



Risk culture in support functions at a government department

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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: Introduction (Research project overview); Chapter 2: Article; and Chapter 3: Conclusions, limitations and recommendations (Reflection).

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

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

ABSTRACT

Risk culture perceptions are an important measure of an organisation's risk management processes. Yet, in many organisations, the perceived risk culture often remains undetermined. The present work assesses the risk culture perceptions of employees in the support functions of a South African national public entity. No published academic articles on risk culture in support functions were found and this study seems to be the first to focus on risk culture in this unexplored area. Data were collected by using the Risk Culture Survey (UARM RCS-2019), which was completed online by employees (n = 445) working in seven support functions. The responses were analysed using scales that are based on the results of factor analyses to determine the perceived level of risk integration and perceived comfort with the employees' own risk management role. The results indicated a medium risk culture maturity perception. In addition, tests of significance were performed and no significant differences were found between the seven support functions, except for the Finance function, which reported a risk culture perception score higher than the others. No significant differences in risk culture perceptions between managers and non-managers were found. The study reported here provides elementary but valuable insights and lays a foundation for an organisation-wide study. Perceived comfort with the employees' own risk management role was found to be similar and risk management appears to be integrated in decision-making processes. A third of respondents selected accountability as the major opportunity for improvement, and a third had never received formal risk training; both aspects highlight opportunities for improvement. Recommendations are offered to improve the current risk culture.

Keywords: Risk culture, Risk management, Support functions, Organisational culture, Public entity

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CHAPTER 1: INTRODUCTION (RESEARCH PROJECT OVERVIEW)

Project background

The study was conducted at a national public institution in South Africa. This public entity is listed under Schedule 3A of the Public Finance Management Act (PFMA) of 1999 and is an extension of a department with the mandate to fulfil a specific economic or social responsibility role of the South African government. The main objective of the study was to assess risk culture in support functions of the institution. The main research question was formulated as follows: “What is the perception of risk culture in the support functions of a public entity?” The focus on risk culture was based on the understanding that culture is a major factor in the success of an organisation and is progressively becoming a concern of many leaders (Warrick, 2017), as it plays a critical role in the determination of employee behaviour at work and the effectiveness of the organisation (Davidson, Mackenzie, Wilkinson, & Burke, 2016, p. 178). Second, the risk culture of an organisation significantly improves its capability for strategic risk decision-making and to deliver performance against business objectives (Gorzen-Mitka, 2018). While some managers and risk managers have avoided the concept because of not knowing how to approach the subject (Davidson et al., 2016, p. 183), it is clear that risk culture must first be measured so that it can be effectively managed.

The subsequent chapters examined risk culture in the support functions in a public sector context. The background to the research problem is outlined by stating the problem, specifying the research objectives, and laying out the research approach. The proposed methods and structure of the research are described. This is followed by a literature review relating to risk culture and the background of the organisation and functional areas being considered. This review was undertaken to establish a theoretical understanding of the area of study and was used as a basis for selecting the research instrument employed. In the method section the rationale for the research design and methodology is discussed while the results and discussion section present the results and an assessment thereof. The conclusion summarises the conclusions drawn, and offers recommendations for further research.

This investigation appears to be the first of its kind to focus on risk culture as experienced by employees in support functions. To achieve the research objective, several questions were formulated including some on recommended solutions that can improve the risk culture in support functions. The audience for this paper includes risk practitioners interested in understanding risk culture in support functions; business transformation specialists and risk practitioners; senior management of business areas that perform support functions in the organisation in which the study was performed; and those responsible for Enterprise Risk Management in the organisation. The results will open discussions about risk culture in support functions and serve as a basis for transformation in the organisation.

Justification for the selected journal

The journal selected is the *Journal of Business Research* (ISSN: 0148-2963), which is an indexed and peer-reviewed academic publication covering research on all aspects of business. The journal was established in 1973 and is published monthly by Elsevier. It is intended for articles on all aspects of business including the areas of accounting, international business, management, and risk. The journal reports the application of empirical research and theoretical findings to practical situations in business. Furthermore, the periodical has an impact factor of 4.028 and an AJG ranking of 3, which means that it publishes original and well-executed research papers which are regarded highly. The journal has good submission rates and is very selective in what it publishes; its papers are refereed comprehensively. The articles appearing in the journal are widely cited by researchers, leading to a citation score of 5.32 in 2018, putting the journal in the 92nd percentile. It accepts articles written in American or UK English but not a mixture of these. A search was conducted, and while the journal publishes culture-related work, none of the published articles related to risk culture in support functions; thus, this paper is believed to be one that will add value and benefit researchers and practitioners alike. The web address for the journal is <https://www.journals.elsevier.com/journal-of-business-research>, and the guidelines for authors can be found at <https://www.elsevier.com/journals/journal-of-business-research/0148-2963?generatepdf=true>

CHAPTER 2: ARTICLE

Risk culture in the support functions of a national public entity

Abstract

Risk culture perceptions are an important measure of an organisation's risk management processes. Yet, in many organisations, the perceived risk culture often remains undetermined. The present work assesses the risk culture perceptions of employees in the support functions of a South African national public entity. No published academic articles on risk culture in support functions were found and this study seems to be the first to focus on risk culture in this unexplored area. Data were collected by using the Risk Culture Survey (UARM RCS-2019), which was completed online by employees (n = 445) working in seven support functions. The responses were analysed using scales that are based on the results of factor analyses to determine the perceived level of risk integration and perceived comfort with the employees' own risk management role. The results indicated a medium risk culture maturity perception. In addition, tests of significance were performed and no significant differences were found between the seven support functions, except for the Finance function, which reported a risk culture perception score higher than the others. No significant differences in risk culture perceptions between managers and non-managers were found. The study reported here provides elementary but valuable insights and lays a foundation for an organisation-wide study. Perceived comfort with the employees' own risk management role was found to be similar and risk management appears to be integrated in decision-making processes. A third of respondents selected accountability as the major opportunity for improvement, and a third had never received formal risk training; both aspects highlight opportunities for improvement. Recommendations are offered to improve the current risk culture.

Keywords: Risk culture, Risk management, Support functions, Organisational culture, Public entity

Introduction

The first step in developing a strong risk culture in an organisation is understanding its current risk culture and how well it supports its approach to managing risk. This could be done by breaking down risk culture into measurable attributes. Investigating these attributes of risk culture can provide a baseline that can be used to measure an organisation's attempt to shape its risk culture (Australian Government Department of Finance, 2016). Power, Ashby, and Palermo (2013), however, aver that the risk culture concept does not have clear features but that it is organisation-specific as founded on that organisation's culture. Though this is the case, for the purposes of this study, risk culture is defined by the Centre for Applied Risk Management (UARM) as how organisational groups integrate risk in decision-making with uncertain future events that could have a negative impact on achieving the organisation's objectives. According to the Chartered Institute of Management Accountants (CIMA, 2018), risk culture is the basis upon which a successful enterprise risk management programme is built. Without a strong risk culture, risk management frameworks, policies and processes will not mitigate any adverse outcomes.

Risk culture is present in varying degrees across an organisation, in its business areas and in all its activities. This means that risk culture is an element of an organisation's culture relating to risk. Its culture is, however, complex and is driven by numerous factors. It is therefore beneficial first to understand the ways in which employees are influenced by the organisation's structure, its systems and processes before attempting to change their culture at work (Australian Government Department of Finance, 2016), if this is considered desirable. "When the risk culture is working properly, there is an alignment of the common purpose and attitudes towards risk." (Walker, Shenkir, & Barton, 2014). A strong risk culture is therefore critical to the success of risk management in an organisation, which includes its support functions.

Support functions are business units that perform secondary activities to facilitate the organisation's core business activities. The outputs of support functions are not intended to serve the customer directly but to carry out specialised tasks that support the effective delivery of the organisation's goals. These functions are therefore key enablers of an organisation's success. In a national public entity, support functions could include the finance department; human resources; governance, risk, and compliance functions; information services and technology; and the legal department. The organisation in which the study reported here was conducted is a national public entity in South Africa legislated for by the Public Finance Management Act (PFMA) of 1999. This entity is an extension of a government department mandated to fulfil a specific economic or social responsibility of the South African government. Figure 1 provides a profile of the entity's support functions, and their areas of responsibility.



