Assessing risk communication culture in the South African Military Service

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

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Co-Supervisor:	Prof CM Erasmus

Graduation: May 2026

NOTES TO EXAMINERS

- The mini-dissertation should demonstrate that the student has the ability to:
  - do research,
  - constructively criticise own and others' research and
  - report the research results clearly, accurately and concisely with enough information to allow others to evaluate, and perform a similar study, should they wish to do so.
- This study represents the student's learning during a nine-month research project at master's degree level. It is, therefore, not necessary that the results represent a substantial contribution to the academic knowledge of the field.
- The mini-dissertation was written in article format and consists of three sections: Research Project Overview, Article and Reflection. The focus of the mini-dissertation is on the article written by the student.
- The research project overview section should provide a high-level introduction to the research project that adequately prepares the reader to understand the study.
- The reflection section should provide a critical evaluation of the study and allow the student to reflect on their personal learning during the project.
- The student should provide a study-specific summary of the literature related to the specific study in the article.
- The maximum word count for the article is 8 000. This maximum word count excludes words used in tables and figures, the article abstract, references and appendices. The maximum word count for the abstract is 300.
- The additional information in the appendices should be considered when evaluating the content of the three main sections of the dissertation.
- The supervisors' role was to provide guidance and assistance on project conceptualisation, data analysis, interpretation and writing skills. The student was ultimately responsible for conceptualising, setting up, executing and writing up the research project.
- Turnitin was used to assist with plagiarism checking before the student was allowed to submit for examination.

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: 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 supervisory team members contributed in an advisory and technical support capacity to the study's conception and design, analysis and interpretation of data and critical revision of the manuscript. The mini-dissertation was language edited before submission for examination. However, the student is responsible for making these edits and for the grammatical correctness of the final document.

I declare that this mini-dissertation was done according to the NWU Guidelines on Responsible and Ethical Use of Artificial Intelligence (https://www.nwu.ac.za/sites/www.nwu.ac.za/files/files/i-governance-management/policy/2024/November-2024/2P_2.4.3.2_Policy-on-Academic-Integrity.pdf)

The primary study supervisor permitted the student to submit this mini-dissertation for examination.

ABSTRACT

This study assesses the risk communication culture within the South African Military Service (SAMS) and its relation to the quality of decision-making. Given the unique challenges faced by the SAMS, which is characterised by an entrenched culture of secrecy and a complex historical transition to a democratic government; this research aims to fill critical gaps in the literature regarding the interplay between risk communication and decision quality. Utilising a quantitative survey-based methodology, the study employed validated instruments, including the Downs-Hazen Communication Satisfaction Questionnaire (CSQ) and the Wang et al. Decision Quality Questionnaire (DQQ), to gather empirical data on personnel's perceptions of communication practices and decision-making processes.

A stratified random sample of approximately 78 personnel from various ranks and education levels was surveyed to ensure representativity and to capture diverse insights into current risk communication practices, barriers and potential improvements. The research sought to identify key barriers to effective risk communication and to propose actionable recommendations for enhancing communication culture within SAMS.

The findings were expected to reveal a significant correlation between the risk communication climate and the quality of decision-making, contributing valuable insights that can lead to improved operational efficiency and effectiveness within the military context. Ultimately, this study aims to provide a framework for understanding the critical role of effective communication in enhancing decision-making capabilities, thereby fostering a more transparent and responsive organisational culture within SAMS.

Keywords: South African Military Service, Risk Management, Risk Communication Culture, Decision Quality, Risk Communication Barriers.

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- It took me longer than the permitted time to complete this qualification; however, I appreciate the support and the confidence that I was afforded by my family, the UARM academic staff, specifically the programme leader Dr Fred Goede, as well as the Dean of the Faculty, Prof Verona Leendertz, for allowing me the opportunity to complete my studies.
- To my lovely wife, Mrs. Mercy Sekwati and my daughters Akeelah and Hlompho, it was indeed a long and difficult journey (financially, emotionally and otherwise) as I spent most of the time away from you to focus on my studies while Prof Neels Erasmus kept me awake and busy all the time, but it was worth it and thanks for your support and patience.
- I equally appreciate the guidance provided by my main supervisor, Prof Diana Viljoen-Bezuidenhout, and my co-supervisor, Prof Cornelius "Neels" Marthinus Erasmus, for drilling the statistics into my head, especially with difficult questions, but it is clear that he is a master in what he does – thanks.
- To my final year sponsor (SA Navy), as part of the funding was personal, I would like to thank you for the financial support and for allowing me the permission to conduct the study with the organisation.

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RESEARCH PROJECT OVERVIEW

The proposed research project, titled “Assessing risk communication culture in the South African Military Service”, aims to investigate the risk communication culture within the South African Military Service (SAMS), in general, and more specifically, its relationship with the quality of decision-making effectiveness in the SAMS. This study is part of the MCom Applied Risk Management mini-dissertation programme at the Centre for Applied Risk Management (UARM) and is intended to contribute valuable insights to the SAMS while enhancing the student’s research capabilities.

This study fits into the field of risk management by investigating the potentially important relationship between risk communication culture and decision-making effectiveness within the SAMS. Effective risk communication is essential for managing risks, particularly in high-stakes environments like the military, where timely and accurate information can significantly impact operational success and national security.

This study is situated within the context of the Optentia Behavioural Risk research programme, which focuses on exploring the behavioural aspects of risk to enhance organisational objectives. Pietersen et al. (2020) argued that it appears the SAMS faces notable challenges in its risk communication culture, which is characterised by an entrenched culture of secrecy and a complex historical transition to a democratic government. These factors would contribute to inefficiencies in decision-making processes, leading to delays and inaccuracies that can compromise operational effectiveness.

The research employed a quantitative survey-based methodology, utilising validated instruments such as the Downs-Hazen Communication Satisfaction Questionnaire (CSQ) and the Wang et al. Decision Quality questionnaire (DQQ) scale to gather empirical data on employee perceptions of communication practices and the quality of decision-making within the organisation (Meintjes & Steyn, 2006; Wang et al., 2024). A stratified random sample of approximately 100 personnel from various ranks and different areas of specialities or mustering were surveyed to ensure representativity and to gather insights into current risk communication practices, barriers and ways for improvement.

By addressing identified gaps and barriers, the SAMS can foster a culture of transparency and the effective use of modern communication tools, ultimately improving its decision-making capabilities and building public trust (Liwång, 2017; Burnard et al., 2018). Overall, this study should not only add to the academic literature on risk communication and decision-making but also provide practical

insights that can improve the operational efficiency and effectiveness of the SAMS, thereby reinforcing the effectiveness of risk management within the organisation.

