Kruskall-Wallis Test					
Management level	n	Mean Wilcoxon score	Chi-squared test statistic	p-value	Significant difference at $\alpha = 0.1$ **
Factor 1: Risk integration					
1. There are clear risk owners for every risk in this organisation.					
Senior management	21	51.38	4.99	0.08	**
Middle management	25	39.08			
Non-management	37	38.65			
6. I am able to challenge risk stakeholders on risk issues in the organisation.					
Senior management	21	46.76	6.91	0.03	**
Middle management	25	45.38			
Non-management	34	33.04			
19. My concerns about risks will be taken seriously by executive management.					
Senior management	21	49.33	5.46	0.07	**
Middle management	25	37.94			
Non-management	33	35.62			
Sub-factor 2.1: Risk understanding					
7. I understand the link between the organisation's risks and objectives.					
Senior management	21	52.43	6.55	0.04	**
Middle management	25	36.58			
Non-management	37	39.74			
8. I understand the organisation's risk management framework (processes, practices, etc.)					
Senior management	21	46.88	5.19	0.07	**
Middle management	25	46.10			
Non-management	36	35.17			
34. I know how well the organisation is performing in meeting our objectives.					
Senior management	21	53.52	8.67	0.01	**
Middle management	25	35.28			
Non-management	36	38.81			

Statistically significant differences were observed between the three role levels for items 1, 6, 19, 7, 8, 34. In order to investigate which groups differed, the Pairwise Man-Whitney U tests for each combination of the pairs were performed. Significant differences are marked with **.

Table 9 – Discussion on significant differences (across management levels)

Mann-Whitney Pairwise Test (Wilcoxon rank sum test)						
Management level	n	Mean Wilcoxon score	Chi-squared test statistic	p-value	Adjusted p-value	Significant difference at $\alpha = 0.1$
Factor 1: Risk integration						
6. I am able to challenge risk stakeholders on risk issues in the organisation.						
Non-management	34	24.54	4.64	0.03	0.09	**
Senior management	21	33.60				
6. I am able to challenge risk stakeholders on risk issues in the organisation.						
Middle management	25	35.44	5.14	0.02	0.07	**
Non-management	34	26.00				
19. My concerns about risks will be taken seriously by executive management.						
Non-management	33	23.95	4.79	0.03	0.09	**
Senior management	21	33.07				
Sub-factor 2.1: Risk understanding						
7. I understand the link between the organisation's risks and objectives.						
Middle management	25	19.44	6.36	0.01	0.04	**
Senior management	21	28.33				
34. I know how well the organisation is performing in meeting our objectives.						
Middle management	25	18.88	7.41	0.01	0.02	**
Senior management	21	29.00				
34. I know how well the organisation is performing in meeting our objectives.						
Non-management	36	25.19	5.99	0.01	0.04	**
Senior management	21	35.52				

Items 1 and 8 do not appear in Table 9. The adjusted p-value is greater than 0.1 and we can therefore not infer statistically significant differences for the multiple comparisons of these items.

Factor 1 – Risk integration

The statistically significant differences that were found between management levels for the risk integration items had to do with overall risk ownership, the ability to challenge risk issues and whether concerns about risk will be taken seriously (Table 8). Items 1, 6 and 19 show significant differences between management levels for this sample of respondents. The item response trend graphs for items with significant differences will now be discussed to gain further insight into the differences between understanding of the link between the organisation's risks and objectives.

UARM RCQ-2016 Item 1: There are clear risk owners for every risk in this organisation.

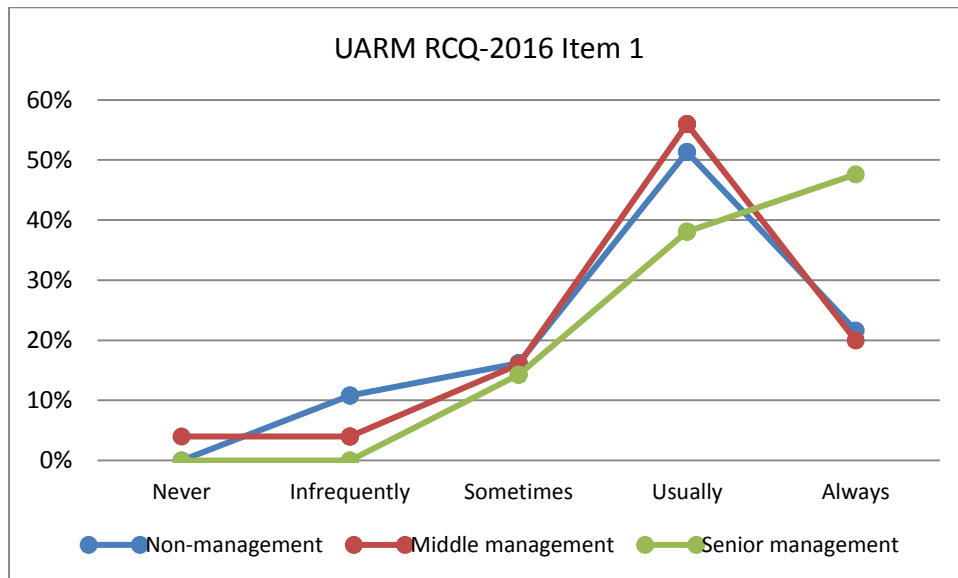


Figure 1: UARM RCQ-2016: Item 1 responses.

All participants completed this item. Participant responses ranged across all of the available response options. The mean, mode and median were 4.0, with a standard deviation of 0.9.

The distribution of the responses shown in Figure 1 was used to further understand the differences. The middle management and non-management participants' responses differed from those of the senior management. Senior management's highest response percentage was against option 'Always', whereas the other two levels of management recorded 'Usually' as their highest option.

As statistically significant differences between management groups for this sample could not be confirmed for this item, the distribution of responses can only be taken as an indication of a possible trend that should be further investigated for this organisation, using a more comprehensive sample.

UARM RCQ-2016 Item 6: I am able to challenge risk stakeholders on risk issues in the organisation.

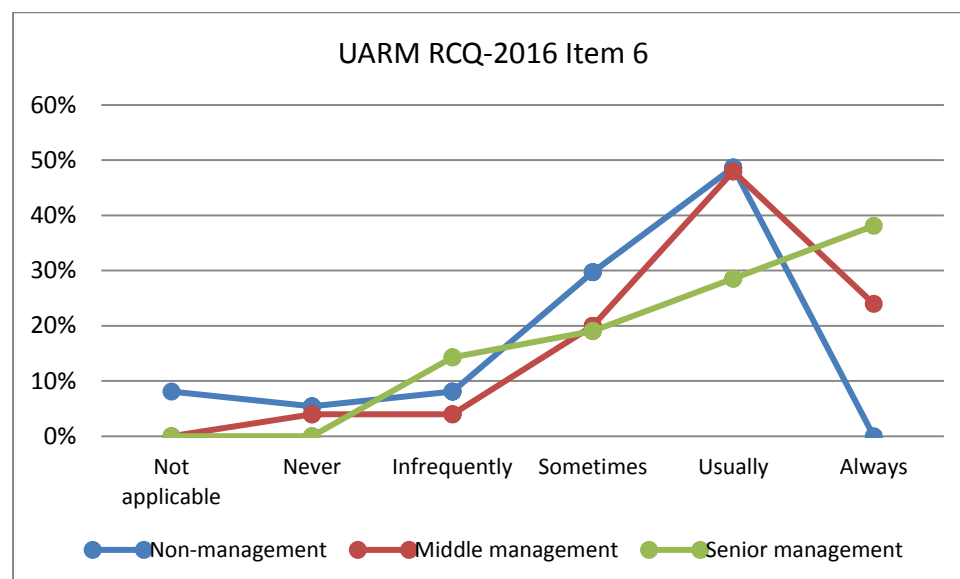


Figure 2: UARM RCQ-2016: Item 6 responses.