Figure 1: Support functions and their areas of responsibility.

Aim of the study

The aim of this study was to assess the perceptions of risk culture held by members of staff in support functions. These indicate how risk is viewed, understood, or interpreted by the employees. Furthermore, the study aimed to determine whether risk culture is consistent across all functions and job levels. Despite the implementation of risk management processes within the organisation, a recent commission of inquiry reported that there may have been shortcomings in the risk management practices, mainly across support functions. The commission, which was appointed to enquire into governance failures following structural and leadership changes, found that behaviour and a poor risk culture may have played a key role in these shortcomings, which could indicate a weak risk culture. If a strong risk culture is found to exist, it will be contrary to what was highlighted by the commission. The consequential challenges faced by the organisation because of operational and staffing changes led to employees losing trust in the leadership, which may indicate that the organisation did not set the correct tone at the top, which is essential for successful risk management. The entity may therefore not have realised any tangible benefits from its risk management processes because of not embedding a strong risk culture. The primary objectives of the study were therefore as follows:

- To determine employee perceptions of the current risk culture in support functions.
- To ascertain if there are statistically significant differences in risk culture perceptions among support functions, e.g. finance versus human resources, and to determine the function with the strongest risk culture.
- To determine if there are statistically significant differences between the risk culture perceptions of management and non-management levels.

The secondary objectives of the study were to offer recommendations to improve the risk culture and help strengthen employee attitudes and behaviour – and, ultimately, to assist the organisation to address the problem of not realising the tangible benefits of risk management processes due to not embedding a strong risk culture. Knowing and understanding employee perception of risk culture is important to senior management in support functions, whose role requires them to lead the adoption of risk management policies and processes.

Furthermore, this study is novel in at least three ways. First, it took a focused approach by investigating only the perceptions of support function employees to capture any differences among these functions. Second, the study setting was a public entity as opposed to an organisation in the private sector as mostly reported on Power et al., 2013; Gorzen-Mitka, 2018; and Padayachee, 2016. Third, the study is of a relatively wide scope by including all employees at all levels in their respective functions as opposed to surveying only the perceptions of those in management.

Research questions

The research questions addressed in this study were:

What is the perception of risk culture in the support functions of a public entity?

1. More specifically, is the perception of risk culture the same at and within management and non-management levels, and across all support functions?
2. In addition, what recommendations can be offered to improve the current risk culture and help improve employee attitudes and behaviour?

To answer the research questions, the study undertook a survey-based approach using a questionnaire to provide new insight into the employees' perceptions of risk culture in the support functions. This method allowed us to reach all potential participants and obtain many responses in a short period as opposed to other methods. The data analysis focused on validating survey measures of risk culture perceptions.

Hypotheses and their context

Given the findings of previous studies, the hypotheses for this study are as follows:

H1,0: The perceptions of risk culture between the various support functions are the same.

H1,A: There are inconsistent perceptions of risk culture between the various support functions.

H2,0: The finance and other support functions have the same risk culture perceptions.

H2,A: The finance function has a higher risk culture perception when compared to other functions due to the understanding that the cost of dealing with poor risk management should a risk materialise is high. A poor risk culture in Finance function could potentially lead to financial loss for the organisation.

H3,0: There is no difference between the risk culture perceptions of employees in management and non-management roles.

H3,A: There is a difference between the risk culture perceptions of employees in management and non-management roles. Management has a better understanding of risk and are of the view that risk management principles are integrated into decision-making in line with the findings of Padayachee (2016).

These hypotheses make the following assumptions that this study sought to test. The premise is that the risk culture as investigated will, indeed, differ between management and non-management employees. Specifically, management will have a higher perception of risk culture than non-management personnel whereas senior management have a significantly higher perception of risk culture than middle and lower management. Employees in the different support functions have differing understanding and expectations of their roles and responsibilities in relation to risk management.

Contribution of the study

The results of this study inform both researchers and practitioners in several ways. For example, the article contributes to insights vis-à-vis the role of risk culture when implementing risk management processes. It also contributes to scholarly research in the field through new knowledge of risk culture in a support function setting. These results may be useful to other public entities, government departments or support functions that may want to assess or improve their risk culture. Furthermore, the study data are expected to contribute to the testing of the applicability of the Centre for Applied Risk Management Risk Culture Scale (UARM RCS-2019) in the public sector. Though this study is not the first to report on risk culture perceptions, it is, as far as we are aware, the first conducted in the organisation surveyed in this way.

Background

This section describes the role of risk management and risk culture in the public sector. For the purpose of this article, culture is defined as “the collective programming of the mind that distinguishes the members of one group or category of people from others” (Hofstede, Hofstede, & Minkov, 2010, p. 6). Spencer-Oatey (2008, p. 3) defines culture as basic assumptions and orientations, principles and beliefs, rules, actions, and behavioural conventions shared by a group of people. Risk is defined as the effects of uncertainty on objectives, in accordance with the ISO (2018, p. 1).

Risk management in the public sector

The ISO (2018, p. 1) defines risk management as “coordinated activities to direct and control an organization with regard to risk”. Risk management focuses on risk identification and assessment throughout an organisation, and evaluating its probability and impact before identifying a suitable risk response (Supriadi & Sui Pheng, 2018). Risk management should therefore be entrenched in the day-to-day activities of the organisation and should not be accidental (Power & Hutter, 2005, p. 2). Risk management is thus the responsibility of all employees not least in a public entity. The Institute of Risk Management (2012a, p. 16) proclaims that embedding risk management in any organisation to the degree that it consistently adds value is a difficult task. The complexity and the context of the public sector is likely to increase the scope of risk-related decisions, thus the role of risk management in public entities needs to be significant (Bullock, Greer, & O’Toole, 2018).

The PFMA requires all public entities to implement and maintain effective, efficient, and transparent risk management systems. Thus, like the risk management process in the private sector, a representative risk management process in the public sector involves risk identification, assessment, control, and monitoring. The only difference between the two settings is that public entities generally must balance their role with responsibilities to the citizens of a country, which adds complexity to their management of risk. Consequently, risk decisions must be made in a complicated and changing context. In the private sector, exposure to risk is generally associated with an aim to achieve higher profit and accountability to shareholders, whereas the same may not be applicable in the public sector because strategic outcomes are different. Although public sector strategic objectives may be different from those in the private sector, risk culture is nevertheless a key enabling instrument for effective risk management in both (Institute of International Finance, 2009).

Understanding risk culture

A review of the literature confirmed that there is no universal definition of risk culture (Power et al. (2013). Although there is no widely accepted definition, it is nevertheless clear that risk culture is a subset of an organisational culture (CIMA, 2018). Organisational culture is defined as the shared assumptions that guide what happens in an organisation in terms of appropriate behaviour for various situations (Ravasi & Schultz, 2006). Simply stated, organisational culture is the way that things are done in an organisation (Cummings & Worley, 2005, p. 484). The Institute of Risk Management (2012b, p. 7) defines risk culture as “the values, beliefs, knowledge, and understanding about risk shared by a group of people with a common purpose”, whereas Sheedy and Griffin (2014) define risk culture as the shared employee perceptions of the prioritisation of risk management, as well as perceptions of the expected practices and behaviours relating to risk.

Organisations should have a strong risk culture which is largely associated with more desirable risk-related behaviour (Sheedy & Griffin, 2014). A strong risk culture demonstrates a clear and known organisational risk strategy, prompt escalation of issues and threats, information sharing across the organisation, as well as sustained role modelling of desired behaviours by senior management (Levy, Lamarre, & Twining, 2010). The Financial Stability Board (FSB) suggests three foundational elements of risk culture: risk governance, compensation, and risk appetite FSB (2014). These elements are not new but are crucial risk management concepts, suggesting that risk culture and risk management concepts are developed in parallel. Therefore, a sound and positive risk culture, where the management of risk is prioritised in the pursuit of objectives, is necessary (Sheedy & Griffin, 2018). The FSB (2014) suggests a risk culture will support proper risk behaviour, risk awareness, and judgments about taking risk. Furthermore, the FSB considers four attributes that indicate a sound risk culture, which are the tone from the top, risk accountability, communication and challenge, and incentives. It is important to note that of these, the top of the organisation is where embedding risk culture should start. Following the FSB paper, the EY Global Regulatory Network (2014b) puts forward four essential elements that influence and determine a sound risk culture. Each element is tied to controls that should be in place and effectively functioning.