Additionally, this study provided the researcher with an opportunity to learn how to do an applied research project to demonstrate mastery of research at a master's degree level within a research context. The responsibilities of the different role players in this research project are described in Table 1.

Table 1: Role players in the assessment of risk communication culture in the South African Military Service

#	Team Member	Role
1	Researcher	Responsible for the final concept, set-up, execution of the research project and writing of the mini-dissertation. Ethical compliance and POPI Act adherence. Obtain approvals from all relevant bodies. Data collection and management. Collaboration with the Supervisor(s). Data analysis and reporting. Acknowledgement of all authors and material used in the study.
2	Supervisor (Prof Diana Viljoen-Bezuidenhout) Co-Supervisor (Prof Neels Erasmus)	The supervisory team members contribute in an advisory and technical support capacity to the study's conception and design, analysis and interpretation of data and critical revision of the manuscript.
3	Statistician (if relevant)	Cleaning of data and data analysis. (Prof Neels Erasmus)
4	Editor	Does a grammar-only edit of the dissertation before submission for examination.

Source: Own compilation (2025)

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ARTICLE

Assessing risk communication culture in the South African Military Service

ABSTRACT

This study assesses the risk communication culture within the SAMS and its relation to the quality of decision-making. Given the unique challenges faced by SAMS, which is characterised by an entrenched culture of secrecy and a complex historical transition to a democratic government, this research aims to fill critical gaps in the literature regarding the interplay between risk communication and decision quality. Utilising a quantitative survey-based methodology, the study employed validated instruments, including the Downs-Hazen Communication Satisfaction Questionnaire (CSQ) and the Wang et al. Decision Quality Questionnaire (DQQ), to gather empirical data on personnel perceptions of communication practices and decision-making processes.

A stratified random sample of approximately 78 personnel from various ranks and education levels was surveyed to ensure representativity and to capture diverse insights into current risk communication practices, barriers and potential improvements. The research sought to identify key barriers to effective risk communication and to propose actionable recommendations for enhancing communication culture and the quality of decision-making within the SAMS.

The findings were expected to reveal a significant correlation between the risk communication climate and the quality of decision-making, contributing valuable insights that can lead to improved operational efficiency and effectiveness within the military context. Ultimately, this study aims to provide a framework for understanding the critical role of effective communication in enhancing decision-making capabilities, thereby fostering a more transparent and responsive organisational culture within the SAMS.

Keywords: South African Military Service, Risk Management, Risk Communication Culture, Decision Quality, Risk Communication Barriers.

INTRODUCTION

Effective communication is a cornerstone of successful organisational operations, particularly in high-stakes environments such as the military. In the South African Military Service (SAMS), the ability to communicate risks effectively is crucial for informed decision-making and, hence, operational efficiency. However, existing literature suggests that a culture of secrecy and hierarchical communication structures may hinder effective risk communication within military organisations (Pietersen et al., 2020). On the other hand, Bahrain et al. (2023) argued that every organisation's success is built on effective communication, which fosters cooperation, creativity and overall productivity. However, barriers to communication are inevitable, especially in the military environment. The study aims to assess the risk communication culture and relationship to the quality of decision-making within the SAMS and also identify barriers that impede effective risk communication and decision-making processes.

The benefits of this study extend beyond academic contributions; they include practical recommendations for improving risk communication culture within the SAMS, ultimately improving operational effectiveness and fostering public trust. The study will contribute to filling the current knowledge gap that revolves around the understanding of the relationship between risk communication culture and the quality of decision-making within the SAMS. By addressing these gaps, this research would provide valuable insights that can inform key policies and practices, such as communication protocols, training and development programmes, decision-making frameworks, crisis management policies, organisational culture initiatives and evaluation and assessment tools for continuous improvement.

The overarching aim of this research is to evaluate whether the risk communication climate contributes to a more transparent and effective decision-making environment within the SAMS. The primary research aim that guides this study is to assess if there is a relationship between the risk communication climate and the effectiveness of decision-making within the SAMS. Secondary to that is to establish if there are differences in the communication climate and decision effectiveness with respect to rank and/or education level as well as to identify barriers to effective decision-making and improvements in the risk communication climate. To address these, the research objectives are:

- to investigate current risk communication practices within SAMS to assess if there is a relationship between the risk communication climate and the quality of the decision-making process;
- to investigate if there are differences in the communication climate and/or the quality of decisions in the SAMS with respect to rank and/or education level;
- to identify key barriers to effective risk communication; and
- to propose actionable recommendations for improving the risk communication culture.

The research questions and hypotheses flowing from these objectives are as follows:

1) Is there a relationship between the risk communication climate and the effectiveness of decision-making in the SAMS?

   H1a: There is a positive correlation between the risk communication climate and the quality of decision-making in the SAMS.

2) Is there a difference in the effectiveness of decision-making with respect to rank in the SAMS?

   H2a: The effectiveness of decision-making amongst officers is higher than amongst Non-Commanding Officers (NCOs).

3) Is there a difference in the communication climate with respect to the education level in the SAMS?

   H3a: The effectiveness of communication climate is different for different education levels in the SAMS.

4) What are the three top barriers to risk communication in the SAMS?
5) What are the best ways to improve the risk communication culture in the SAMS?

This study lays the groundwork for future research in the field of risk communication within military contexts and opens avenues for further exploration, including longitudinal studies and mixed-methods approaches. The methodology that was employed in this study is a quantitative survey design, utilising validated instruments such as the Downs-Hazen Communication Satisfaction Questionnaire (CSQ) and the Decision Quality Questionnaire (DQQ) scales. This approach allows for the collection of empirical data from a stratified random sample of approximately 100 personnel across various ranks and departments within the SAMS. The structured survey format facilitates the analysis of relationships between risk communication culture and the quality of decision-making effectiveness, providing a framework for understanding the dynamics at play.

Definitions and Abbreviations:

Osman and Lew (2021) define risk communication as an understanding of how information about risks is communicated within the organisation. Cohen et al. (2018) provide an insight into the decision-making process and define effective decision-making as the process of choosing the best possible course of action from the available alternatives based on logic, relevant data, sound judgment and an alignment with strategic goals.

SAMS – South African Military Service
CSQ – Communication Satisfaction Questionnaire
DQQ – Decision Quality Questionnaire
CC – Communication Climate
DQ – Decision Quality

BACKGROUND

The South African Military Service (SAMS) plays a crucial role in ensuring national security and responding to various crises and emergencies Andreas (2024).and Liwång (2017) emphasise the importance of effective risk communication in the successful execution of military operations as it facilitates timely decision-making, coordination and public trust. Olivier (2015), however, assisted in understanding how the SAMS's risk communication culture had been influenced by its historical context, organisational structure and evolving security landscape. The South African Military consists of four Arms of Services, i.e. the Army, the Air Force, the Navy and Health Services, and four Military Divisions, i.e. Joint Operations, Intelligence, Logistics and Human Resources Divisions, including subdivisions like the Military Police, Chaplains Division, etc.