Participant responses ranged across all of the available options, with three non-management participants opting for the 'Not applicable' option. The mode and median are reported at 4.0 and the mean at 3.6 with a standard deviation of 1.0.

The actual response trends, as shown in Figure 2, indicate that middle and non-management participants answered similarly. None of the non-management participants selected 'Always'. Senior management participants' highest response percentage is against the 'Always' option, whereas the other two levels of management recorded 'Usually' as their highest option.

These trends further inform the statistically significant differences found between the three groups in Table 9, such that statistically speaking, senior managers felt more able than middle managers and non-managers to challenge risk stakeholders on risk issues in the organisation, and middle managers more able to challenge than non-managers. The findings on this item clearly link to risk tone in the organisation, since it assesses whether employees are comfortable to challenge risk stakeholders on risk issues.

UARM RCQ-2016 Item 19: My concerns about risks will be taken seriously by executive management.

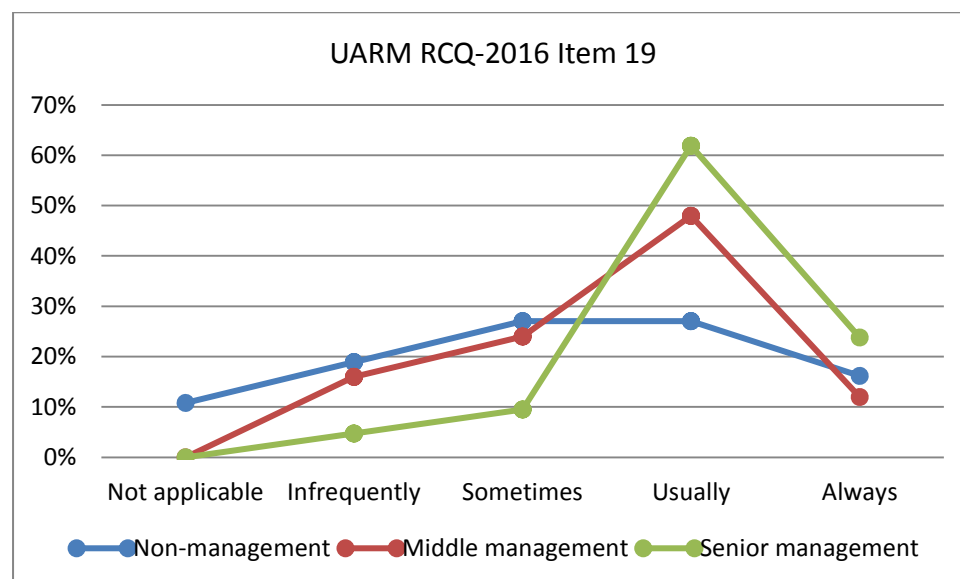


Figure 3: UARM RCQ-2016: Item 19 responses.

Participant responses ranged across five of the available options, with no responses recorded for the 'Never' option. The median and mode were both reported at 4.0, whereas the mean was recorded at 3.6 with a standard deviation of 0.9. The senior management responses are clearly skewed towards agreeing with these statements with the majority of participants selecting the 'Usually' and 'Always' options. Responses from middle management responses are not as heavily skewed as the senior management participants as depicted in Figure 3. The responses from non-management participants are balanced between those in agreement with the statement as opposed to those in disagreement with the statement.

The statistically significant higher agreement with this item by senior managers compared to non-managers shown in Table 9 could be due to the former having more access to executive management, which could allow for more dialogue about organisational risks. In contrast, non-management participants can be expected to have less access to executive management and their responses, in all likelihood, will be based on their more distant perceptions of whether executive management would take their concerns seriously regarding organisational risks. This result should be addressed by more effective communication about risk issues from executive to non-management levels as part of improving the perceived risk tone in the organisation.

Sub-factor 2.1 – Risk understanding

The risk understanding items that showed statistically significant differences concerned understanding of the link between risk management and the organisation's objectives (see Table 9). The items on understanding the organisation's risk management framework, how to manage risk as part of the participant's role, the consequences of not managing risks connected to the participant's role, and what kind of information participants need to manage risks did not show significant differences between management levels for this sample of respondents. The item response trend graphs for items with significant differences will now be discussed to gain further insight into the differences between understanding of the link between the organisation's risks and objectives.

UARM RCQ-2016 Item 7: I understand the link between the organisation's risks and objectives.

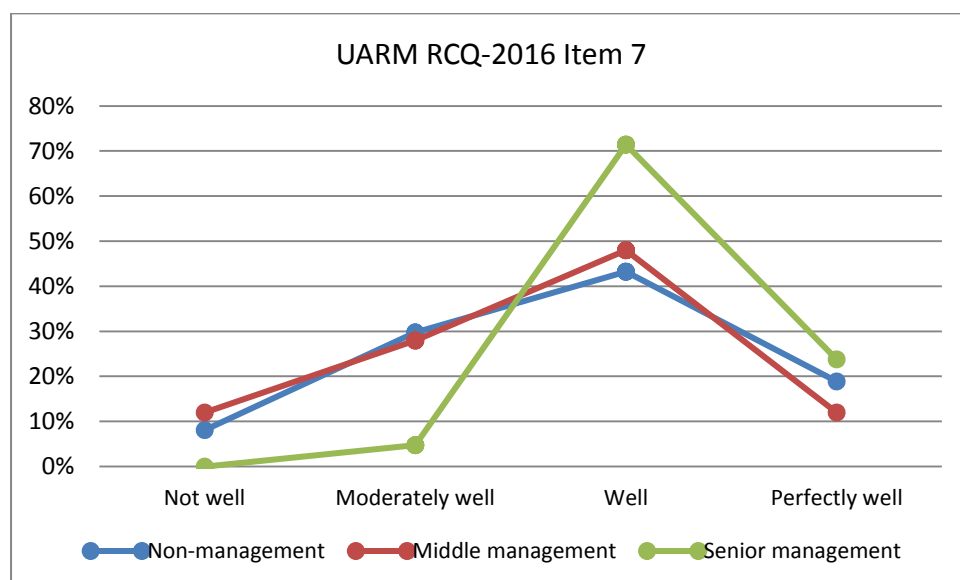


Figure 4: UARM RCQ-2016: Item 7 responses.

