



**Challenges and enablers of effective risk communication. Viewpoints from Finnish safety authorities' communications professionals**

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Degree Programme in Leading Business Transformation  
Communication and Marketing Management  
Master's Thesis  
2023

## Abstract

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<b>Degree</b> Master of Business Administration, Communication and Marketing Management
<b>Report/thesis title</b> Challenges and enablers of effective risk communication. Viewpoints from Finnish safety authorities' communications professionals
<b>Number of pages and appendix pages</b> 54 + 3
<p>Risk communication initiatives often come from the direction of different public authorities and agencies. As governmental safety authorities' aim is to protect people, society and the environment from harmful events and effects, they are responsible for monitoring, assessing, and communicating risks of their specific field of operation to potentially affected groups of people.</p> <p>The purpose of this thesis is to gain understanding of the factors promoting effective risk communication as well as the challenges hindering the success. This is done by examining risk communication literature as well as investigating the current state of and development needs for effective risk communication among Finnish safety authorities. The thesis aims at providing a current state analysis as well as development suggestions for Finnish safety authorities on how risk communication could be improved and developed.</p> <p>The theoretical framework introduces the concepts of public communication, risk communication and risk perception. Main theoretical models of risk communication, such as risk perception model and trust determination model, are presented.</p> <p>The empirical part was conducted as a case study. The data was collected via an electronic questionnaire from communication professionals of chosen Finnish safety authorities. Both quantitative analysis and qualitative content analysis were used to analyze the results of the survey.</p> <p>According to the results, the respondents had similar ideas on several challenges and enablers of effective risk communication such as resources, more precise objectives and planning, cooperation with other experts and organizations, as well as reaching the target group in an effective manner. There was also diversity in the responses to certain topics such as how risk communication is perceived in general and how to implement it effectively.</p> <p>The study shows that implementing risk communication is a complex and challenging task. In order to really understand the target audience, their perceptions of risks need to be explored. Building trust is also an important part of risk communication.</p> <p>The author sees that the results can be utilized by the Finnish safety authorities when considering the current state of their risk communication and the possibilities for improvement. In addition, it would be important that the safety authorities have a common understanding about the concept and importance of risk communication.</p>
<b>Keywords</b> risk communication, risk perception, risk, trust, public communications, case study

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# 1. Introduction

## 1.1. Life involves risks that need to be communicated

Life and existence inevitably involve risks. Individuals, communities, organizations, and societies engage in events and behaviors that include uncertainties and the possibility of an unpleasant result. However, many risks can be assessed and managed before they escalate into a crisis. As part of risk analysis, risk communication is meant to help people understand and interpret risk as well as make informed decisions about how to react and to behave regarding the risk. (Reynolds 2011, 207.) By sharing information to and promoting dialogue with the target audience, risk communication aims to prevent and mitigate the effects of a potential emergency. (Renn 2010, 81,82.)

The concept of risk is nothing new; people face an enormous variety of risks daily and have done so for as long as our species has existed. However, risks have changed along with industrial, technological, and social development in the societies. In the 20<sup>th</sup> and 21<sup>st</sup> centuries, several tragic incidents such as Bhopal gas tragedy, nuclear power plant accidents of Chernobyl and Three Mile Island, 9/11 terrorist attacks as well as numerous natural and environmental disasters have gained wide attention and will remind people about the hazardous and unexpected side of life. Many disasters and accidents are not unforeseen; in many cases, scientists and other experts have conducted analyses and assessments and communicated the potential risks in advance.

The background of risk communication is, depending on the source, in the late 1970s or early 1980s when the gap between the public's perception of risk and the risk assessments of experts wanted to be decreased. The purpose of risk communication then was to correct public's lack of information by means of educating them better, in other words, filling the information deficit of lay people. Later in the 21<sup>st</sup> century, public interaction and participation have been increasingly emphasized for effective risk communication. (Rönkä 2017, 25.) Thus, the focus of risk communication has shifted from not only disseminating information but to understanding better the communication process leading to changes in people's beliefs and behaviors. (WHO 2021, 9.) Despite of the widely accepted perspective of interactivity and engagement, there is still a disconnection between how risk communication is defined and how it is practiced. How to do risk communications properly, continues to be the subject of extensive discussion. (Schulte et al. 1993, 3.)