- Leadership: signifies the important role of the tone set by the top management of an organisation. To establish the desired risk behaviours, the tone from the middle must also be aligned with the one from the top.
- Organisation: establishing the right environment, combining the manner in which risks are managed through roles, responsibilities and accountabilities with the right governance and business model to support desired risk behaviours.
- Risk framework: entrenched in the way the organisation manages risk and enables effective challenge.

- Incentives: relates to providing the right employee motivations, which include training, compensation, and other rewards.

The EY Global Regulatory Network (2014a) further recommends questions that organisations should be asking when assessing their own risk culture. Though not intended to address a public sector context, these questions can assist public entities to assess whether the elements of a strong risk culture are present in their own organisations. This will further enable public entities to hold all employees accountable for their behaviour and to continually monitor their actions.

There are many academic articles on risk and risk management, although academic research on risk culture is not as extensive. Earlier research demonstrates a strong emphasis on understanding risk culture, its importance and how it develops (Dohmen, Falk, Huffman, & Sunde, 2012). Although there are questions that remain unanswered, there has nevertheless been considerable research activity on the topic of risk culture. The literature has highlighted some benefits of a strong risk culture, namely, it:

- enables organisations to proactively identify and manage all types of risks including those that are specific to their business (Gorzen-Mitka, 2018);
- improves an organisation's ability to take strategic risk decisions and deliver on objectives (Institute of Risk Management, 2012b, p. 8);
- enables all employees in the organisation to have a clear understanding of the limitations of acceptable risk taking and is committed to ensuring that the boundaries of those limitations are respected (Sheedy & Griffin, 2014); and
- mitigates risk exposures to increasingly complex operational practices while enhancing workplace efficiencies; and prevents the occurrence of events that may have an undesirable impact (Smith-Bingham, 2015).

Risk culture in the public sector

The cultures of organisations in no other sector could affect the economic well-being of countries in such a significant way as those of the financial services organisations (Power et al., 2013). A poor risk culture is not a problem that is unique to financial services nor to the private sector. A positive risk culture is increasingly recognised as essential in any organisation and as an attribute that can affect an entity's risk-taking and control decisions.

Recent failures in certain public entities and state-owned enterprises, which are currently the subject of commissions of enquiry, may indicate that effective risk management and a change in risk culture are necessary. Sundberg and Sandberg (2006), however, suggest that it may be more difficult to

achieve a culture change in the public sector than in the private sector because of obstacles presented by bureaucracies inherent to the public sector. The differences between the public and private sectors require consideration when attempting to improve the risk culture. While there is no doubt that culture, and more specifically risk culture, should be a critical component in the public sector, it is still not clear whether recent inquiries into irregularities and failures in some public entities will facilitate more effective risk-taking and risk-control decisions.

Risk culture in support functions

Although risk culture studies have been conducted in other organisations, none focusing only on support functions could be found in a review of the literature. Support functions are business units that facilitate the parent organisation’s core activities. The specialised outputs of support functions are not intended directly for the customer but rather to support the delivery of organisational goals. These functions are therefore key enablers of an organisation’s success. In a public entity, support functions could include the finance department; human resources; governance, risk and compliance; information services and technology; and the legal department. As in any other part of the organisation, support functions are not immune to any culture present in the entity. The risk culture that exists in the organisation, whether unified or fragmented, also prevails in these functions. The management in support functions can therefore use the questions in Table 1, adapted from the EY Global Regulatory Network (2014a), to assess whether elements of a strong risk culture are present in their divisions.

Table 1: Proposed questions to assess the elements of a strong risk culture

Tone at the top	Does top management lead by example by demonstrating the right behaviours? Are there processes to ensure that risk messages are consistent, commonly understood and accepted across all support functions?
Assessing adopted values	Is assessing risk culture driven by regulatory compliance or by a desire to manage risk? Is risk management part of the decision-making process? Do organisational values consider desired risk behaviours? Is risk-taking behaviour linked to compensation?
Risk awareness	Is comprehensive risk training provided to all employee levels? Is there training on the risk policy, framework, risk appetite and the implications for non-compliance?

Learning from risk failures	<p>Does senior management track outstanding recommendations from internal audit and the auditor general?</p> <p>How quickly are internal audit or auditor general recommendations and management actions implemented?</p> <p>How do support functions react to risk events?</p> <p>Is there a process to review breakdowns in controls?</p>
Risk accountability	<p>Is it clear that each business unit within a support function is the first line of assurance, and is responsible for all aspects of risk stemming from its activities?</p> <p>Are all support functions taking the lead in identifying risks in their own areas?</p>
Risk escalation	<p>Is there a clear escalation process for identified risks and control breaches?</p> <p>Are there instances where an employee is moved to another position or business unit shortly after raising concerns about risk?</p> <p>Is the risk culture in the support functions proactive?</p>
Enforcement	<p>Do breaches in controls or unacceptable behaviour have consequences?</p>

Method

The study reported here followed a quantitative approach, based on a survey questionnaire, which is seen to be part of the positivist paradigm (Rahi, 2017) and is used to answer research questions that require numerical data (Williams, 2007). The survey strategy was to distribute an online questionnaire as a data collection technique. Such surveys allow the economic collection of extensive data from a population (Saunders, Lewis, & Thornhill, 2009). An online questionnaire was chosen in this case for its ability to reach and gather responses from a relatively large number of participants in various locations (Rowley, 2014). Moreover, the use of questionnaires ensures that the data collected are standardised, which allows easy comparison (Saunders et al., 2009).

Sampling and data collection

The first step in the quantitative data collection process is to identify the individuals, groups and settings you intend to study, which involves determining whether individuals or entire organisations will be studied (Creswell, 2014). For this study, 3189 personnel working in the support functions of an organisation within the public administration sector in South Africa were identified as the target population. Nonprobability sampling was chosen in order to select employees that represent a characteristic of the organisation which the investigator wanted to study in line with Creswell (2014). Total population sampling, which is a type of purposive sampling technique, was selected due to the

heterogeneity of the study population and to provide a specific group of employees, who were requested to participate.

Support functions were chosen because it was the researcher's perception that, in contrast to operational areas in the organisation, the former were perceived to place more emphasis on the application of risk processes. A link to the UARM RCS-2019 questionnaire was distributed via email to the study population on 19 July 2019 and was left open for completion for a period of 15 business days. The respondents completed the questionnaire online via Research.net. The questionnaire was preceded by a cover letter explaining the aim of the study, informing potential participants that their involvement was voluntary and giving assurance that responses would be confidential, as reproduced in Appendix C. Two reminders to complete the questionnaire were emailed to all potential respondents on July 22 and August 5.

Ethical considerations

Approval to conduct the study was obtained from the organisation studied and ethical clearance was obtained from North-West University (clearance number: NWU-00399-19-A4). To ensure informed voluntary consent, the online questionnaire included a cover page where participants indicated their consent before completing the questionnaire (Appendix C), as recommended by Mahon (2014). Participants were informed of their right to withdraw from completing the questionnaire at any time and were assured of confidentiality and anonymity of their responses. Only personal characteristics specifically required for the research were collected; for example, the support function that the respondent works in. The study did not collect the participants' identities, IP addresses or email addresses, thereby ensuring their confidentiality and anonymity. Furthermore, the survey data were protected and stored securely. Since the questionnaire was administered online, the researcher could not unduly influence the participants and their responses. To try to encourage participant response and to ensure data quality, "forced responding" was enabled (Roberts & Allen, 2015). This meant that participants were unable to progress to the next question until the current question had been answered; an "I do not know" option was also included in the responses to items.