Participant responses ranged across four of the available options. The median and mode were both reported at 4.0, whereas the mean was recorded at 3.8 with a standard deviation of 0.8. The majority of responses were recorded against option 'Well' as shown in Figure 4. The middle management and non-management participants' responses follow a similar trend across the options whereas the senior management's responses reveal a greater bias towards 'Well', no responses for 'Not well' and few responses for 'Moderately well'.

This distribution adds more insight to the statistical finding that middle management understanding was significantly less than that of senior management for this item (Table 9).

Considering the similar trends of middle and non-manager responses, the non-statistical significance of the difference between non-management and senior management responses on this item could be attributed to the small sample size. The response trends indicate uncertainty on this item at middle management and non-management levels that should be of concern to this organisation, even if one considers the explanation that senior management are generally more involved in executing the organisation's objectives and to do so they need to be aware of the link between risks and objectives.

UARM RCQ-2016 Item 8: I understand the organisation's risk management framework (processes, practices, etc.)

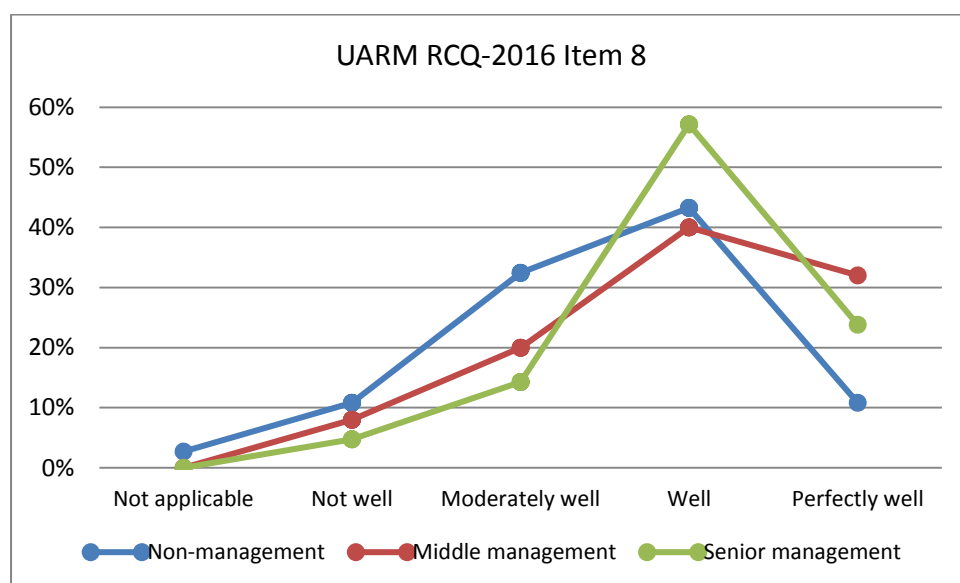


Figure 5: UARM RCQ-2016: Item 8 responses.

Despite initial indication that there may be statistically significant differences in responses between management levels for this item (Table 8), no specific statistically significant differences were found for this sample in the subsequent analysis reported in Table 9. This finding is supported by the response distribution shown in Figure 5, which indicates that all levels feel comfortable that they understand the organisation's risk management framework. However, the greater distribution in non-management responses indicates uncertainty that should be followed up on, especially considering that the research sample consists mainly of risk practitioners in the organisation.

Participant responses ranged across five of the available options. The median and mode were both reported at 4.0, whereas the mean was recorded at 3.8 with a standard deviation of 0.9. The majority of responses were recorded against option 'Well' across all three groups, as per Figure 5, which means that the majority of participants agree with this

statement. This item assesses the participants' understanding of the risk management framework. Since the larger population consists of risk management practitioners, one should keep in mind that they would have a greater understanding of the risk management framework compared with employees outside the assurance community. Considering the definition of risk culture as the level of integration of risk management principles in business decision-making in the organisation, the study should be repeated for a comprehensive business sample in the organisation.

UARM RCQ-2016 Item 34: I know how well the organisation is performing in meeting our objectives.

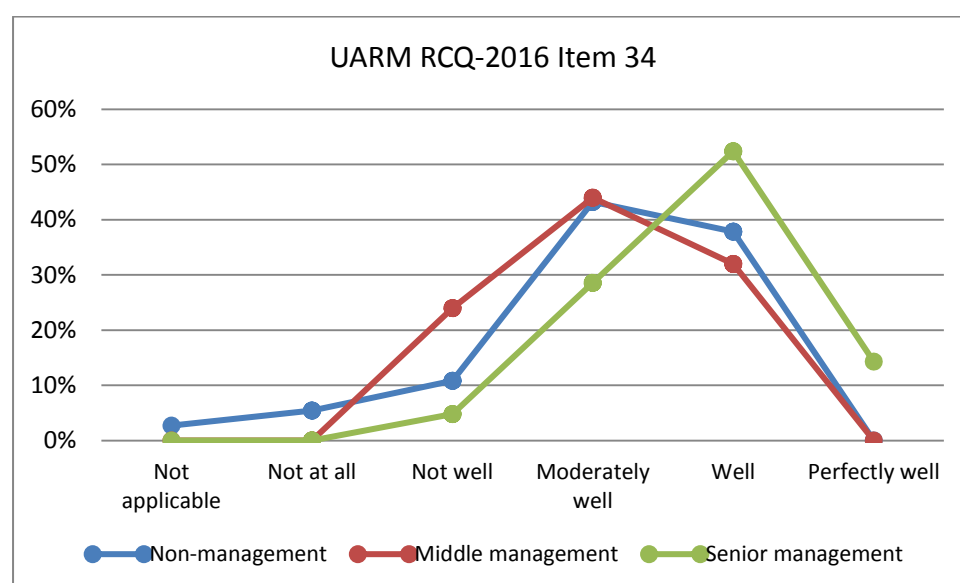


Figure 6: UARM RCQ-2016: Item 34 responses.

Participants' responses ranged across all of the available options. The median and mode were both reported at 3.0, whereas the mean was recorded at 3.3 with a standard deviation of 0.8. The majority of responses were recorded against option 'Well' for the senior management group. The senior management group responses were significantly different when compared to the other two groups as shown in Table 9. Non-management and middle management participants selected option 'Moderately well' as their highest percentage of responses, which could signal that they are not as comfortable as the senior management stakeholders that they always understand how the organisation is performing. The options 'Well' and 'Moderately well' also scored an equal number of responses.

One would expect senior managers to have a greater understanding of how well the organisation is doing in meeting its objectives. However, considering that the aim of risk management should be to enable the organisation to reach its objectives, one can expect

that knowing how well the organisation is doing in meeting its objectives will assist with increasing the risk tone in the organisation.

The results for the objectively based risk understanding items indicate that attention should be given to the understanding of the link between risk management and the organisation's objectives for this company at its middle management and non-management levels.