Today, those communicating risks, need to deal with new kinds of risks and the increased public interest and discussion via many new communication channels. Moving from one-directional information flow towards interactivity and dialogue, understanding people's risk perceptions and

behavior as well as recognizing the opportunities of new communications technologies are inevitable for modern risk communication. (Kasza et al. 2022, 2.)

The topic of this thesis, the risk communication of Finnish safety authorities, is current; risks are not vanishing anywhere. Quite the contrary, with the future, new risks arise and effective measures to manage them are needed. According to the latest World Economic Forum's risks perception survey, 84 % of respondents were either concerned or worried about the outlook for the world. As the world continues to struggle with the post effects of COVID-19, other global challenges such as geopolitical tensions also burden the population. At the same time climate change continues to be perceived as the gravest threat to humanity with regular examples of extreme weather events and natural catastrophes. (World Economic Forum 2022.) When individual risks and people's everyday choices are added to the list, there is plenty of risk information that needs to be shared, dialogue to be fostered and best possible options and solutions to be supported.

## **1.2. Scope and limitations of the study**

Risk communication initiatives often come from the direction of different public authorities and agencies. As governmental safety authorities' aim is to protect people, society and the environment from harmful events and effects, they are responsible for monitoring, assessing, and communicating risks of their specific field of operation to potentially affected groups of people. The features of public risk communication are examined in more detail in chapter 2.1.

This thesis examines factors that make risk communication effective; it aims to find out the elements that promote effective risk communications and the factors that challenge or hinder it. Risk communication includes both internal communication – for example, with frontline employees dealing with the risk —and external communication, with affected publics. (WHO 2021,9.) As a case study, this thesis takes a specific look at how Finnish safety authorities implement risk communications for their external audiences and how to improve it. The external audience or target group in this thesis means the general public / the citizens affected.

Risk communications in this thesis refers to pre-emergency situations, where communication activities and dialogue aim at preventing escalations, through sharing information about the risks as well as changing beliefs and behavior of the target group to mitigate the risk. The theme is examined from the authorities' point of view; authority being the communicator and the target of the study. The thesis concentrates on risk communication, not on risk management or risk assessment at a wider scale, even though the concepts are interconnected. The connection is described shortly in chapter 2.2.

In this thesis, the concept of “risk” is delimited to mean harmful issues that threaten the life or well-being of people; natural and environmental hazards, health related risks, (human-made) industrial or technological risks or other risks concerning the security and safety of citizens (e.g., geopolitical safety). Business related, economical or reputational risks (financial, legal etc.) are not included in this study. Furthermore, to make a clear distinction from crisis and emergency communications, the focus in this thesis is on preventive, pre-emergency risk communications. The difference between risk and crisis communications is explained in chapter 2.3.

Safety authority in this thesis refers to Finnish state authorities and agencies that look after citizens' well-being and safety in different ways. The safety authorities chosen for this study have an important societal role, in which they implement risk communication towards target audience as a preventive measure; they communicate risks concerning the safety of people or their habitat as well as provide potential solutions and choices to decrease these risks.

Finally, it is to notice that the aim of this thesis is not to give instructions on how or in which channels risk communications should be implemented; there are plenty of practical guidelines giving recommendations for practical realization. Instead, the emphasis is more on the strategic side of the topic, on the essence and nature of risk communication, as well as on its importance and challenges.

### **1.3. Thesis objective and research questions**

The purpose of this thesis is to gain understanding of the factors promoting effective risk communication as well as the challenges hindering the success. This is done by examining risk communication literature as well as investigating the current state of and development needs for effective risk communication among Finnish safety authorities. The thesis aims at providing a current state analysis as well as development suggestions for Finnish safety authorities on how risk communication could be improved and developed. The thesis is not commissioned by any specific organization. However, the thesis author is currently working for a Finnish safety authority and has personal interest towards the topic and its development.

The main research question is:

**RQ1: What kind of means and development do Finnish safety authorities need to be able to implement effective risk communication?**

The sub questions are:

RQ2: What is the current state and status of risk communications of Finnish safety authorities?

RQ3: What are the main challenges concerning risk communication of Finnish safety authorities?

RQ4: How can risk communication of Finnish safety authorities be improved?

The theoretical framework in chapter 2 introduces the concepts of public communication and risk communication as well as some main theoretical models of risk communication.