The difference between the "services" and "divisions" emanates from the underlying activities of the division. Services carry out the core business as mandated in certain areas of speciality, be it land, aviation, maritime or health. They are also categorised by the wearing of a specific uniform. On the other hand, divisions also operate in the areas of speciality by utilising manpower, which is supplied by the services. This research was conducted in a specific service and not a division. The term South African Military Service was used to avoid disclosing the specific service for the research study.

The background was intended to illustrate the fact that the SAMS, like many military organisations, faced significant challenges in effectively communicating risks within the organisation. The failure to have a risk communication culture could lead to poor decision-making. Despite the critical importance of robust risk communication practices, there was a limited understanding of how these practices can be improved and their impact on the organisation's decision-making; hence, the aim of this study.

Le Roux (2005) and Jacobs (2012) demonstrated how the South African post-apartheid era brought significant changes to the military's strategic culture and communication practices. This transition resulted in a complex and dichotomous organisational culture that impacts the organisation's approach to risk communication. Additionally, Jacobs (2012) elaborated on how the ingrained culture of secrecy and non-communication within the SAMS posed challenges to effective information exchange and transparency.

Osman and Lew (2021) explored the role of risk culture in strategic decision-making within a business context and provided an insight into the risk management process, risk communication and risk culture. Bester (2024) assisted with an understanding of how developments in recent years, such as the advent of digital communication technologies and social media, had transformed the landscape of information dissemination and public engagement. While these tools offer opportunities

to improve risk communication, their integration into the SAMS's communication strategies remained a challenge. The effective use of these technologies could potentially improve transparency, timeliness of information exchange and public relations, thereby improving the quality of decision-making processes within the SAMS Department of Defence (2025) and Militaru and Cioca (2023).

Bester (2024) explored a critical aspect of cybersecurity within the SAMS, where the effective communication of risk information was vital for fostering a cyber-aware military. Given the emerging focus on cybersecurity in South Africa, the military service developed a robust internal communication strategy to ensure that military officers are well-informed and prepared to handle cyber threats. Based on the emerging focus on cybersecurity, the study contributed to understanding how an effective risk communication culture could promote a cyber-aware culture within the military service, which is vital for modern military operations. It appeared that information risks and the use of technology were affecting the South African military holistically because, up to this day and age, it still seems to be a contest to communicate while concealing the issues of security sensitivity.

Pietersen et al. (2020) argued that a lack of transparency and communication in policy-making decisions eventually leads to miscommunication because the policy and physical action on the ground were misaligned. This was irrespective of a good or a bad policy; however, the emphasis was on implementing and communicating policies openly within the organisation. By fostering a culture of transparency and openness, the SAMS could improve its quality of decision-making effectiveness and overall operational efficiency (Negulescu & Doval, 2014).

Maule (2008) wrote extensively about risk communication within organisations. Maule's work on risk communication within organisations provides foundational insights that could help frame the theoretical background of the research. His exploration of how risk communication affected decision-making and behaviour was directly applicable to understanding the dynamics within the SAMS. The argument was further supported by Kantabutra and Ketprapakorn (2024), who dealt with the confusion that was created in the literature: that many organisations did not realise the importance of communication in managing risks. As risk was normally associated with incidents of business disruptions, Burnard et al. (2018) explored organisational processes during disruptions and the factors that influence different responses.

The above shows that there is a clear gap with respect to the understanding and implementation of an effective risk communication culture within the SAMS, particularly in how these practices influence decision-making processes. This gap is characterised by an entrenched culture of secrecy and a lack of transparency, which can lead to inefficiencies and inaccuracies in decision-making. Addressing this gap is essential for enhancing operational effectiveness and fostering a culture of trust within the organisation.

METHOD

Introduction

The methodology that was employed will be detailed in the following sections, including the research design, sampling techniques, data collection methods and analysis procedures. The main purpose of this section is to enable others to independently replicate the results of this study. We firstly remind our readers of the research aims and questions to facilitate the rest of the discussion. The aim of this research is to evaluate the relationship between risk communication culture and the quality of decision-making within the SAMS.

To achieve this aim, the following research questions have been formulated:

1. Is there a relationship between the risk communication climate and the effectiveness of decision-making in the SAMS?
2. Is there a difference in the effectiveness of decision-making with respect to rank in the SAMS?
3. Is there a difference in the communication climate with respect to the education level in the SAMS?
4. What are the three top barriers to risk communication in the SAMS?
5. What are the best ways to improve the risk communication culture in the SAMS?

In this case, the study looked at how well information about risks is communicated within the SAMS and how that affects decision-making. We firstly searched for a validated scale that would help to answer the research questions; one category (Communication climate) of the CSQ factors was found suitable to assess the risk communication culture and, on the other hand, the full scale of DQQ was found suitable to assess the decision quality. A minor adjustment was made on the communication climate to read “risk communication climate”. On completion of the pilot test, the surveys to gather data from members were distributed by the Human Resources (HR) department within the SAMS. Because the study was well-organised and used clear methods, other researchers can use the same surveys and approach to ask similar questions and see if they find the same patterns or results.

Research design

The research philosophy that was used is positivism because it asserts that reality is objective and can be measured through empirical observations. This aligns with the study’s quantitative research design, which focuses on quantifying relationships and behaviours related to risk communication culture and the quality of decision-making. However, because this study is quantitative, the type of research was deductive, based on the fact that the research begins with a statement/hypothesis and then tests it through empirical observations and data collection. The quantitative research design is a structured approach that focuses on quantifying relationships, behaviours or phenomena through

statistical analysis. In the context of this study, a quantitative research design aligns well with the study's objectives for the reasons discussed below:

Quantitative research allowed for the objective measurement of variables related to risk communication culture and its relationship to decision-making. By employing structured surveys or questionnaires, the study gathered numerical data on various aspects of communication practices and decision-making effectiveness. A total of 23 research questionnaires were structured with two demographic questions on the rank group and education level; 5 questions from the CSQ factor "risk communication climate", 12 questions from the full-scale of DQQ and 4 open-ended questions that were split into 2 on the barriers of risk communication and the ways in which risk communication can be improved.

The quantitative approach facilitated the use of statistical analysis to identify patterns, correlations and relationships between different variables. For instance, the study analysed how the perceived communication climate correlates with decision-making processes within the SAMS. A well-designed quantitative study produced results that are generalisable to a larger population. By using a stratified random sampling method to select participants from various ranks and education levels within the SAMS, the findings are representative of the broader SAMS. This was crucial for the study's goal of providing actionable insights that could improve risk communication culture across the SAMS.