5.4 Discussion on significant differences (business versus assurance stakeholders)

The results of the participants' responses between business and assurance stakeholders are tabled below for items where mean Wilcoxon scores indicated statistically significant differences (marked with **). Statistically significant differences were observed between the three role levels for items 5, 16, 31, 8, 32 and 34.

Table 10 – Discussion on significant differences (business versus assurance)

Wilcoxon rank sum test					
Management level	n	Mean Wilcoxon score	Chi-squared test statistic	p-value	Significant difference at $\alpha = 0.1$
Factor 1: Risk integration					
5. I believe that risk management principles are actively used in decision making in the organisation.					
Assurance	71	43.17	4.99	0.08	**
Business	11	30.73			
16. My manager practices what s/he preaches on risk issues.					
Assurance	72	43.91	6.91	0.03	**
Business	11	29.50			
31. Managers welcome discussions about risk.					
Assurance	72	43.64	5.46	0.07	**
Business	11	31.27			
Sub-factor 2.1: Risk understanding					
8. I understand the organisation's risk management framework (processes, practices, etc.)					
Assurance	71	43.19	6.55	0.04	**
Business	11	30.59			
32. I understand what kind of information my colleagues need to be able to make risk-related decisions.					
Assurance	72	43.64	5.19	0.07	**
Business	11	31.27			
34. I know how well the organisation is performing in meeting our objectives.					
Assurance	71	39.83	8.67	0.01	**
Business	11	52.27			

The distributions of responses for these items are now discussed.

UARM RCQ-2016 Item 5: I believe that risk management principles are actively used in decision-making in the organisation.

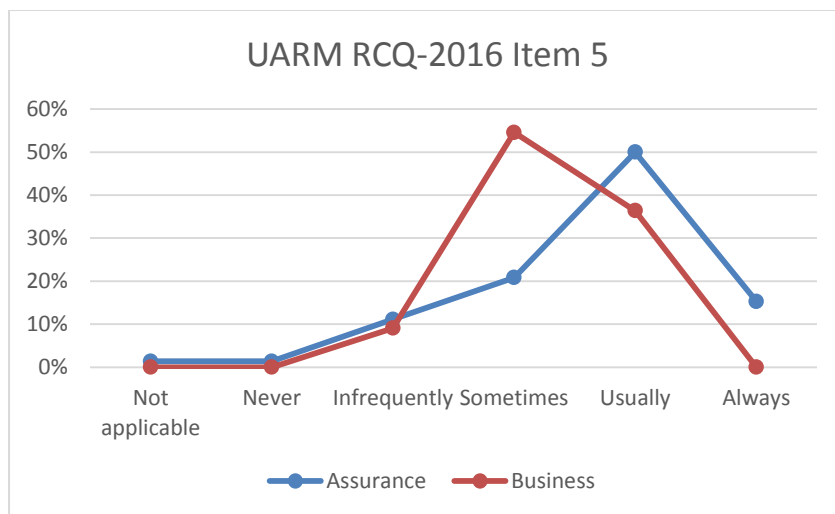


Figure 7: UARM RCQ-2016: Item 5 responses.

Participant responses ranged across all of the available options. The median and mode were both reported at 4.0, whereas the mean was recorded at 3.6 with a standard deviation of 0.9. The majority of responses were recorded against option 'Usually'. This item assesses whether risk management principles are actively used in decision-making in the organisation. From a risk tone perspective, this would indicate whether the sample perceive that stakeholders actually practise what is contained in the risk management frameworks.

The distribution of responses in Figure 7 supports the statistics in Table 10 and indicates that the assurance participants were more confident than the business participants that the statement is valid. This result should raise concern that business may be less comfortable with the use of risk management principles in the organisation. As the business participants are a minority in this sample, a more comprehensive study should be conducted to investigate the possibility further.

UARM RCQ-2016 Item 16: My manager practises what s/he preaches on risk issues.

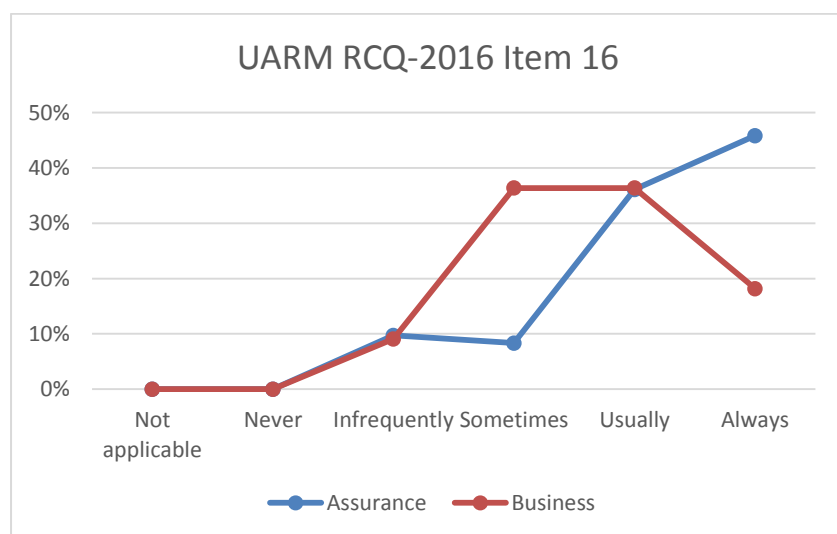


Figure 8: UARM RCQ-2016: Item 16 responses.

Participants' responses ranged across four of the available options. The median and mode were reported at 4.0 and 5.0, respectively, whereas the mean was recorded at 4.1 with a standard deviation of 1.0. The majority of responses were recorded against option 'Always', followed closely by option 'Usually', which suggests an overall agreement with the statement. There are, however, some responses recorded against options 'Sometimes' and 'Infrequently' as depicted in Figure 8. In relation to risk tone, this item assesses management behaviour in relation to whether management practises what they say about risk issues.

The distribution of responses combined with the statistics in Table 10 indicates that the assurance participants were more confident than the business participants that the statement is valid. This result should raise concerns that business may be less comfortable with management always practising what they say about risk issues. This is of concern as one can expect that the messages about risk from management will impact the risk tone and culture at lower levels in the organisation. A more comprehensive study, or a larger sample of business stakeholders, should be included in the next iteration of a similar study.

RCQ-2016 Item 31: Managers welcome discussions about risk.