The empirical part was conducted as a case study. The data was collected via an electronic survey from communication professionals of chosen Finnish safety authorities. Twenty (20) communication professionals from eight (8) safety authorities took part in the study. The approach and methods are presented in chapter 3 and the survey results in chapter 4. Chapter 5 analyses and discusses the data, mirroring the findings to the literature and theories and making conclusions. The final chapter evaluates the trustworthiness and success of the study.

#### **1.4. Key terminology**

Key vocabulary of the studied topic is presented according to two governmental sources from the UK and USA: Office for Product Safety & Standards (OPPS) and Department of Homeland Security (DHS). The definitions follow almost verbatim the OPSS and DHS definitions and are presented in alphabetical order.

*hazard*: “natural or man-made source or cause of harm or difficulty”

*likelihood*: “chance of something happening, whether defined, measured or estimated objectively or subjectively, or in terms of general descriptors (such as rare, unlikely, likely, almost certain), frequencies, or probabilities”

*risk*: “potential for an unwanted outcome resulting from an incident, event, or occurrence, as determined by its likelihood and the associated consequences”

*risk analysis*: “systematic examination of the components and characteristics of risk”

*risk assessment*: “product or process which collects information and assigns values to risks for the purpose of informing priorities, developing, or comparing courses of action, and informing decision making”

*risk communication*: “exchange of information with the goal of improving risk understanding, affecting risk perception, and/or equipping people or groups to act appropriately in response to an identified risk”

*risk management*: “process of identifying, analyzing, and communicating risk and accepting, avoiding, transferring or controlling it to an acceptable level at an acceptable cost”



*risk mitigation*: “actions taken that can potentially limit (but not usually eliminate) the harm that occurs when a risk is realized”

*risk perception*: “subjective judgment about the characteristics and/or severity of risk”

*threat*: “any situation or circumstances that has the potential to create or increase risk”

(OPSS 2021; DHS 2010.)

## **2. Literature review on risk communication**

The following literature review aims to give an overview of risk communication, its evolution and importance as well as challenges. The chapter sets a basis for the discussion and recommendations in chapter 5.

This thesis examines risk communication from the viewpoint of Finnish safety authorities, who often are responsible for communicating the risks of their specific field of operation. Therefore, before entering risk communication literature, it is justified to look at the characteristics of public authorities' communications and some of their guidelines in chapter 2.1.

### **2.1. Features of public sector communications**

The public sector environment is very different from the corporate world. Public organizations e.g., governmental agencies are established to serve citizens. They have a certain role and duties in the society, mostly providing national and economic stability through e.g., taxation, welfare, and safety. Their products and services are dictated to a large extent by legislation. Public communication operates in a multilayered and organizationally diverse environment, by many institutions at a national, regional, and local levels. (Luoma-aho 2007, 125, 127; Canel & Sanders 2013, 3.) Communicators of public sector are often on the front lines of societal and global challenges and crises. Public sector organizations and their decision-making also face plentiful media attention and scrutiny. (Liu & Horsley 2007, 379.)

In Finland, central government communication is guided by various regulations, instructions, and recommendations, many of which are listed e.g., in the Central Government Communications Guidelines by Prime Minister's Office. (2016, 14.) For risk communication, there is not a single, specific governmental guideline but several viewpoints from other documents can very well be applied to risk communications as well.

Public authorities' communications should serve the citizens and their fundamental rights such as freedom of speech, equality, and participation. For example, the Act on the Openness of Government Activities requires that citizens are informed of public decisions and their preparation. Via transparency, openness and dissemination of information public organizations ensure that citizens and other stakeholders can form an informed opinion about governmental activities and to protect their interests and rights. This way, governmental communication supports the functioning of democracy as well as the development of the society as a whole. Values that guide government communication and that should be considered in all communication activities, are transparency,

trustworthiness, fairness, comprehensibility, interactivity, and service-mindedness. (Prime Minister's Office, 2016, 6.)

Guidelines for Communications in Incidents and Emergencies (2013) touches also on the theme of risk management and communications. The Guidelines states that in communications with citizens, it is crucial to provide uniform information, decrease uncertainty and maintain confidence in the authorities' expertise and activities. Citizens may feel threatened by unfamiliar risks and dangers even when their probability might be very low. Providing clear, open ja easily understandable information helps to give dimensions to the threat. Other key principles of communication in preparedness and emergency conditions relate to pro-activeness, openness, consistency, speed, comprehensibility, equality, and interaction. (Prime Minister's Office, 2013, 14, 25.)