Sampling method

A stratified random sampling technique was employed to ensure representativeness across various ranks and education levels within the SAMS. The initial targeted sample was 300 but was later reduced to 100 because the HR department that was tasked with the distribution of the questionnaire expressed a high workload. However, the report from HR was that only 78 questionnaires were distributed, and 52 responses were returned; this was a 67 per cent response rate. However, only 45 responses (which is 58%) were analysed after some data were cleaned, due to an eliminating response (I do not know response for one or more of the Communication Climate (CC) or Decision Quality (DQ) factor items). This representation is crucial for understanding how different ranks perceive risk communication and decision quality.

Data Collection

The survey was conducted online by using Google Forms, and the questionnaires were distributed to the Human Resources department. Approximately 78 questionnaires were distributed by using a stratified random sampling technique to ensure representativity across various ranks and educational levels within the SAMS. The study utilised validated instruments, specifically the Downs-Hazen (CSQ) and (DQQ). These instruments included a 7-point and a 5-point Likert-like scale for

responses, respectively, with an additional “I don’t know” option to ensure clarity and comprehensiveness in responses. This structured format facilitated the collection of quantitative data while ensuring consistency in data collection.

Data Analysis

On completion of the data collection, the data were prepared by removing incomplete responses, e.g. “I don’t know” (IDNK) amongst the CSQ and DQQ factors so that such information can be analysed separately. However, from the 52 responses, there were 7 eliminated responses and, as a result, that did not justify a separate IDNK analysis. The collected data were statistically analysed to draw inferences about the relationship between the risk communication climate and decision-making effectiveness. The analysis included checking the reliability of the scales by using Cronbach’s Alpha. The Cronbach Alpha for Communication Climate was 0.91 and Decision Quality was 0.92. A generally accepted rule is that an Alpha score of 0.6-0.7 indicates an acceptable level of reliability. Inferential statistical analysis was used to test the correlation between the communication climate and decision quality factors while other open-ended questions were thematically analysed.

Ethical Considerations

Prior to data collection, ethics clearance was obtained from the relevant committees, and informed consent was secured from all participants. Measures were taken to ensure anonymity and confidentiality throughout the research process (Pietersen et al., 2020). This study was approved by the Economic and Management Sciences Research Ethics Committee (EMS-REC) and was assigned the following ethics clearance number: NWU-00878-25-A4.

RESULTS AND DISCUSSION

In analysing the data, descriptive and inferential statistics were used, which are essential components of quantitative research by providing a framework for data analysis and interpretation. An overview of both types of statistics is described below to provide context.

Descriptive Statistics

Descriptive statistics summarise and describe the main features of a dataset. They provide simple summaries about the sample and the measures. Common descriptive statistics include the following:

1. Measures of Central Tendency: Mean, median and mode.
2. Measures of Dispersion: Range, variance and standard deviation.
3. Frequency Distributions: Tables or graphs that show how often each value occurs.

Descriptive statistics are crucial for providing a clear picture of the data before conducting further analysis. They help researchers understand the basic characteristics of the data and identify patterns or trends.

Inferential Statistics

Inferential statistics allow researchers to make inferences and predictions about a population based on a sample of data. This type of statistics is used to test hypotheses and determine relationships between variables. Key concepts include the following:

1. Hypothesis Testing: Procedures to determine if there is enough evidence to reject a null hypothesis.
2. Confidence Intervals: A range of values that is likely to contain the population parameter with a certain level of confidence.
3. Regression Analysis: A statistical method for examining the relationship between dependent and independent variables.

Inferential statistics are vital for drawing conclusions from data and making generalisations about a larger population. Both descriptive and inferential statistics play a critical role in quantitative research, enabling researchers to summarise data effectively and make informed decisions based on statistical analysis. Understanding these concepts is essential for conducting robust research and interpreting results accurately.

The overarching aim of this research is to evaluate whether the risk communication climate contributes to a more transparent and effective decision-making environment within the SAMS. The primary research question guiding this study is as follows:

- Is there a relationship between the risk communication climate and the effectiveness of decision-making in the SAMS?

This section begins by presenting the profile of the survey population, which is broken down by various demographic variables, including rank and education level. This context is essential for understanding the perspectives of different personnel within the SAMS regarding risk communication and decision-making.

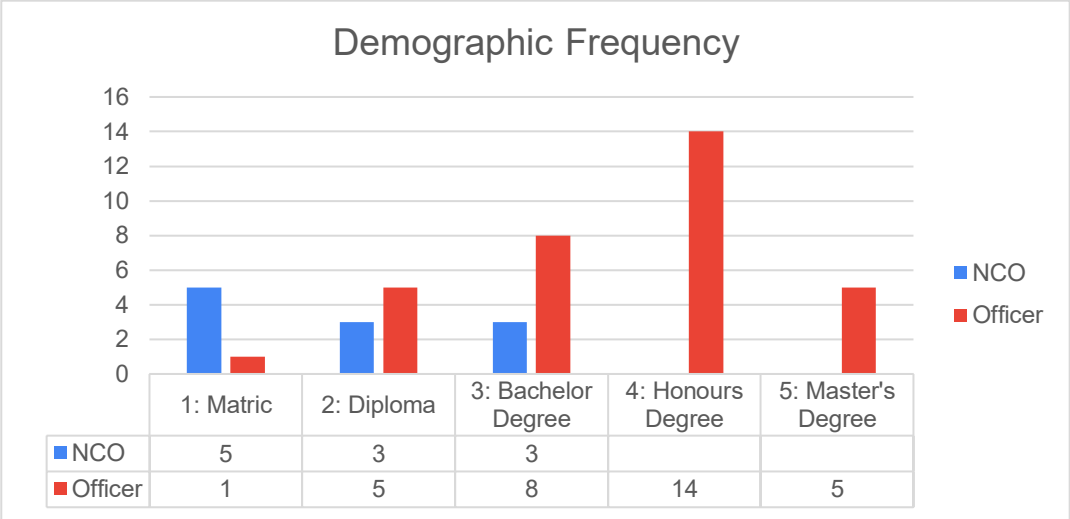
Following the demographic overview, the analysis was structured according to the research questions. Each question was addressed, in turn, with relevant statistical analyses conducted to provide insights into the relationships and differences identified. The findings were discussed in relation to the research questions, drawing conclusions based on the data collected.

In conclusion, this section will summarise the key findings from the analyses conducted in response to the research questions. It highlighted the implications of these findings for the SAMS, emphasising the importance of fostering a culture of open communication to improve decision-making processes. The summary also reflects on the potential for future research to further explore the dynamics of risk communication within military contexts.