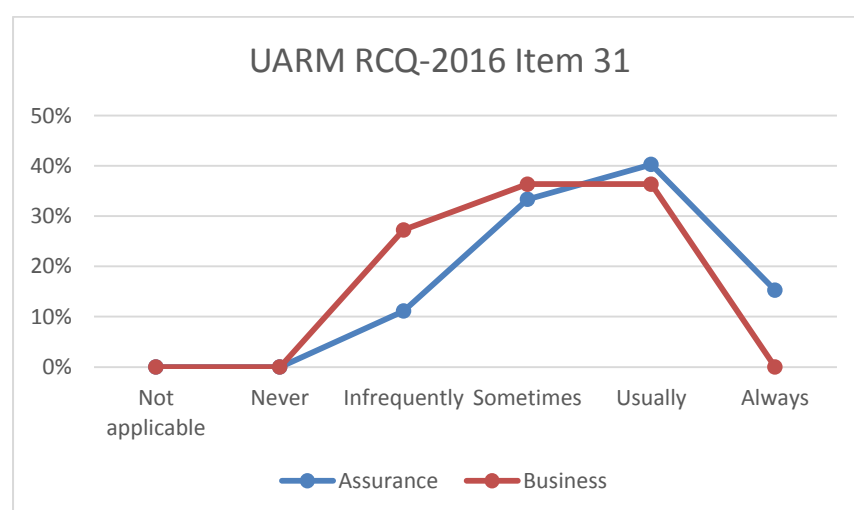


Figure 9: UARM RCQ-2016: Item 31 responses.

Participants' responses ranged across four of the available options. The median and mode were reported at 4.0, whereas the mean was recorded at 3.5 with a standard deviation of 0.9. Figure 9 illustrates the actual responses with the majority of responses being recorded against options 'Usually' followed by 'Sometimes'. Options 'Infrequently' and 'Always' scored the same number of total responses, although they represent opposite views of this item. This item assesses management's approach to risk discussions. Twenty-eight responses were recorded against option 'Sometimes'. The sum of responses for options 'Sometimes' and 'Infrequently' totals 39, which reflects the perception of almost half the total population. The fact that almost half of the population selected those options means that managers may not welcome discussions on risk. Since the larger population is made up of assurance participants, more needs to be done to fully understand the results of this item. In terms of overall risk tone, this brings into question management's willingness to engage in risk discussions. The statistics in Table 10 indicate that the assurance participants were more confident than the business participants that the statement is valid.

RCQ-2016 Item 32: I understand what kind of information my colleagues need to be able to make risk-related decisions.

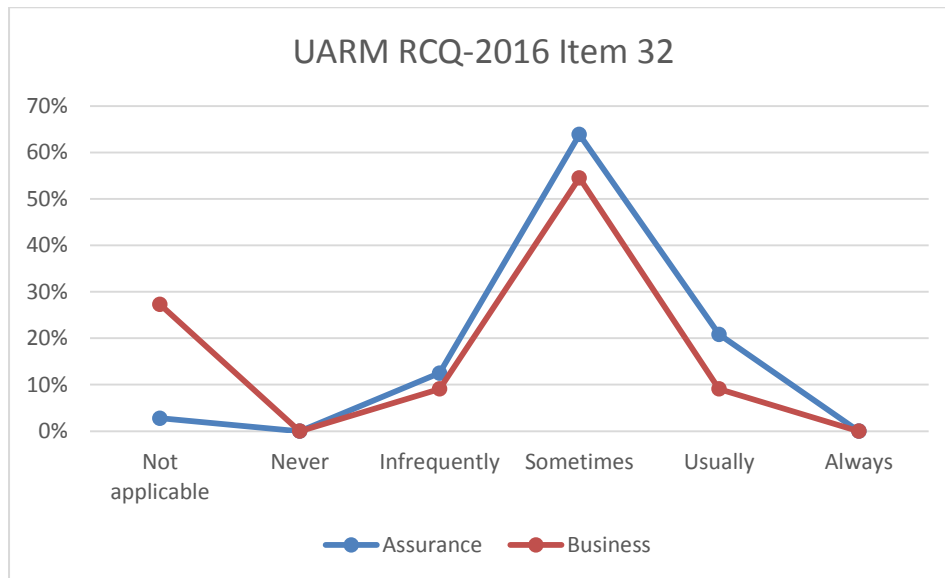


Figure 10: UARM RCQ-2016: Item 32 responses.

Participants' responses ranged across four of the available options. The median and mode were reported at 4.0, whereas the mean was recorded at 3.9 with a standard deviation of 0.7. The majority of responses were recorded against option 'Sometimes'. The business and assurance participants answered similarly as shown in Figure 10.

It is, however, of concern that almost 30% of business participants selected 'Not applicable' for this item as one would expect business employees' understanding of the risk information required to be able to make risk-related decisions to make them critically aware of integrating risk into business decision-making in the organisation.

UARM RCQ-2016 Item 8: I understand the organisation's risk management framework (processes, practices, etc.)

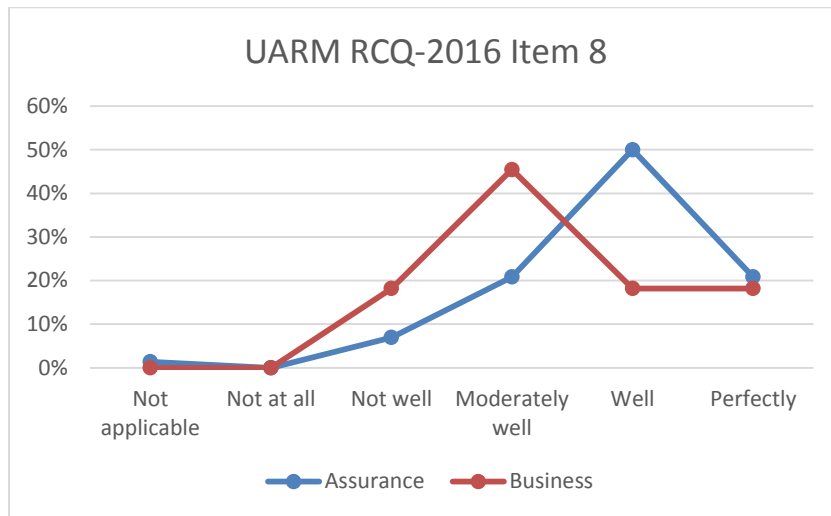


Figure 11: UARM RCQ-2016: Item 8 responses.

Participants' responses ranged across five of the available options as shown in Figure 11. The median and mode were both reported at 4.0, whereas the mean was recorded at 3.8 with a standard deviation of 0.9. This item assesses the participants' understanding of the risk management framework. The significantly greater uncertainty about understanding the organisation's risk management framework for business participants is of concern as it can be expected to impact negatively on the integration of risk management principles in business decision-making.

UARM RCQ-2016 Item 34: I know how well the organisation is performing in meeting our objectives.

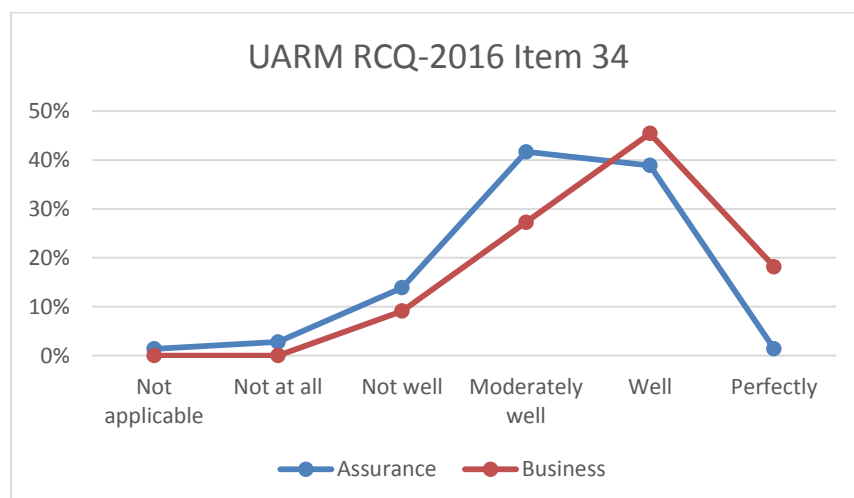


Figure 12: UARM RCQ-2016: Item 34 responses.