Demographic results of participants

A total of 972 employees accessed the survey, of whom 445 participated, yielding a response rate of 14%. While this appears to be low, Leedy and Ormrod (2014, p. 184) reported that as the target population size increases, the sampling rate that is acceptable can come down — for example, for a population of 1500, 20% should be sampled. In our case, for a population of 3189 the response rate of 14% will suffice to give an acceptable indication of the study population. Table 2 indicates the number of respondents representing the seven support functions who completed the survey. Internal

Audit had the highest percentage of participant responses (23%), whereas Finance, and Governance, International Relations, Strategy & Communications unexpectedly returned only 13% and 14% participation rates, respectively. No responses were discarded because there were no “I do not know” responses of more than 30%.

Table 2: Representation of participants according to support function

Support function	Number of employees	Number of participants	Percentage per function
Digital Information Services and Technology	661	84	13
Finance	901	120	13
Governance, Int. Relations, Strategy & Communications	604	87	14
Human Capital & Development	512	64	13
Internal Audit	78	18	23
Legal Counsel	365	58	16
Research Institute	68	14	21

Based on the demographics revealed, the 445 participants were categorised into management and non-management groups at 32% and 68%, respectively. The management group consisted of senior management (10%) and middle management (22%), whereas the non-management group also consisted of specialists who were at senior level but were not managers. The senior management group comprised group executives, executives and senior managers whereas the middle management group constituted managers and operations managers, as recorded in Table 3.

Table 3: Number of participants at each management level

Management level	Number of participants	Percentage
Senior management	45	10
Middle management	96	22
Non-management	304	68

The highest numbers of responses were from employees working in the Finance function, who represented 27% of the total respondents; Digital Information Services and Technology (19%); Governance, International Relations and Communications (20%); Human Capital & Development (14%); Internal Audit (4%); Legal Counsel (13%); and the Research Institute (3%). The highest level

of education for 63% of the participants was a bachelor's degree or higher. Of the 445 participants, 53% were female, 46% were male and 0.22% were 'other'. The distribution of the participants by age group is shown in Table 4. Most of the survey population were between the ages 40 and 49, whereas only 5% were between 20 and 29. Thus, the sample used for the study provided a balanced and acceptable population for purposes of this study.

Table 4: Age of participants

Age (years)	Number of participants	Percentage
20–29	24	5
30–39	121	27
40–49	191	43
50–59	101	23
>60	8	2

Table 5 illustrates the relative distribution of the length of service of the participants in the support functions. Note that 81% had been with the organisation for more than five years and 55% had served for over 10 years. This gave the researcher confidence in the survey results as being based on the participants' relatively long experience and knowledge of the organisation.

Table 5: Period participants have been employed in the organisation

Period (years)	Number of participants	Percentage
≤1	6	1
>1 ≤ 3	37	8
>3 ≤ 5	43	10
>5 ≤ 10	114	26
10+	245	55

Measurement instrument

The UARM RCS-2019 was selected as the tool for the assessment as the research is part of the UARM risk research program. The instrument consisted of demographic items followed by 44 risk-related items, in the form of a five-point Likert scale (1 = “strongly disagree”, 5 = “strongly agree”) and multiple-choice questions, depending on the item. Of the 44 questions, 24 assessed the perceived level of risk integration (Factor 1), whereas 18 assessed the respondent’s perceived comfort with own risk management role (Factor 2). In addition, every item had an “I don’t know” option where participants had no knowledge, perception or opinion, to avoid forcing them to select answers from the predefined list. Likert scales are often referred to as aggregated rating scales and are based on the notion that underlying phenomena can be measured by a collective of a participant’s rating of their own perceptions, feelings or attitudes related to an array of statements or items (Harpe, 2015). The UARM RCS-2019 has been refined and piloted over a 3-year period (2016–2018), with the 2019 version showing a high Cronbach’s α reliability coefficient of 0.97. Appendix B provides background on the questionnaire used in the study. In addition, the UARM RCS-2019 contained questions that allowed for suggestions on improving the risk culture of the organisation. Using an instrument specifically designed to measure risk culture allowed for the comparison of risk culture perceptions across business areas that perform support functions, focusing on the similarities and differences among the functions and between management levels.

Data analysis

The Likert scale data were analysed in an aggregated format using SAS[®] statistical software. Statistical tests were selected according to the research objectives, the scale format and distribution of the data. The interval measurement scale and descriptive statistics were used as recommended by Boone and Boone (2012). Participants’ responses to demographic questions were analysed using frequencies and percentages to develop a demographic profile of the sample. Factor analysis was conducted when the scale was developed. It had two factors and inferential statistics were performed to compare groups for each factor. Tests for data normality were applied as part of the test selection process. Normality of the score distributions for this sample could not be assumed and statistically significant differences were identified using non-parametric tests. Significant differences between groups were tested at the 99% confidence level using the Mann–Whitney U test when comparing two groups; the Kruskal–Wallis test, which is used as a nonparametric alternative to the ANOVA, was employed to compare more than two groups. Data analysis was interpreted to assign meaning to the information, to draw conclusions by determining its significance and implications, and to enable the reporting of findings.

Results and Discussion

The objective of this study was to assess the perception of risk culture held by members of staff in support functions. The data collected may suffer from under-coverage introduced by self-selection bias as a result of the respondents being allowed to decide whether or not they wanted to complete the survey (Lavrakas, 2008, p. 808). Therefore, the respondents who chose to participate may not represent the population well. The results may have also been subject to response bias as they relied on self-reported data. Respondents may have changed their perceptions and opinions because of taking part in the study. The anonymity of the survey was used to reduce any bias. Moreover, participants were made aware of the aim of the study but the hypotheses were not shared with them, to reduce the possibility of bias.

Results of factor scores

Factor scores were calculated as the weighted average of the responses over the items making up the factor. Although the UARM RCS-2019 may be used to provide an indication of where risk culture-related issues lie, the results do not indicate the overall risk culture of the support functions surveyed. Tables 6 and Table 7 show the values of factor scores per role and per function, respectively.

Table 6: Results of factor scores per role of participants

Level of role	Factor 1	Factor 2
Senior management (group executive; executive; senior manager)	2.8	3.6
Middle management (manager; operations manager)	3.0	3.6
Non-management (team member; operational specialist or other specialists)	3.0	3.5

Table 7: Results of factor scores per support function

Function	Factor 1	Factor 2
Finance	3.2	3.6
Human Capital and Development	2.8	3.5
Legal Counsel	3.1	3.5
Governance, International Relations, Strategy and Communications	2.9	3.5
Digital Information Services and Technology	2.9	3.4
Internal Audit	2.8	3.8
Research Institute	2.7	3.4

Factor 1: Perceived level of risk integration

The average score for Factor 1 was 3.0, which indicates a medium level of perceived risk integration in the support functions surveyed, using the scale as developed by Zaaiman (Appendix B). A score between 1.0 and 1.4 indicates a very low level of perceived risk integration, 1.5–2.4 indicates a low level, 2.5–3.4 signifies a medium level, 3.5–4.4 represents a high level whereas a score between 4.5 and 5.0 indicates a very high level. Senior management had the lowest score of 2.8 for Factor 1 compared with middle management and non-management, who both scored 3.0 (Table 6). When participants were grouped by function (Table 7), Finance recorded the highest average score of 3.2 followed closely by Legal Counsel with a Factor 1 score of 3.1. All functions indicated a medium level of perceived risk integration.