Results

Figure 1 demonstrates the total survey population analysed by rank and education level, with bars indicating the qualifications by rank level.

Figure 2 shows how the communication climate correlates with decision quality, which was analysed to answer the main research question and test the primary hypothesis.



	1: Matric	2: Diploma	3: Bachelor Degree	4: Honours Degree	5: Master's Degree
NCO	5	3	3		
Officer	1	5	8	14	5

Figure 1: Survey population per Rank and Education Level
Source: Own compilation (2025)

The results will be discussed in the sequence of the research questions, with their associated research hypotheses and testing thereof, as/if applicable.

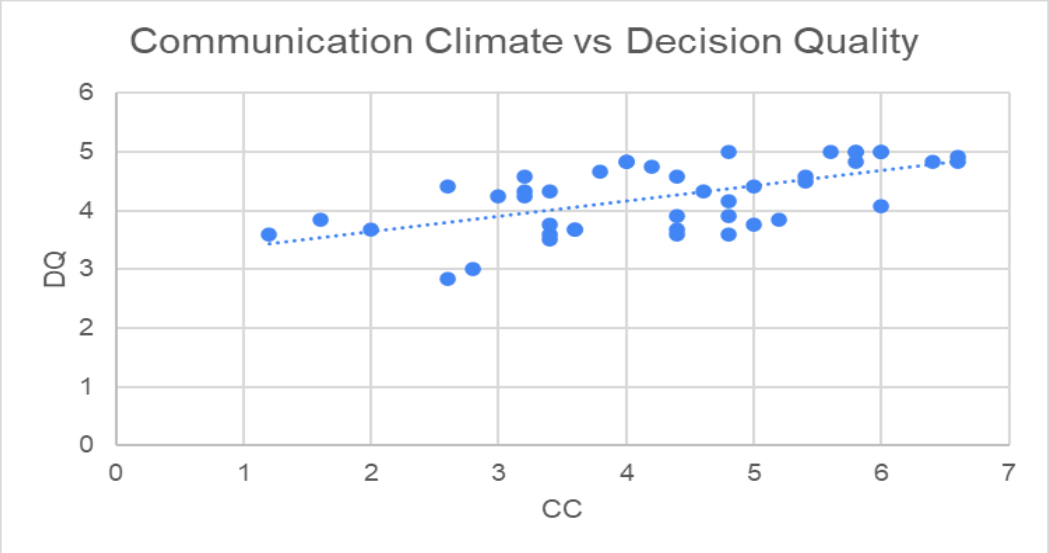


Figure 2: Scatter plot of Communication Climate vs Decision Quality
Source: Own compilation (2025)

Research Question 1:

1) Is there a relationship between the risk communication climate and the effectiveness of decision-making in the SAMS?

   $H1_0$: There is no relationship between the risk communication climate and the quality of decision-making in the SAMS

   $H1_a$: There is a positive correlation between the risk communication climate and the quality of decision-making in the SAMS

   Level of confidence: 95 per cent.

   Test statistics: Spearman Rank Correlation Coefficient.

Question 1 test results and discussion:

The analysis of the data indicates a statistically significant positive correlation of 0.509 between the risk communication climate and the decision quality factors within the SAMS. The Cronbach's alpha values for both the Communication Climate (0.912) and Decision Quality (0.925) suggest high internal consistency and reliability of the scales used in the study.

The Spearman's rank correlation coefficient was calculated as being 0.509, indicating a positive correlation between the risk communication culture and decision-making quality, The p-value was found to be 0.02 per cent (0.0002), which is well below the chosen alpha level of 0.05 and indicates that the likelihood of observing such a relationship due to random chance is extremely low, thus supporting the alternative hypothesis at a 99 per cent confidence level. The findings align with the study objectives, which aimed to assess the relationship between risk communication culture on

decision-making processes. We accept that correlation does not imply causality, but we argue that within this context, it is more likely that the communication climate influences the quality of decisions than the converse. We would therefore recommend to management that an improvement in the risk communication climate is likely to yield an improvement in decision quality in the SAMS.

Research Question 2:

2) Is there a difference in the effectiveness of decision-making with respect to rank in the SAMS?

$H2_0$: There is no difference in the effectiveness of decision-making between officers and NCOs

$H2_a$: The effectiveness of decision-making amongst officers is higher than amongst NCO's

Level of confidence:95 per cent

Test statistic: Mann-Whitney U

Question 2: Test results and discussion

A Box and Whiskers plot of the DQ factor with respect to the two rank categories is shown in Figure 3 below:

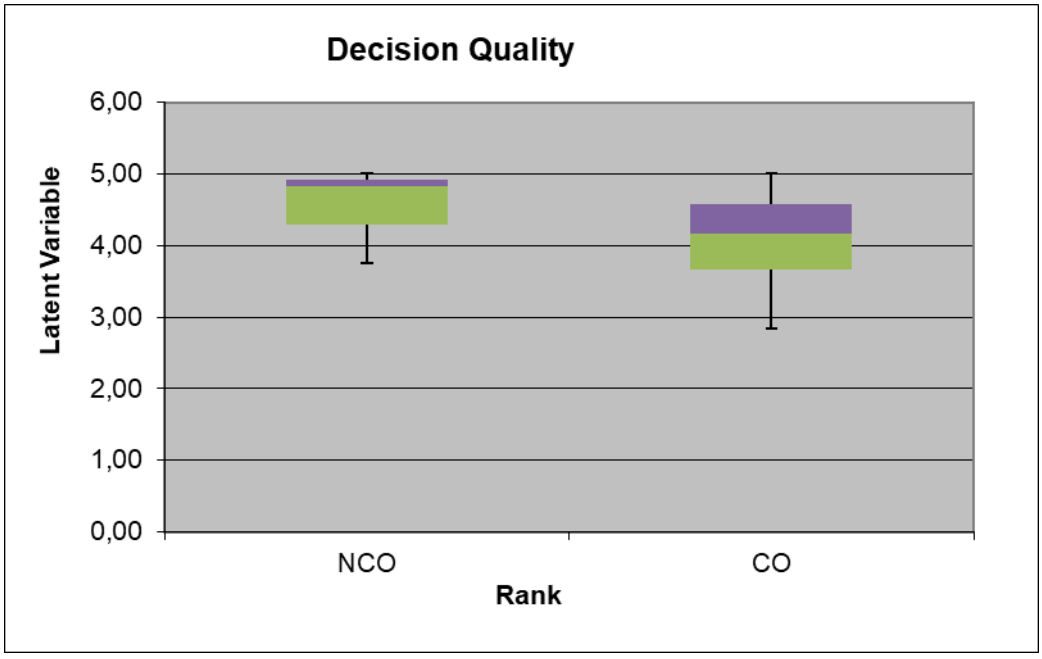


Figure 3: Box and Whiskers plot of DQ factor for the two ranks
Source: Own compilation (2025)

The Mann-Whitney U test yielded a value of U=180, with an associated p-value of 0.0181, which is statistically significant because it is less than our specified value of 0.05. It is common cause or general practice that those who are trained as officers are decision-makers whereas, on the other hand, NCOs are decision takers or executors, which could partly explain this result.