When communicating with citizens, it is important to use a variety of communications means and tools to reach all the parties concerned as well as enable participation. The dissemination of information must also be guaranteed to those who do not have access to or do not use electronic channels such as the internet or social media. Essential material and information must be available in the national languages of Finland – Finnish and Swedish. (Prime Minister's Office, 2013, 26.)

The information exchange and dialogue between governments and citizens are essential parts of democratic governance and better policymaking. However, the OECD report on Public Communication (2020) shows that many public authorities neither communicate openly and effectively enough nor involve citizens in the discussions. This is a missed opportunity, not only for successful communication but for building mutual trust. Indeed, many societies are nowadays experiencing a crisis of confidence. This lack of trust towards public organizations and authorities is a challenge for democracy and for the institutions that try to maintain it. (OECD 2020, 4.)

For improvement, OECD Report (2020) identifies some key principles for effective public communication:

1. Public communication needs adequate mandates to carry out appropriate and strategic communication in line with policy objectives and open government principles.
2. Public communication needs to have the capacity and skills for success and to be adequately resourced in terms of human and financial resources.
3. Public communication must be based on knowledge, evidence, and measurable objectives, as well as on information about the behavior, perceptions, and preferences of the audiences.
4. Digital technologies and information should be used ethically. The use of new technologies should aim at inclusiveness and engagement.
5. Both preventive and reactive communication should be reinforced to prevent the spread of mis- and disinformation and harmful content. (OECD 2020, 6.)

Concerning risk communication, there is an understanding that public organizations and authorities play an essential role in proactively informing stakeholders, especially vulnerable groups, about risks and providing recommendations for appropriate risk-minimizing behavior. (Giroux, Hagmann & Dunn, 2009, 6.) To be successful in risk communications, public sector needs to recognize the various social, cultural and psychological constructs that shape public attitudes and opinions to risk. Only by building a bridge between expert and public perceptions of risk, can public trust and confidence in public institutions be developed. (Smith & McCloskey 1998, 44, 50.)

## 2.2. Defining risk communications

Before being able to define risk communication, one needs to explain what is meant by a risk. A risk is a possibility of an unpleasant event or issue that may occur with a greater or lesser probability; the “*probability of undesired effects*” (Vos 2017, 23; Ferrante 2010, 38). Risk is not a synonym for hazard, which means anything that can cause harm. Risk is the likelihood of that hazard causing harm. (Perko 2022.) Ideally, known risks can be prepared for and managed before they evolve into crises. Some risks are interrelated, meaning that reducing one risk may increase another. (Vos 217, 9, 10.)

Risk communication, along with risk assessment and risk management, is a component of a larger framework of risk analysis. Risk analysis represents a structured decision-making process with these three distinct but closely connected elements. Successful risk communication is a prerequisite for effective risk management and risk assessment. (WHO 2006, 20, 65.)

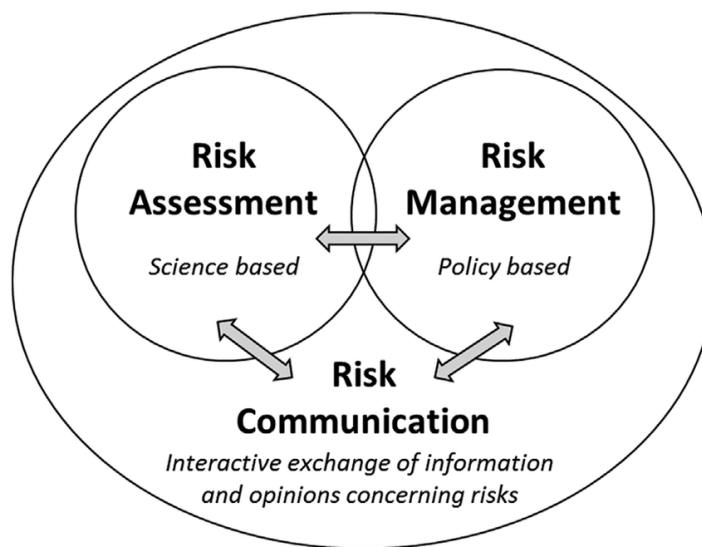


Figure 1: The risk analysis framework with the elements risk assessment, risk management and risk communication (adapted from WHO & FAO 2006, 6)