Participants' responses ranged across all of the available options. The median and mode were both reported at 3.0, whereas the mean was recorded at 3.3 with a standard deviation of 0.8. Options 'Moderately well' and 'Well' had the same total number of responses. The statistics in Table 10 also show that the business participants were more confident than the assurance participants that the statement is valid. Greater knowledge of the organisation's performance against its objectives should assist the risk practitioners to support business to include risk in their decision-making processes. The reasons for risk practitioners being unsure about the organisation's performance against its objectives should be investigated to improve the risk practitioners' ability to support business in risk decision-making.

5.5 Overall summary of discussion on statistical differences

Overall, it can be deduced that management level differences indicated that senior managers felt more comfortable with their own understanding of risk in the organisation than middle and non-managers. Senior and middle managers felt more empowered in the risk management process than non-managers.

At a functional level, initial indications are that risk practitioners were significantly more positive about the value that risk management adds to business management than the business participants. The risk practitioners were also significantly more positive about their understanding of the organisation's risk management framework and the kind of information required in making risk-related decisions. This could be due to their close proximity to seeing the results of the risk management being embedded and implemented in the organisation.

On the other hand, the business participants were significantly more confident in their knowledge of how well the organisation is doing in meeting its objectives. These findings provide diagnostic pointers of areas where the integration of risk principles should be addressed to improve the risk culture in the organisation.

5.6 Open-ended questions

Two open-ended questions were asked to ascertain how participants experience overall risk management in the organisation.

Item 41: Who owns the risk in the organisation?



Figure 13: Who owns the risk in the organisation?

The respondents overwhelmingly allocated risk ownership across assurance functions as per Figure 13. This could be due to interpreting risk as risk management by the participants. Given that this population was largely representative of risk management stakeholders, it does provide insight into the perceived ownership of risk across the organisation. If risk management practitioners are possibly confused regarding risk ownership, it provides an avenue for the risk leadership personnel to rethink how ownership of risk is understood and acted on in the organisation. The risk community is responsible for the risk management process and owns this across the organisation but should not be responsible for the actual risks that the organisation assumes in pursuit of its strategic objectives.

Item 42: To improve risk management in the organisation, I believe that we must start with improving risk...



Figure 14: How would we improve risk management in our organisation?

This question is crucial to understanding how participants perceive weaknesses or areas for improvement regarding the risk management function. Participants noted accountability and responsibility as a key area of improvement as per Figure 12. This was closely followed by training and communication. These selections pose interesting questions regarding the organisation's risk tone and broader risk culture. Given that this population was largely representative of risk practitioners, the issue around accountability and responsibility requires more analysis and discussions.

One of the findings from the overall organisational culture survey referred to a lack of accountability from certain areas within the company even though accountability is a core value of the company. The responses from this sample confirm this finding. In addition to this, the participants indicated in Factor 2.2 of the UARM RCQ that their view of their own individual levels of being accountable and responsible for the risks connected to their roles is that they are high. This discrepancy between high perceived levels of individual accountability and responsibility and the perceived need to improve accountability and responsibility in the organisation is an area of concern in terms of risk tone in the organisation. The possible disconnect should be further investigated to allow the organisation to improve tone around risk accountability and responsibility.

This item did not include an option that risk leadership should be improved. Leadership is critical for setting the risk management tone in the organisation and thereby determining the

risk culture of the organisation. I therefore recommend that risk leadership be included as an option for this item in future versions of the UARM RCQ.

5.7 Concluding remarks on results of UARM RCQ-2016

This sample allowed for preliminary conclusions from the data. Limited differences at a statistical significance level of $p < 0.10$ were found between management levels and assurance versus business functions. Although the UARM RCQ-2016 risk integration, understanding and accountability and responsibility factor scores consistently lay in the fourth or 'high level of' quintile of the UARM RCQ-2016 risk culture maturity model, significant differences between factor scores and individual item responses were found between management levels and risk assurance and business management functions. These differences allowed for preliminary conclusions about possible issues in the risk culture and tone in the organisation. These issues should be investigated in a more comprehensive and representative sample of risk and business practitioners in the organisation.

5.8 Summary of semi-structured discussions

The semi-structured interviews were well received and the responses were overall positive in terms of the organisation's risk function and approach, risk competencies, risk appetite, overall risk culture, tone and risk reporting. The following questions were used as a base for the semi-structured discussions.

Item 1 - What is the organisation's overall approach to risk management? Do you believe that the risk community partners with business management to ensure that the organisation's objectives are continuously met?

Item 2 - What is the organisation's overall approach to risk appetite? As an example, how do you view a breach of risk appetite (intentional or unintentional)?

Item 3 - In your view, what is the core competency of risk management? Do you believe that the capability of our organisation's risk management competency is adequately demonstrated in your dealings with the risk community?

Item 4 - If risk management is described as the organisational conscience of doing the right things, do you agree with this statement? What do you think it means and how well do you think it applies to our organisation?

Item 5 - What is the organisation's tone, pertaining to risk management? (For discussion purposes, risk tone is conceptually defined as a behavioural enabler of risk culture.)

Item 6 - Do you believe that a consistent message pertaining to risk management tone is echoed across the organisation?

The organisation's overall approach to risk management in support of the organisation's strategic objectives was well received and supported by all the executive team members interviewed. Some of the members cautioned that a risk model such as the one implemented will require more time for it to be fully functional and value adding. The interviewees were also complimentary about the risk functions' overall technical and behavioural competencies.

The discussion on overall risk appetite provided pointers to how risk appetite was perceived by the different interviewees. Almost all of the interviewees commented that the organisation's approach to risk appetite is fit for purpose but more would need to be done to provide a non-technical view of risk appetite. In terms of risk appetite breaches, interviewees unanimously agreed that these were not due to behavioural issues, nor to excessive risk taking.

None of the interviewees saw risk culture or risk tone as underlying issues. This finding could be explained by my impression that risk tone does not form part of the organisational vocabulary. Interviewees were more comfortable with discussing behaviour patterns, especially those which the organisation supported as well as those that were not part of the organisation's value system in relation to risk culture.

The following areas of improvement are summarised as proposed by the interviewees:

- Translate risk management into a simpler business understanding,
- Make risk appetite easier to understand,
- Ensure a consistent approach to risk management across all levels of the organisation,
- Be more pro-active and continue to create a forward-looking view of risks,
- Simplify governance.