Factor 2: Perceived comfort with own risk management role

The average score for Factor 2 was 3.5, indicating a high level of perceived comfort with own risk management role (Appendix B). A score above 3.5 indicates a high level of comfort with own risk management role, whereas a medium level of perceived risk integration was expected. For Factor 2, participants at both management and non-management levels rated a high level of perceived comfort with their own risk management role. Respondents may have overestimated their positive abilities and underestimated their shortcomings, possibly because of a lack of awareness or not recognising their own failures. For this factor, senior and middle management had a score of 3.6 whereas non-management recorded a similar score of 3.5 (Table 6), with the Internal Audit function returning the highest average score of 3.8 (Table 7). Finance scored 3.6, though a higher value was expected as hypothesized. The high score recorded by Internal Audit is somewhat justified as the core role of personnel in this department is to provide assurance that risks are appropriately managed and that the organisation's controls are effective (de Zwaan, Stewart, & Subramaniam,

2011). Positively, the results of the item “I understand what the term 'risk' means”, contributing to this factor, indicate that overall the study population (94%) understand the term “risk” well. Understanding the term from the view of business activities is important due to the business objectives at stake. The question, however, is whether this understanding of the term “risk” is uniform across support functions. Furthermore, do employees understand how their own risk management activities are interrelated with those of others?

Distribution of scores for Factors 1 and 2

Figure 2 shows the distribution of the study population’s responses to UARM RCS-2019, and therefore the distribution of corresponding factor scores for the various support functions. The spread of the Factor 1 scores shows a normal distribution curve, around the mean of 2.97 (Figure 2).

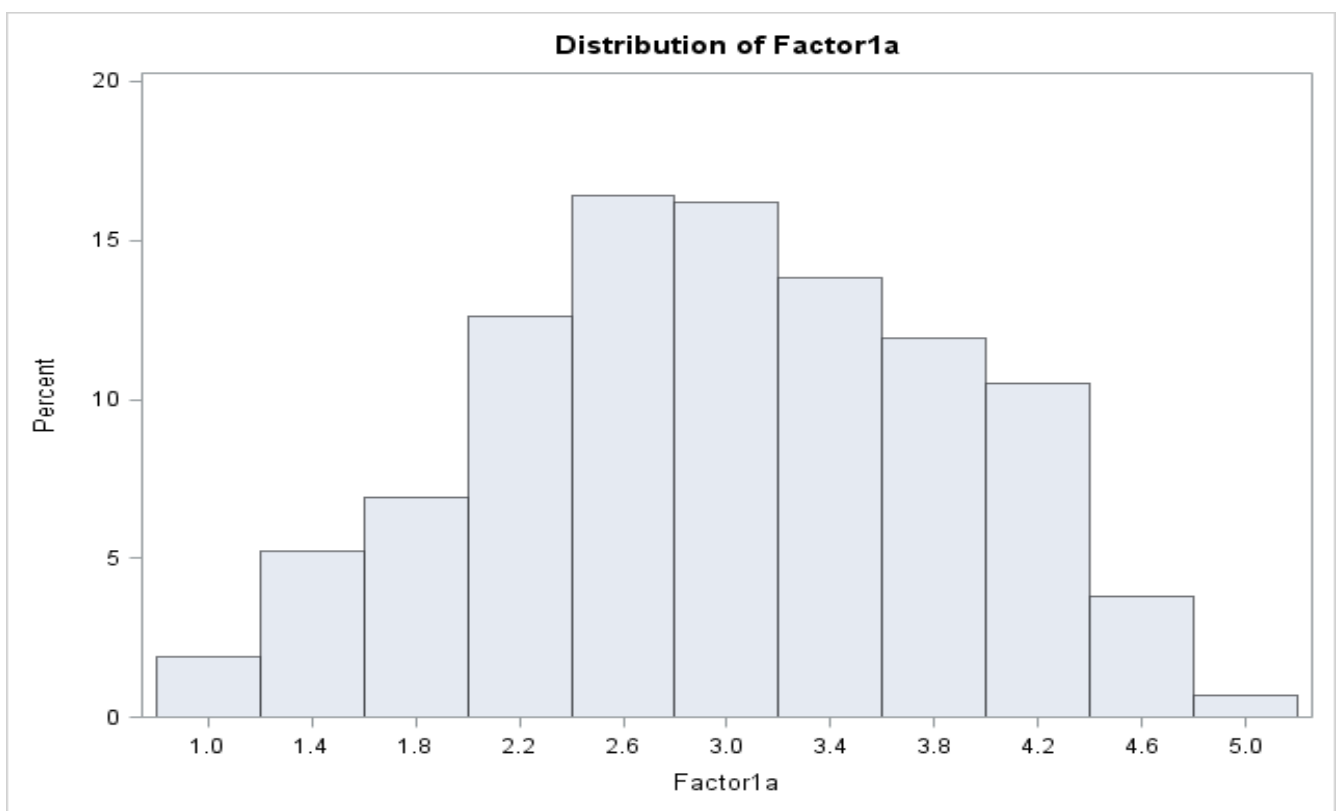


Figure 2: Distribution of participants’ responses for Factor 1

The distribution of the Factor 2 scores reveals a negatively skewed distribution curve, around the mean of 2.96, as the scores are displaced towards the higher side of the scale (Figure 3). The mean of 3.51 is to the left of the median at 3.61 whereas the mode of 4 is to the right.

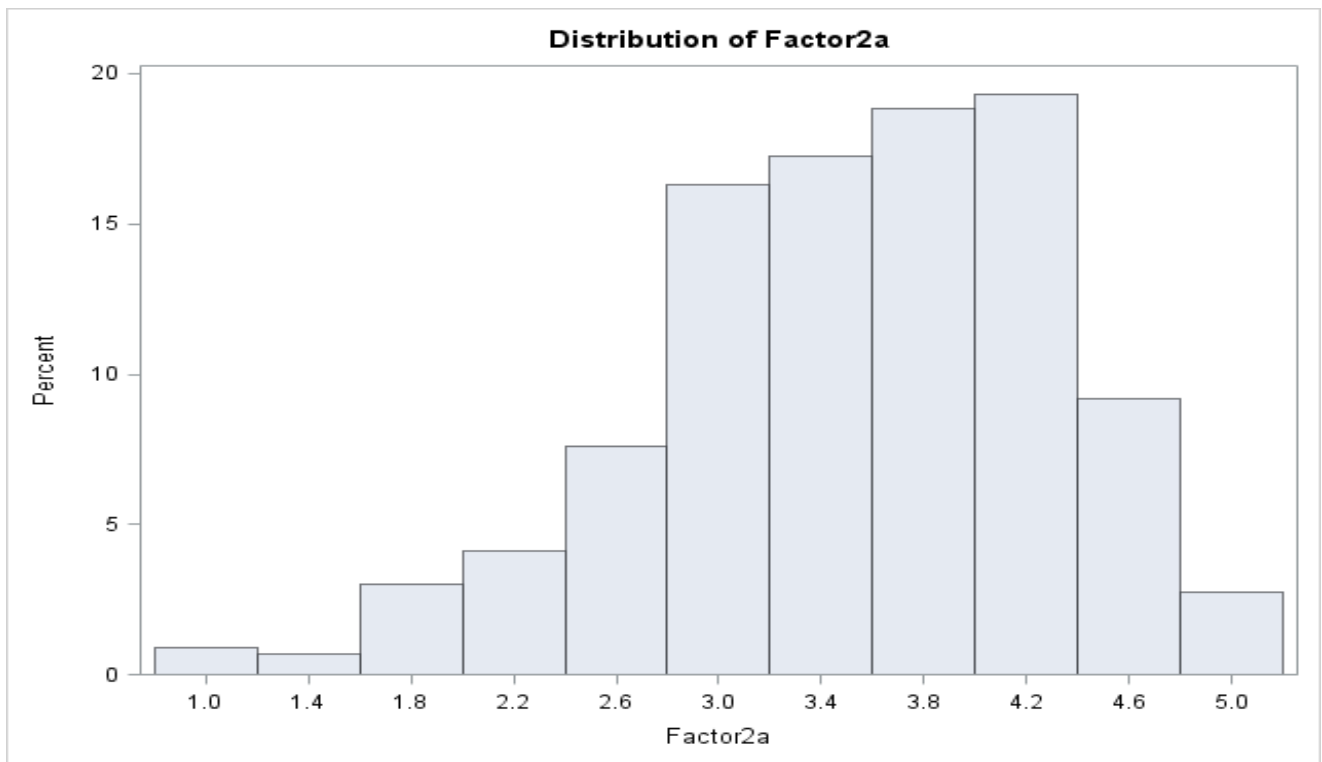


Figure 3: Distribution of participants' responses for Factor 2

Hypotheses testing

H1,0: The perceptions of risk culture between the various support functions are the same.