Research Question 3:

3) Is there a difference in the communication climate with respect to the education level in the SAMS?

$H3_0$: There is no difference in the communication climate with respect to the education level in the SAMS.

$H3_a$: The effectiveness of the communication climate is different for different education levels in the SAMS.

Level of confidence: 95 per cent

Test statistic: Kruskal-Wallis.

Question 3 test results and discussion

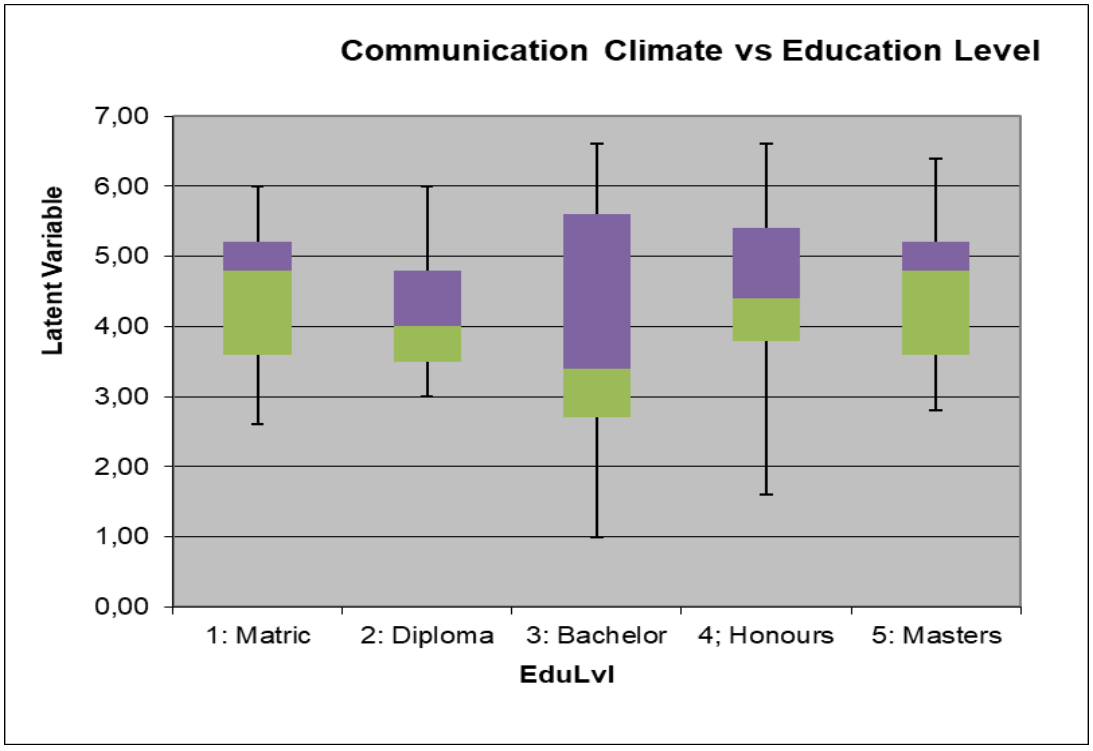


Figure 4: Box and Whiskers plot of Communication Climate factor vs Education Levels
Source: author's own construction (2025)

The Kruskal-Wallis's test yielded a test statistic value H of 2.417 with the associated p-value 0.657, which is not statistically significant because it is greater than our specified value of 0.05. This indicates that we do not have sufficient evidence to reject the null hypothesis. However, the lack of significant differences in the communication climate across different education levels suggests that further investigation may be needed to understand the dynamics of communication and decision-making. Future research could explore additional factors that may influence decision quality and consider larger sample sizes to enhance the robustness of the findings.

Research Question 4:

4) What are the three top barriers to risk communication in the SAMS?

Figure 5 depicts the distribution of the first, second and third choices of the six barriers to communications that are provided as options in the questionnaire.

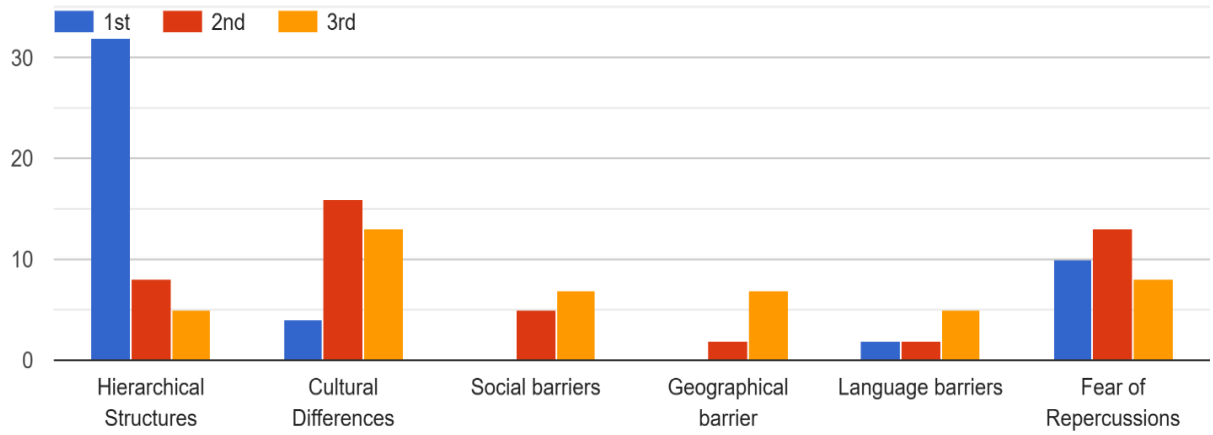


Figure 5: The top three barriers to communication within the SAMS
Source: Own compilation (2025)

The graph shows the responses to a multiple-choice question where participants were required to select the top three barriers to communication, followed by an open-ended question to suggest any other barrier not mentioned in the provided options. Taking a cursory view of the graph, one would assume that cultural difference is the second-largest barrier. However, a calculated weighted average – using the weights 3:2:1 for first, second and third choice – indicates that the largest barrier is hierarchical structures, the second-largest barrier is fear of repercussions and the third-largest barrier is cultural differences. It is not surprising that hierarchical structure tops the list because the military is rank-driven.