The suggested improvements by the semi-structured discussions support the overall improvements as reported by the RCQ-2016 questionnaire for this organisation. As the executive management team members set the risk tone in the organisation, the executive management team should also take into account the preliminary findings from this

questionnaire when considering the state of risk management in the organisation. The interviews were useful in understanding the executives' overall perception of the organisation's overall risk management function, approach and capability.

6. Conclusion

The results of the UARM RCQ-2016 survey instrument indicated statistically significant differences across the different levels of management across risk stakeholders. This is the first study in this organisation relating to this specific topic. The recommendations as interpreted by the researcher from the open-ended interview questions provide valuable insights into what is required to better embed the desired risk culture across the organisation.

The key areas that require improvements can be summarised as follows:

- Accountability and responsibility – the difference between organisational risks and risk management processes has to be better articulated. Stakeholder confusion about the responsibilities connected to these items can lead to risk management failures;
- Training – improving training and awareness regarding risk processes is key to elevating the organisation's ambition for creating and sustaining a positive risk culture across all operations;
- Communication – although much communication regarding weekly and monthly risk management interventions is disseminated to the risk community, it could be that the content requires a re-think. For communication to rank as high as it did in the list of suggested improvements indicates a plea from the community that whatever there is as a process currently in place, is not meeting the needs of the risk community.

Some of the results of the survey have already been included in the risk transformation programmes in the organisation. Based on the results, the questionnaire used in this study could also be useful to other similar organisations.

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REFLECTION

Risk culture as a topic of interest has gained much appreciation in recent years, yet limited published academic literature on the topic exists. While reflecting on the article completed in partial fulfilment of my master's studies, there have been some valuable lessons learnt. Having opted for an extension to defer completing my mini-dissertation, due to work, life and other commitments, I believe it was the correct decision.

What worked well?

The ongoing support and encouragement by the supervisory team helped the student to plan the research journey with clear milestones. The workshops presented by the Kerlick writing team were a great learning experience. After years of learning, speaking and writing, I thought I had a good enough command of English. After interacting with the supervisory and Kerlick teams it dawned on me that academic writing is an art and requires much practice. The two workshops, over three days each, worked amazingly well. The support and keen interest from my manager ensured me of getting to this point.

If I had to do it all over again, I would start earlier. I've learnt that the hardest part is making a start.

The workplace

This study provides key insights for my organisation regarding an approach to implementing a desired risk culture. The results of this study will be communicated internally to the risk executive team and other stakeholders. Having embarked on a risk transformation initiative, within the organisation and for the student's immediate span of control, this study has already assisted me with new insights and thinking about the qualitative aspects of risk management.

APPENDIX 1

UARM Risk Culture Questionnaire Pilot

UARM RCQ-2016

Summary

Sep 2016

Hermien Zaaiman (Research project leader)

This document provides a brief overview of the 2016 pilot version of the UARM Risk Culture Questionnaire (UARM RCQ-2016).

The aim of the UARM behavioural risk research programme is to develop tools to assess and improve the integration of formal risk management principles into organisational management. The aim of the UARM risk culture research project is to develop tools that can be used to assess the risk management culture ('risk culture') of organisations and identify possible problem areas related to risk culture.

We distinguish between risk management as a function in the organisation and the use of risk management principles during decision making in the organisation. We expect that participating organisations will have a formal risk management function intended to facilitate and oversee the use of risk management principles at the organisation's strategic and operational management levels. As the specific implementation of risk management tends to differ from organisation to organisation, the UARM risk culture survey has been developed independently of how risk management is implemented in the organisation.

The term risk culture can have many meanings. This implies that risk culture must be carefully defined to allow for optimally reliable and valid assessment of the perceived risk management culture in an organisation. We took a value of risk management to the organisation based approach in the UARM Risk Culture research project. The terms necessary to understand our definition of risk culture are now defined.

Risk: For the purpose of this research project, we define risk as *the negative effect of uncertainty on objectives*. This definition links Hubbard's definitions of risk:

'Long definition: The probability and magnitude of a loss, disaster, or other undesirable event' or 'Shorter (equivalent) definition: Something bad could happen' Hubbard (2009, p. 8)

to the ISO 31000 definition of risk as *'the effect of uncertainty on objectives'* (ISO, 2009b, p. 1).

Risk management: We use the ISO 31000 definition for risk management as *'coordinated activities to direct and control an organization with regards to risk'* (ISO, 2009b, p. 2). Hubbard (2009, p. 10) expands on this in his long definition of risk management: *'The identification, assessment and prioritization of risks followed by coordinated and economical application of resources to minimize, monitor, and control the probability and/or impact of unfortunate events'*.

Expected value of risk management to organisations: ISO 31000 recommends that *'organizations develop, implement and continuously improve a framework whose purpose is to integrate the process for managing risk into the organization's overall governance, strategy and planning, management, reporting processes, policies, values and culture'*. Such integration is expected proactively to increase the likelihood of achieving objectives by, in part, establishing a reliable basis for decision making and planning. (ISO, 2009a, pp. v, vi)

Based on this ISO 31000 view of the value of risk management, we view the integration of risk management principles into organisational decision making as an essential enabler for achieving the organisation's objectives. Taking risk into account during decision making at all organisational levels and management processes should contribute to reaching the organisation's objectives.

Risk Culture: We used the Hofstede approach to culture as starting point for the development of the UARM Risk Culture Questionnaire (RCQ). Hofstede, Hofstede, and Minkov (2010, p. 516) define culture as the trained unwritten rules of the social game or the *'collective programming of the mind that distinguishes the members of one group or category of people from another'*. An organisation can be seen as a cultural group that consists of subgroups, each with their own subculture.

For this study, we define organisational risk culture as the way in which groups of people use risk management principles when making decisions on uncertain future events that could have a negative impact on reaching the organisation's objectives. This definition allows for an assessment of the expected value of integrated risk management to achieving the objectives of the organisation.

The UARM risk culture questionnaire and items should:

- Be applicable across organisational sectors, work roles and risk types;
- Have a strong academic theoretical foundation;
- Be applicable in practice, i.e. with relevant and clear items, as briefly expressed as possible.

The RCQ items are based on key practices linked to the integration of risk management into the organisation's management at all levels of the organisation. The main aim of the questionnaire is therefore to assess how respondents view the levels of:

- Integration of risk management principles into the management of the organisation;
- The practice of risk management as an essential enabler for achieving the organisation's objectives.

The questionnaire also includes items that can be used as diagnostic indicators of where further questions should be asked about the risk culture of the organisation. The pilot version of the questionnaire (UARM RCQ-2016) was not intended to be a complete diagnostic tool. Based on the positive results from the questionnaire, we intend to further develop the risk culture diagnostic categories in the next versions of the questionnaire.

The pilot UARM RCQ-2016 online questionnaire consists of demographic, risk culture and diagnostic items. It took less than 15 minutes to complete for an initial test sample of respondents, with an average completion time of 10 minutes. This is brief enough to allow for adequately high response rates in the student research studies.