H1,A: There are inconsistent perceptions of risk culture between the various support functions.

The premise is that the perceptions of risk culture among the various support functions are inconsistent, because limited risk-training initiatives have been conducted, and therefore lower levels of risk awareness are expected in some support functions. Table 8 shows the results of the tests for any differences between the support functions where inconsistent perceptions of risk culture occur. No statistically significant difference was observed between functions. Significance testing was conducted using the significance level of 0.01, which indicates a 1% risk of concluding that there is a difference when there is none between groups, thereby rejecting the null hypothesis incorrectly when it is true. The test of significance for Factor 1 gives a p value of 0.029, which is higher than the significance level of 0.01, thus the null hypothesis cannot be rejected for this factor. Unexpectedly, the perceived level of risk integration is consistent across support functions. The p values for Factor 2 are also higher than the significance level of 0.01, thus the null hypothesis cannot be rejected for that factor either.

Table 8: Tests for differences between the support functions

Support function	n	Wilcoxon mean score	χ^2	p value	Significant difference at $\alpha=0.01$
<i>Factor 1: Perceived level of risk integration in organisation</i>					
Finance	115	239	14.04	0.029	No
Human Capital and Development	62	181			
Legal Counsel	53	228			
Governance, International Relations, Strategy and Communications	83	202			
Digital Information Services and Technology	76	201			
Internal Audit	18	184			
Research Institute	13	176			
<i>Factor 2: Perceived comfort with own risk management role</i>					
Finance	116	233	7.13	0.309	No
Human Capital and Development	64	208			
Legal Counsel	55	209			
Governance, International Relations, Strategy and Communications	85	223			
Digital Information Services and Technology	83	199			
Internal Audit	18	262			
Research Institute	14	195			

H2,0: The Finance and other support functions have the same risk culture perception.

H2,A: The Finance function has a higher risk culture perception than other functions.

The Finance function was expected to have a higher risk culture perception than the other functions as it is accountable for finances and drives the achievement of a financially unqualified audit opinion for the entity. The Mann–Whitney U test was conducted to determine whether there were differences between Finance and other support functions (Table 9). The results of the test of significance gave a p value of 0.003 for Factor 1, which is less than the significance level of 0.01, thus the null hypothesis is rejected at that level. We therefore accept that, in terms of level of risk integration in support functions, employees in Finance display a higher perception of risk culture as expected on the evidence of the Wilcoxon mean score. The p value for Factor 2 is 0.126 and, therefore, the null hypothesis that the factor distributions of the two groups are equal cannot be rejected. The perceived comfort with own risk management role is therefore similar across support functions.

Table 9: Tests for differences between the Finance function and other functions

Support function	n	Wilcoxon mean score	χ^2	p value	Significant difference at $\alpha=0.01$
<i>Factor 1: Perceived level of risk integration in organisation</i>					
Finance	115	239	8.83	0.003	Yes
Other	305	200			
<i>Factor 2: Perceived comfort with own risk management role</i>					
Finance	116	233	2.35	0.126	No
Other	319	212			

H3,0: There is no difference between the risk culture perception of employees in management and non-management roles.

H3,A: There is a difference between the risk culture perception of employees in management and non-management roles.

A difference between the risk culture perception of employees in the management and non-management roles was expected as management employees are more involved in business risk management activities. Risk management is predominantly seen as a management role, although the non-management staff complement also includes employees at a senior level but not in a management role. The Mann–Whitney U test was conducted on mean scores for management and non-management personnel to determine whether there were differences between the two groups (Table 10). There were no statistically significant differences found between the groups for both Factor 1 and 2. The p values of 0.179 and 0.408, respectively, are both higher than the significance level of 0.01. Thus, the null hypothesis that the factor distributions of the two groups are equal could not be rejected. The risk culture perceptions of employees in management and non-management roles are therefore the same.

Table 10: Tests for differences between management and non-management

Level of role	n	Wilcoxon mean score	χ^2	p value	Significant difference at $\alpha=0.01$
<i>Factor 1: Perceived level of risk integration in organisation</i>					
Management	137	199	1.80	0.179	No
Non-management	283	216			
<i>Factor 2: Perceived comfort with own risk management role</i>					
Management	141	225	0.68	0.408	No
Non-management	294	215			

Diagnostic information

Inclusion of risk in decision-making

On the first diagnostic question, which asked, “Which organisational characteristic assists you most to include risk when you make decisions?”, the option “Accountability for including risk when making decisions” scored the highest at 33%, selected by 149 participants. The majority (42%) of these respondents were part of the Finance function. This was followed by the option, “risk management framework (risk: appetite statement, limits, functions, systems, processes, data)”, with a score of 15%, selected by 65 participants. Based on these results, accountability for including risk when making decisions could be lacking in support functions and is thus perceived as a critical element for risk culture improvement. The top 3 items for this diagnostic question are shown in Table 11.

Table 11: Top three responses to the item “Which organisational characteristic assists you most to include risk when you make decisions?”

Statement	Frequency	Percent
Accountability for including risk when making decisions	149	33
Risk management framework (risk: appetite statement, limits, functions, systems, processes, data)	65	15
Shared understanding of risk	40	9

Recommendations to improve risk management

On the diagnostic which asked, “To improve risk management in the organisation, I believe that we must start with improving risk...”, Accountability for including risk when making decisions was selected and scored the highest, with a tally of 22%. This option was selected by 97 participants and was followed by risk communication and leadership: tone from the top with a score of 13%. Other items that were ranked highly were the understanding of the organisation’s risk management framework (processes, practices, etc.) and having a shared understanding of risk, as shown in Figure 11, which illustrates the top 3 items selected by the study population for this diagnostic question. The recommendations by participants provide further critical information that should be used by management to improve the risk culture in support functions. Most employees at senior management level selected the options “Leadership: tone from the top about actively including risk when making decisions” and “Accountability for including risk when making decisions”. Middle management personnel mainly selected “Accountability for including risk when making decisions” and “Risk management framework (risk: appetite statement, limits, functions, systems, processes, data)”. Non-

management personnel mostly selected “Accountability for including risk when making decisions”, similar to both management levels, and “Risk communication”.

Table 12: Top three responses to the item “To improve risk management in the organisation, I believe that we must start with improving risk...”

Statement	Frequency	Percent
Accountability for including risk when making decisions	97	22
Risk communication	59	13
Leadership: tone from the top about actively including risk when making decisions	56	13

Appendix D shows all response frequencies and percentages for the diagnostic questions.

Items rated highly on the “I do not know” option

Table 13 describes the top three items that were rated highly on the “I do not know” option. The item that elicited the largest response from participants (33%) was whether the organisation punishes staff members who take irresponsible risks. This was followed by 31% of respondents who do not know if the organisation rewards staff members who take responsible risks. The percentage of those surveyed who do not know if managers treat staff fairly when a risk occurs was 26%. Punishment and incentives for taking risks resulted in the highest response from participants not knowing how the support function personnel react when risks materialise. For the items “Managers treat staff fairly when a risk materialises (i.e. when a risk event occurs)”, 27% of management responded “I do not know”. This finding was perplexing as each manager should in principle have an idea on how they, in the performance of their duties, treat staff if a risk materialises and whether their own managers treat them fairly if this happens. This is one of the areas that requires attention as highlighted in the next steps and recommendations (Appendix A).

Table 13: Frequency of the “I do not know” option between management and non-management

Statement	Management	Non-management	Total
The organisation punishes staff members who take irresponsible risks.	36	111	147
The organisation rewards staff members who take responsible risks.	35	105	140
Managers treat staff fairly when a risk materialises (i.e. when a risk event occurs).	38	78	116

On the item “The organisation's risk training initiatives have prepared me to manage the risks connected to my role”, many participants indicated that they had either not received training or the training received had not prepared them for their role. Of the 445 respondents, 153 (34%) indicated that they had not received any formal risk training in the organisation whereas 50 (11%) reported that risk training initiatives had not prepared them to manage the risks connected to their role. Of the 50, 29% were at management level (see Figure 3).