The findings from the open-ended question indicate that communication channels are a significant barrier to effective risk communication within the SAMS. Specifically, 37.2 per cent of participants identified modes of communication as a barrier. This suggests that the strict adherence to hierarchical communication structures may hinder open dialogue and engagement between leaders and subordinates.

This research was conducted within the military context; therefore, based on experience, it is not surprising that hierarchical structure is dominating because it is a practice where, in a military

environment, rank has privilege and automatically and easily classifies and identifies the level of command. Continuing with the latter, it also appears that, due to a disciplined space, a fear of repercussions ranks second; lastly, due to diversity – because of national recruitment strategy – there are grounds for cultural differences based on family/ethnicity or even tribal differences.

To address these barriers and improve the risk communication culture within the SAMS, I recommend the following actionable strategies for management:

- Establish open communication channels.
- Establish training and development programmes.
- Review and revise communication protocols.
- Encourage a culture of feedback.
- Utilise technology for communication.

Research Question 5:

5. What are the best ways to improve the risk communication culture in the SAMS?

The following graph depicts the distribution of the first, second and third choices of the best ways to improve communications that are provided as options in the questionnaire.

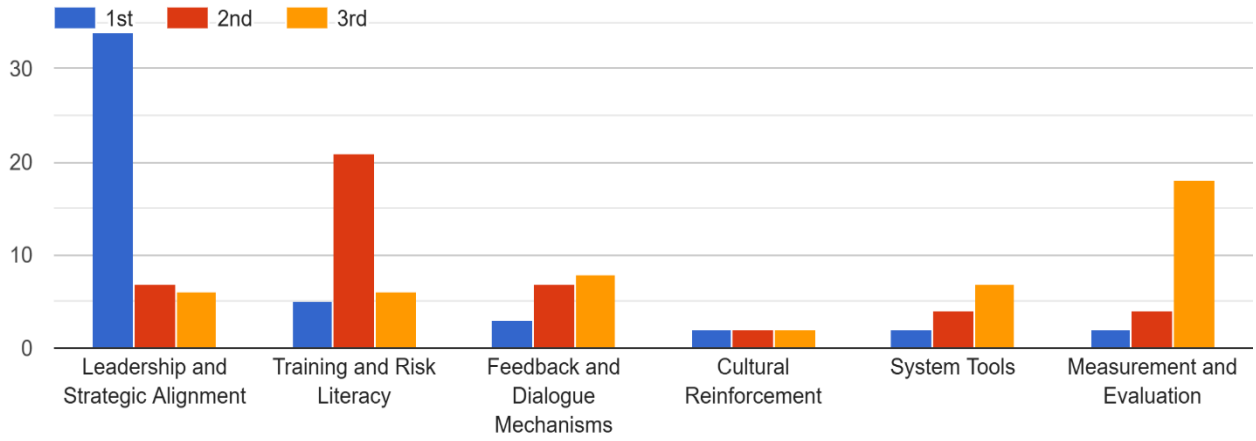


Figure 6: The top three aspects in which the risk communication culture can be improved within the SAMS
Source: Own compilation (2025)

- Use weights of 3:2:1 for first: second: third choice for the 45 responses.
- Weighted average for Leadership and Strategic Alignment = (34x3 + 7x2 + 6x1)/45 = 2.71
- Weighted average for Training and Risk Literacy = (5x3 + 21x2 + 6x1)/45 = 1.4

- Weighted average for Measurement and Evaluation = (2x3 + 4x2 + 18x1)/45 = 0.71
- Weighted average for Feedback and Dialogue Mechanisms = (3x3 + 7x2 + 8x1)/45 = 0.69

Figure 6 (above) shows the top three aspects chosen by participants in which the risk communication culture in the SAMS can be improved. The top three options were leadership and strategic alignment, training and risk literacy and measurement and evaluation, respectively. The military uses a top-down approach, and it appears that there are concerns around leadership and strategic alignment, which suggest that strategic objectives are not filtered down to all levels. The SAMS personnel are required to attend developmental courses, and data shows that training on risk literacy is not sufficient – if there is any such a module that focuses on general risk management. On the second open-ended question, approximately 15.6 per cent of participants suggested that open communication channels can improve the risk communication culture within the SAMS. These were well understood because in a disciplined military organization, the communication channels are very strict and are to be adhered to at all times.

This approach underscores the voices and experiences of participants, providing a platform for personnel to express their views on communication practices. This can lead to more actionable recommendations for improving the risk communication culture as it is grounded in the lived experiences of those within the SAMS contexts. Moreover, the study's findings underscore the necessity for the SAMS to implement strategies that are aimed at improving risk communication practices. Recommendations may include the following:

- The development of training programmes focused on communication skills.
- The establishment of clear communication protocols.
- The promotion of a culture that values transparency and feedback.

By addressing these areas, the SAMS can improve its decision-making capabilities, ultimately leading to improved operational effectiveness and public trust.

Summary

The analysis indicates a statistically significant positive correlation between the risk communication climate and overall decision quality factors within the SAMS, supporting the hypothesis that an improved communication climate is likely to improve decision quality. The study found significant differences in decision-making effectiveness between officers and NCOs, with officers demonstrating higher effectiveness. No significant differences were found in the communication climate based on education levels, indicating that further investigation may be needed to understand the dynamics of communication across different education levels.

The top barriers that were identified include hierarchical structures, fear of repercussions and cultural differences. These barriers hinder effective risk communication and decision-making processes within the SAMS. The study proposes several actionable recommendations, including the development of training programmes focused on communication skills, establishing clear communication protocols and fostering a culture of transparency and feedback.

CONCLUSION

The findings of this study provide compelling evidence regarding the interplay between risk communication, organisational hierarchy and decision-making effectiveness within the SAMS. The analysis yielded three primary conclusions.

First, a statistically significant positive correlation was established between the risk communication climate and the quality of decision-making. This strong relationship ($r = 0.509$, $p < 0.001$) underscores the foundational role that open and effective communication plays in facilitating superior decision-making processes. While the correlational nature of the data precludes definitive causal claims, the logical direction of influence strongly suggests that cultivating a positive risk communication climate is a critical prerequisite to improved decision outcomes.

To improve the CC within the SAMS, I recommend the following actionable strategies for management:

- Establish open communication channels.
- Establish training and development programmes.
- Review and revise communication protocols.
- Encourage a culture of feedback.
- Utilise technology for communication.
- Promote transparency in decision-making.
- Conduct regular assessments.