For ethical reasons, the questionnaire requires the participants to confirm that they are older than 18 years, have read the introductory information, and consent to participation on a voluntary basis before being allowed to continue with the questionnaire. Consent to participate is followed by standard and research-project-specific demographic items, such as age; gender; highest level of formal education completed; level in the organisation (e.g. board, executive, senior and middle management, non-management); function type (e.g. risk management, organisational management, operations); and length of time employed in the organisation.

Risk culture items

Forty risk culture items were devised during workshops with UARM students and research group members. The UARM student and research group members are all fully employed in risk-related roles across industry sectors. This allowed relevant, practical input into the development of the items.

The student research-project data were used to conduct a detailed factor analysis of the responses to the UARM RCQ-2016 version of the UARM Risk Culture Questionnaire. One would expect factors related to risk culture to correlate with each other. Initial exploratory analyses on the individual student data sets supported this expectation by indicating that the factors were not orthogonal, but correlated. The final factor analysis was therefore performed using the principal axis factor method with promax rotation and listwise exclusion of responses with missing data, as advised by writers such as Fabrigar, Wegener, MacCallum, and Strahan (1999).

Two factors were identified involving 34 of the original 40 items. The 34 items showed consistent high internal reliability with Cronbach's alpha coefficients of between 0.95 and 0.96 for all seven student research projects. The second factor was divided into two sub-factors based on the results of further factor analyses. The factors were named using the contents of the items per factor and sub-factor:

Factor 1: Risk Integration (25 items)

Factor 2: Risk Culture Diagnostic: Individual (9 items)

2.1: Risk Understanding (7 items)

2.2: Individual Responsibility and Accountability (2 items)

The items in Factor 1 assess the participant's perception of the integration of risk management principles into decision making with the aim of achieving the organisation's objectives. The items related to the contribution of the formal risk management function(s) to objectives driven decision-making are also included in this factor. These items will be further refined, based on the initial research results to create an even more reliable and valid UARM RCQ to be used for research in 2017 (UARM RCQ-2017).

The items in Factor 2 do not directly measure risk culture as defined for the purposes of this research project. The personal ('I') risk understanding and risk responsibility-accountability items divided into two sub-factors that can be used diagnostically to investigate further underlying aspects of risk culture. More diagnostic items will be developed in further research to allow for a more comprehensive diagnostic set of factors that can be used to evaluate the underlying reasons for participant perceptions of risk culture in organisations.

Calculation of factor score

At this stage in the development of the UARM RCQ, the factor scores per factor are calculated as the average of the means of the items making up the factor. This approach is generally recommended for new questionnaires where the factor loadings have not been confirmed (DiStefano, Zhu, & Mindrila, 2009; Russell, 2002).

The factor scores were calculated for each student's sample data using the items listed in Appendix 1 UARM RCQ-2016 per factor. As the factor score values are calculated by averaging the self-reported perceived status of risk culture in the organisation, they cannot be seen as absolute measures of organisation's prevailing risk culture. The factors provide a summary of the participant's views of risk culture in the organisation. The possible influence of item response biases on the scores (e.g. directional, confirmatory, social desirability and acquiescence biases) should be investigated in further research studies to establish whether the items adequately assess risk culture levels.

We may expect that the organisations in which the student studies of risk culture were done have levels of high risk management maturity as they operate in well-regulated sectors and therefore expect high factor scores for the 2016 student studies. Studies in organisations with lower levels of risk management maturity will also have to be conducted to assess the validity of the questionnaire. Nonetheless, the perceived risk culture factor scores should permit preliminary conclusions about the perceived risk integration, individual understanding of risk and risk responsibility and accountability in the samples studied. Statistically significant differences between item responses of sample subgroups should also provide diagnostic information on risk culture differences between groups within organisations.

The UARM risk culture maturity model

The factors allowed us to define a risk culture maturity model. Maturity levels corresponding to the five level Likert-type answer scales for each factor are provided in Table 1. At this stage, the sample maturity levels may be used as initial indicators of participant perception of the risk management culture in the group studied.

Note: The maturity levels are used for interpreting the results of the questionnaire. This information does not appear in the questionnaire itself and is not seen by the research participants.

The 25 UARM RCQ-2016 risk culture items in Factor 1 show promise as a measure of perceived risk culture where the value of risk management is viewed specifically in terms of:

- Integration of risk management principles into the management of the organisation;
- The practice of risk management as an essential enabler for achieving the organisation's objectives.

Based on their nature, the items belonging to Factor 1 can also be seen to assess the perceived risk management tone of the organisation.

The Factor 2 diagnostic items can be used to provide limited additional information on two aspects that may influence risk culture in the organisation. The current items for Factor 2.1 measure the respondent's risk understanding. Factor 2.2 assesses personal responsibility and accountability for risks connected to the person's role. These items, combined with responses on the items in Factor 1 and the diagnostic items 41 (risk ownership) and 42 (what should improve) will be used as the basis for compiling a more comprehensive risk culture diagnostic questionnaire (i.e. what to ask the respondents to be able to diagnose the source of risk culture issues?). This question will be addressed in further UARM research projects.

Note:

The development of the questionnaire will be written up in detail as a separate article.

For more information, please contact Hermien Zaaiman (hermien.zaaiman@nwu.ac.za).

Table 1. UARM Risk Culture Maturity Model (UARM RCQ-2016)

Factor	Factor Name	Risk Culture Maturity Levels				
		1.0 <= FS < 1.5	1.5 <= FS < 2.5	2.5 <= FS < 3.5	3.5 <= FS < 4.5	4.5 <= FS < 5.0
Factor 1	Risk Integration	RM Not viewed as an integrated enabler of achieving the organisation's objectives	RM viewed as a low integrated enabler of achieving the organisation's objectives	RM viewed as a medium integrated enabler of achieving the organisation's objectives	RM viewed as a high integrated enabler of achieving the organisation's objectives	RM viewed as a fully integrated enabler of achieving the organisation's objectives
Factor 2	Risk Culture Diagnostic: Individual					
Sub-factor 2.1	Risk Understanding (Personal assessment of own understanding of risk in the organisation)	1.0 <= FS < 1.5 Do not understand risk in the organisation	1.5 <= FS < 2.5 Low level of understanding of risk in the organisation	2.5 <= FS < 3.5 Medium level of understanding of risk in the organisation	3.5 <= FS < 4.5 High level of understanding of risk in the organisation	4.5 <= FS < 5.0 Completely understand risk in the organisation
Sub-factor 2.2	Individual Responsibility and Accountability	1.0 <= FS < 1.5 Not at all responsible and accountable for risks connected to role	1.5 <= FS < 2.5 Low level of responsibility and accountability for risks connected to role	2.5 <= FS < 3.5 Medium level of responsibility and accountability for risks connected to role	3.5 <= FS < 4.5 High level of responsibility and accountability for risks connected to role	4.5 <= FS < 5.0 Completely responsible and accountable for risks connected to role

FS: Factor Score

Appendix References

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