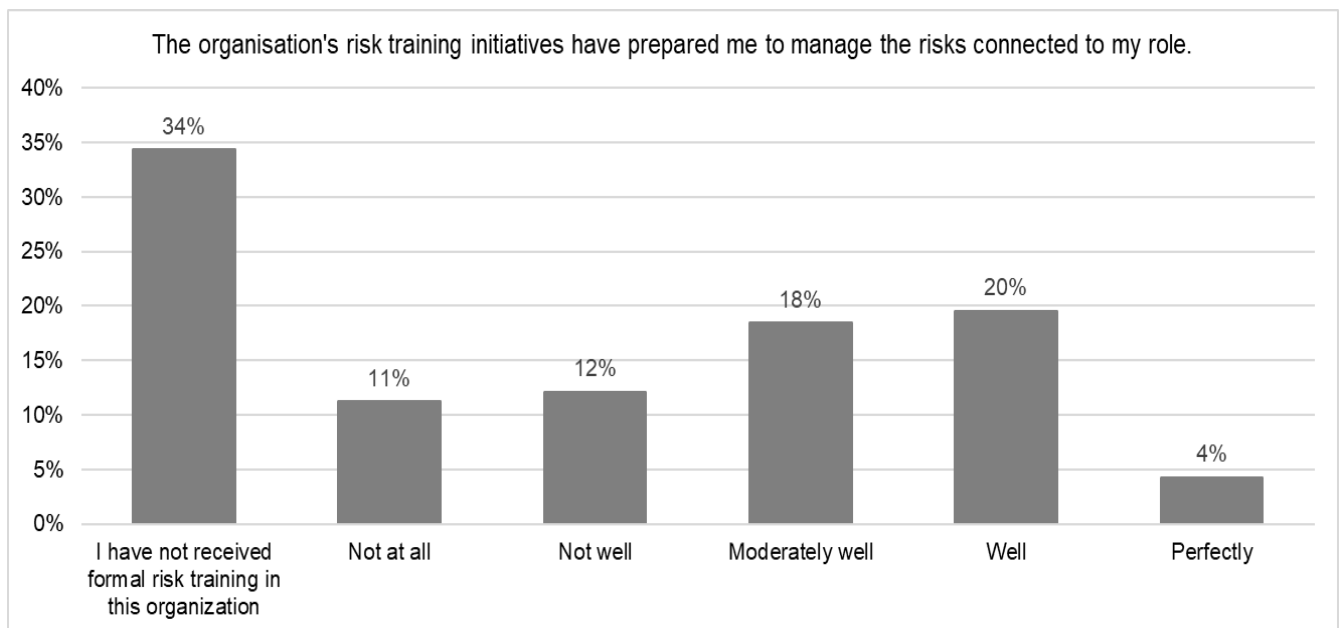


Figure 3: Risk training initiatives provided by the organisation

Though behaviour and a poor risk culture may have played a role in the shortcomings of the organisation, it could not be confirmed through the risk culture perceptions of support staff. This could perhaps indicate that the actions of a few employees can bring down an entire organisation (Power, 2009). Furthermore, while procedures do exist, to be effective these need to be supported

by the culture in which they operate (Institute of Risk Management, 2012a, p. 5). Based on the findings of this study, to improve the risk culture in support functions we recommend that management takes the steps and recommendations outlined in Appendix A. These were developed by the researcher based on insights obtained from the literature. The suggested steps are based on the philosophies of the ADKAR (Awareness, Desire, Knowledge, Ability, Reinforcement) model and the Plan, Do, Check, Act (PDCA) cycle. The ADKAR model places emphasis on the people element of change, and provides a solid foundation for change management activities (Hiatt, 2006, pp. 1-3). The PDCA cycle simplifies the problem-solving process and change management. The ADKAR model allows for incremental changes that will be less disruptive for the support functions, whereas the PDCA cycle is suitable for departmental change. Thus, it is recommended that a combination of ADKAR and PDCA be used to manage the change process.

Limitations of the study

The focus of the study was limited to self-reported perceptions of support function personnel, at a particular point in the life of the organisation, which restricts the generalisability of the results. The study relied on only a self-report method, thus qualitative data necessary for constructing a more comprehensive view could not be collected. The response rate was considered low for the sample size. Most of the participants were at non-management level; a higher senior management participation rate might have provided valuable input and perhaps a different view. This study included only support functions as opposed to a sample of the entire organisation, which could have provided different but valuable results. Furthermore, during the period in which the study was conducted there was much uncertainty in the organisation, which had undergone leadership changes and there were probable structural changes pending, which could have influenced the results. This may have led to difficulty in answering some of the questions and to employees opting not to participate.

Conclusion

This study aimed to ascertain and understand the risk culture perceptions of employees working in the support functions of a South African public entity. A literature review on risk culture in government departments and public entities was conducted and used as a foundation. Statistical analysis on the survey data was used to test the validity of the findings and significance of any differences in risk culture perceptions. Based on the study findings, it can be concluded that in the support functions that were studied, the level of risk culture maturity is medium with minor exceptions. No significant differences in risk management culture perceptions were found among employees in the support functions although the Finance function reported a higher risk culture than other functions.

No significant differences in risk management culture perceptions between managers and non-management personnel were found. While procedures that define the risk management process do exist, to be more effective these need to be supported by the culture in which they are used. Despite the existence of risk culture studies, none was found that assessed perceptions of risk culture in support functions. This was the first study of its kind in this organisation, where risk culture has never been investigated before. This work is therefore the first step towards understanding risk culture perceptions among the study population. It is expected that the research findings will enable management to prioritise risk culture and set a precedence for future work of this kind. The study can be used as a pilot project and organisation-wide research can be conducted at a later stage. It should provide useful and insightful data to practitioners and researchers.

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CHAPTER 3: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS (REFLECTION)

This master's thesis was a necessary step on my journey of pursuing personal growth. I started my research journey with a lot of enthusiasm and verve. I was eager to learn and even thought that I was somehow unstoppable. However, I became discouraged along the way as there were delays, due to unanticipated challenges. The organisation selected for the research took a lackadaisical approach in terms of approving my request to conduct research, and as a result I started this investigation much later than other students. The reason given for the delay experienced in obtaining approval was that "the initial request fell through the cracks" and the organisation's research committee further needed to assess the supposed benefits of the study prior to giving permission to continue with the study. Permission was finally granted as long as no employee names, IP and email addresses were collected and that the research report would not identify the organisation.

Colleagues questioned my research topic, some wanting to know why risk culture when there are so many other issues. Some asked why support functions and not the whole organisation, and others were of the view that nothing would come from it. Instead of homing in on these questions, I focused on the imminent outcomes of the study. Through this research I have learnt that what may be critical and urgent to me may not be seen in the same light by others. I have learnt to be patient and this taught me to engage with people I ask for help, which is something that is not my forte. I have learnt also to expect the unexpected and, instead of asking "why?", to rather embrace the outcomes. I have learned to challenge myself to step outside of my comfort zone.

I needed a lot of support along the way and my family, friends and colleagues were always there to encourage me. I enjoyed the journey and my knowledge of risk management and risk culture has increased immensely. After all, my first year had greatly sharpened my research skills and prepared me for this thesis. All the first-year modules covered were necessary elements that prepared me for my thesis. By the time I had to do this dissertation, my writing had undeniably improved and had become a lot more concise and my academic writing skills improved. I had to read a lot of literature to widen my knowledge of risk culture. Journal articles and regulatory papers and other non-academic documents allowed me to find wide-ranging information; I have gained insights about employee behaviour and about employee culture, especially the way they perceive risk. The survey method enabled me to provide statistics to support my research findings. The challenge is now to explore the research outcomes, along with any unanswered questions stemming from this research and to develop a plan of action for the organisation.