Second, the research identified a significant disparity in decision-making effectiveness based on rank. The rejection of the null hypothesis for the second research question confirms that officers perceive their decision-making quality to be higher than that of NCOs. This finding aligns with established military doctrine regarding differentiated roles in the decision-making cycle (decision-makers vs. decision-executors), suggesting that formal responsibility and training influence perceived efficacy and, hence, do not necessarily indicate a problem that needs management action.

The difference in decision quality between ranks is significant, and the findings regarding education levels suggest that the SAMS may need to focus on other aspects of communication and organisational culture to improve its risk communication practices effectively. Third, and conversely, the study found that the perceived communication climate is not contingent upon an individual's level of formal education. The lack of a significant difference indicates that the culture of communication is likely a function of shared organisational norms, leadership practices and systemic factors rather than the educational attainment of its members.

In synthesis, these results paint a clear picture: the pathway to enhancing decision-making in the SAMS lies less in elevating individual educational credentials and more in intentionally shaping the organisational environment. Specifically, leadership should focus on institutionalising a strong risk communication climate – a factor that demonstrably correlates with better decisions and may help bridge the efficacy gap that is observed between different ranks. Key contributions of this study include the identification of barriers and the establishment of a framework for future research and practical recommendations. Future research should aim to longitudinally test causal relationships and explore the specific communicative behaviours that most directly contribute to high-quality decisions.

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REFLECTION

Reflecting on the research project: “Assessing risk communication culture in the SAMS” I recognise the profound learning experience it has provided. This mini-dissertation not only allowed me to delve into the complexities of risk communication within a military context but also challenged me to critically evaluate my own research capabilities and the broader implications of my findings.

Critical Evaluation of the Research Project.

The research project was structured into three main sections: The Research Project Overview, The Article and The Reflection. This format facilitated a comprehensive understanding of the study’s objectives and outcomes. The overview effectively set the stage for the research, outlining the significance of assessing risk communication culture in the South African Military Service (SAMS). It highlighted the historical context and the need for improved communication practices to enhance decision-making quality.

In conducting the research, I employed a quantitative methodology, utilising validated instruments such as the Downs-Hazen Communication Satisfaction Questionnaire (CSQ) and the Decision Quality Questionnaire (DQQ). This approach not only ensured the reliability of the data collected but also allowed for a nuanced analysis of the communication climate and decision-making effectiveness across different ranks and educational levels within the SAMS.

One of the key findings of the study was the significant correlation between the risk communication climate and decision quality. This insight underscores the importance of fostering an open and transparent communication culture within military organisations. However, the research also revealed critical barriers to effective communication, such as hierarchical structures and fear of repercussions, which must be addressed to facilitate better decision-making processes.

Personal Learning Experience.

Throughout this project, I have developed a deeper understanding of the intricacies involved in conducting applied research at the master's level. I learned the importance of ethical considerations, including obtaining informed consent and ensuring participant anonymity, which are crucial in maintaining the integrity of the research process. Collaborating with my supervisory team provided invaluable guidance, enhancing my analytical skills and my ability to critically assess both my work and that of others.

Moreover, the process of data collection and analysis has equipped me with practical skills in using statistical methods, which are essential for interpreting research findings accurately. The experience

of presenting my findings in a structured format has also improved my ability to communicate complex ideas clearly and concisely.

Contribution to the Organisation and Sector.

The contribution of this study to the SAMS and the broader field of risk management is significant. By identifying key barriers to effective risk communication and proposing actionable recommendations, the research provides a framework for enhancing communication practices within the military. The insights gained can inform policy changes and training programs aimed at improving decision-making quality, ultimately leading to more effective operational outcomes.

In conclusion, this research project has been a transformative experience, allowing me to grow both academically and personally. It has reinforced my commitment to the field of applied risk management and highlighted the critical role of effective communication in organisational success. As I move forward, I am eager to apply the knowledge and skills gained from this project to future endeavours, contributing to the ongoing development of risk communication practices in military and other organisational contexts.

APPENDICES

Appendix A

Demographic questions					
1. To which of the rank groups do you belong	NCO	Officer			
2. What is your highest level of education completed?	Matric	Diploma	Bachelor Degree	Honours Degree	Masters Degree

Communication Climate

	I don't know	Very dissatisfied	Dissatisfied	Slightly dissatisfied	Indifferent	Slightly satisfied	Satisfied	Very satisfied
3.1. Extent to which SAMS risk communication motivates and stimulates an enthusiasm	0	1	2	3	4	5	6	7
3.2. Extent to which the people in the SAMS have great ability as communicators	0	1	2	3	4	5	6	7
3.3. Extent to which the SAMS's risk communication makes me identify with it or feel a vital part of it	0	1	2	3	4	5	6	7
3.4. Extent to which I receive on time the information needed to do my job	0	1	2	3	4	5	6	7
3.5. Extent to which conflicts are handled appropriately through proper risk communication channels	0	1	2	3	4	5	6	7

Decision Quality

	I don't know	Never	Rarely	Sometimes	Often	Always
4.1. The decisions I make address the problems I am trying to solve	0	1	2	3	4	5
4.2. The decisions I make optimise the opportunities I can get	0	1	2	3	4	5
4.3. The decisions I make have clear reasons, intentions and goals	0	1	2	3	4	5
4.4. My decision was made after exploring the possibilities of expanded alternative solutions	0	1	2	3	4	5
4.5. I formulate quality alternative solutions before making my decision	0	1	2	3	4	5
4.6. The information I use in making this decision is relevant and can anticipate the consequences that may arise after I make alternative choices for this decision	0	1	2	3	4	5
4.7. The information I use in making decisions is reliable and unbiased	0	1	2	3	4	5
4.8. The values of the decisions I make also accommodate the views of other key stakeholders	0	1	2	3	4	5
4.9. I can measure values directly from the decisions I make	0	1	2	3	4	5
4.10. I am aware the shortcomings and sacrifices of the choices I made	0	1	2	3	4	5
4.11. The decisions I make are sensible choices after weighing the alternatives I can choose, the information I know and the values I desire	0	1	2	3	4	5
4.12. The decisions I make drive my commitment to follow through and implement them	0	1	2	3	4	5

Other questions						
5.1. In order of importance, what do you consider the top three barriers to communication within the SAMS to be?	Hierarchical Structures	Cultural Differences	Social barriers	Geographical barrier	Language barriers	Fear of Repercussions
5.2. Are there any other barriers to communication not listed above that you consider important?						
6.1. In order of importance, what do you consider the top three aspects in which the risk communication culture can be improved within the SAMS?	Leadership & Strategic Alignment	Training and Risk Literacy	Feedback and Dialogue Mechanisms	Cultural Reinforcement	System Tools	Measurement and Evaluation
6.2. Please list any other ways in which risk communication culture can be improved?						