Throughout this study I had the support of the organisation, though many employees were not eager to participate. My colleagues were encouraged to participate in the survey through various mechanisms. My supervisor provided the necessary support and motivation throughout my journey

and I could not have done this without the team that performed the statistical analyses – their expertise was valuable beyond measure.

Lessons learnt

Setting research objectives and planning a survey presents a lot of challenges, of which the most important to me are summarised below.

- Have a clear path, research focus and small, achievable goals. When I started with the research, the objectives were a bit unclear and lacked substance. Evaluating the perceptions of all employees in support functions was broad and I ended up sending over 55 email inviting participants due to email restrictions where only 50 recipients were allowed per email. I should have focused on a more defined sample within support functions.
- Lobby for the support of colleagues and potential participants. Some of the latter see surveys as time consuming and, as a result, chose not to participate.
- I realised that colleagues who are interested in the research topic and/or outcomes will champion the mandate and motivate others to take part, thus increasing the response rate.
- Be prepared to respond to questions from participants. The consequences of the survey invitation were the many questions from participants, some very difficult to answer. Some of the concerns were around whether the organisation was ready for a risk culture survey and how the organisation would respond. Also, be ready to inform participants that it is ok to select “I don’t know”. I found that participants were often not keen on selecting the “I don’t know” option, with some preferring instead not to participate.
- Get the total population and related email addresses early. This will save you a lot of time and heartache as responses to requests for names and email addresses of employees, whether to the human resources or IT departments, can take long periods, depending on the data required.
- The questionnaire might take much longer for participants to complete than anticipated or determined during testing. Though many people took their time and completed the survey, some complained about its length and the time it took to complete.
- Not all participants have internet access, while others have restricted access and are required to justify why they need internet access in the performance of their role.
- Expect the unexpected – anticipated results are not guaranteed. I discovered that the results of research could be different from the anticipated results. There is no guarantee at the end of the study that you will get the results you expect.
- Interpreting statistics can be a nightmare. One needs a basic understanding of statistical analysis.

Overall, I thoroughly enjoyed the experience and have learned far more than I could have ever expected.

APPENDICES

Appendix A

Appendix A: Next steps and recommendations

There is clearly a need for a risk culture change in support functions. However, it is important to recognise that culture cannot be changed quickly; it is a journey that requires continuous and consistent management attention (Institute of Risk Management, 2012a, p. 84). Like any change, a risk culture change in support functions will require a phased approach.

Step 1: Planning for a risk culture change

- Review the research results and adopt as the current state of risk culture in support functions.
- Define a clear vision, therefore, where does management want support functions to go in the management of risk and publish that vision with management setting the tone.
- Create awareness of the need and reason for risk culture change and a desire to participate and support the change.
- Develop a change management plan to support the activities or roles that will need focus during the execution of the change.

Step 2: Changing the risk culture

- Create risk awareness across all levels and support functions. Employees should understand the basics of risk management and risk responsibility in their own role.
- Ensure that the risk framework is simple and easy to understand assists business areas as opposed to hindering them.
- Provide continuous training that covers risk management, risk appetite and related principles. Integrate risk management into all education and training materials.
- Senior management to provide guidance on risk taking and to ensure that they live the culture setting the tone.
- Management to recognise correct risk behaviour whereas bad behaviour must have repercussions.
- Develop a communications plan and communicate across levels and support functions through risk conversations.
- Enable employee participation in risk management ensuring that employees understand that it is not just the job of the risk management team but rather that all employees are essentially risk managers. Employees are more likely to adhere to a culture that they have developed.
- Treat all reported risk events seriously, investigate them and respond properly.
- Reinforce behavioural and compliance standards agreed upon in support functions. Ensure that there is individual accountability and employees are held accountable for their actions.

- Treat all employees equal across all support functions. Holding people accountable for their actions.
- Exercise fair treatment when risk materialises.

Step 3: Monitor, measure and manage the risk culture

- Perform regular ongoing risk monitoring and continual training.
- Conduct regular employee surveys which will provide valuable feedback to management and interviews can be conducted where necessary based on the survey results.
- Conduct benchmarking exercises against other functions and against support functions in other organisations.

Step 4: Review and refine the risk culture

- Refine risk performance metrics to reflect any changes in divisional strategies, risk tolerance and appetite.
- Implement risk measures and take corrective actions.
- Recognise and reward staff members who take responsible risks.
- Give employees regular feedback and ensure that the risk culture change is maintained and can be measured.

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" (BCBS, 2015, p. 2).

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-2018 (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
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

Appendix C: Risk culture survey cover page



Risk Culture Survey (UARM RCS-2019) Demo version

Survey explanation and consent

Dear Participant

You are invited to participate in an academic research study conducted by the Centre for Applied Risk Management (UARM), North-West University. (<http://commerce.nwu.ac.za/uarm/>)

The goal of the study is to obtain an understanding of the perceived risk culture within 'organisation name'.
The research question for this study is: [provide research question](#)

Note: The term 'the organisation' in this questionnaire refers to 'organisation/division/section'. Therefore, please answer all the questions with reference to the 'organisation/division/section' except where otherwise specified in the survey.

Notes:

- Specific wording (such as organisation and management level) can be changed to fit the study.
- The questionnaire can be branded using the organisation's logo.

Consent to conduct the research has been obtained from the 'organisation name' subject to the following conditions:

1. This is an anonymous survey, which means that you cannot be identified as participant in this survey.
2. Your participation is voluntary and you may exit the survey at any stage should you no longer wish to continue completing the survey.
3. The data will only be reported in aggregated format, meaning that individual responses will not be reported.
4. The organisation will not be identified in the research report.
5. Anonymised general results of the study may be published in an academic journal subject to permission from the organisation.

Note:

1. The survey consists of 8 (depending on study) demographic items followed by 44 risk-related items.
2. It should take you about 10 minutes to complete the survey.
3. We would like to know what your experience of risk management in the organisation is. Please answer all the items as honestly as possible.
4. You must be at least 18 years old to participate in this survey.
5. Only complete the questionnaire once per application of the survey.

Questions about this survey can be directed to:

[name of 'project sponsor and/or researcher depending on project'](#) at 'e-mail address and/or telephone number of contact person'
or Prof. Hermien Zaaiman at hermien.zaaiman@nwu.ac.za

Note: The North-West University, South Africa, owns the intellectual property to the contents of this survey.

- * 1. I am older than 18 years, have read the information above and consent to anonymously participate in this study on a voluntary basis. I also understand that I may exit this survey at any stage.

Yes

No

Appendix D: Response percentages for diagnostic questions

Inclusion of risk in decision-making: Responses to the item “Which organisational characteristic assists you most to include risk when you make decisions?”

Risk Inclusion options	Frequency	Percent
Accountability for including risk when making decisions	149	33
Risk management framework (risk: appetite statement, limits, functions, systems, processes, data)	65	15
Shared understanding of risk	40	9
Quality of risk-related information	38	9
Risk communication	34	8
Risk-related role clarity	25	6
Leadership: tone from the top about actively including risk when making decisions	22	5
Risk challenge when decisions are made	22	5
How risk is included in decision making in different groups in the organisation (group dynamics)	20	4
Leadership: tone in the middle about actively including risk when making decisions	18	4
Risk-based rewards (e.g. remuneration, succession planning and talent development)	12	3

Recommendations to improve risk management: Responses to the item “To improve risk management in the organisation, I believe that we must start with improving risk...”

Improvement options	Frequency	Percent
Accountability for including risk when making decisions	97	22
Risk communication	59	13
Leadership: tone from the top about actively including risk when making decisions	56	13
Risk management framework (risk: appetite statement, limits, functions, systems, processes, data)	52	12
Shared understanding of risk	48	11
How risk is included in decision making in different groups in the organisation (group dynamics)	35	8
Quality of risk-related information	28	6
Risk-based rewards (e.g. remuneration, succession planning and talent development)	26	6
Leadership: tone in the middle about actively including risk when making decisions	17	4
Risk-related role clarity	17	4
Risk challenge when decisions are made	10	2