Risk communication is considered as an enabler of risk awareness and crisis preparedness. In short, risk communication is the exchange of views and information about a risk among those that have a stake in it. Those with interests in activities that cause risks and those who bear the consequences are often different people. Communication can clarify the perceptions of different actors and support joint decision-making processes. Thus, risk communication is not only the transmission of information but a dialogue, a mutual exchange of views between e.g., authorities, decision makers and citizens. The focus is on facilitating risk awareness, helping people to make informed decisions as well as reducing the risk and mitigating its effects. (VOS 2017, 10, 24; Perko 2022, Lahtinen et al. 2010, 58.)

Palenchar and Heath (2002) describe risk as a social construction; the understanding of risk information is shaped through interaction with messages, opinions, experiences, and interpretations of the characteristics of risk. Risk communication therefore deals not only with actual risks and the information upon them, but the *perception* people have on risks, and the content of their thoughts and comments. Those communicating the risk, need to understand the actual risk involved, but more importantly people's perceptions of the risks, and the variables that affect those perceptions. (Palenchar & Heath, 2002, 129.)

Risk communications can have two quite different purposes: *alerting* people and *reassuring* them. This means that the aim usually is either convincing people to be more concerned about a risk they underestimate or to be less concerned about risks they overestimate. Properly applied, risk communication can help people with differing perspectives and levels of expertise to share a common understanding of the level of risk. Sometimes, the intent is to increase the level of concern and to call for action. Examples of this could be smoking or sun's UV-radiation; people are persuaded to take protective action and to change their behavior. At other times, risk communication is used with the opposite intention, decreasing the perception of risk, for example when it comes to topics such as vaccines or the use of nuclear power. Sometimes, risk communication is used for helping people to readjust oneself to something that has already happened, such as exposure to harmful substances, that may affect a persons' health later. (Centers for Disease Control and Prevention, 2014, 7; Beecher et al. 2005, 125.)

Other categorizations of risk communication functions also exist. Renn (2010) summarizes the objectives of risk communication as four general functions. The *enlightenment function* fosters understanding of risks among different stakeholders, considering the dominant risk perception patterns of the target audiences. *Behavioral change function* supports people in changing their daily behavior or habits with the purpose to reduce their risks to life and personal health. *Trustbuilding function* aims to promote trust and credibility towards those institutions that handle or regulate risks. Finally,

the *participative function* provides procedures for dialogue and alternative conflict resolution methods, as well as effective and democratic planning for risk management and regulation. (Renn, 2010, 88.)

One might ask, what makes risk communications distinctive from any other form of strategic communication. According to Raupp (2015) risk communication has two special features: 1) risk communication typically deals with uncertainty and 2) it is an exceptionally disputed and sensitive form of communication. Risks include an element of uncertainty; they might or might not be realized. Communicating this uncertainty is a challenge. Risk communications practitioners must also deal with conflicting perceptions of risks as well as emotions that risks might generate. Many groups and individuals want to be included in the discussion and decision making related to risks that concern them. Understanding what shapes people's risk perception is crucial to developing communication that is truly impactful. These communicative challenges stress the importance of a proper understanding of strategy in risk communication. (Raupp 2015, 524.)

Finally, it is important to understand, what risk communication should not be. According to WHO (2006)

- risk communication is not public education. The public may in fact already have a great deal of information; effective communication is a two-way exchange of information, not a one-way transfer. In a risk analysis context, gathering information is often as important as conveying it.
- even when a risk is justifiable with science and data, risk communication should not ignore or belittle people's emotions and fears. Telling people, a risk is small, and people are safe will not necessarily reassure them. In fact, if people perceive that their concerns are being dismissed too lightly, they may trust those in authority less and worry more. The most effective response to perceived public fears is to engage in dialogue, to listen and respond to their concerns. Honest discussion of what scientific data about the risk show (including uncertainties) will help put risk in perspective. (WHO 2006, 74.)

### **2.2.1. Risk and crisis communications – connected but different**

In worst cases, risks may develop into crises. "A crisis is a risk manifested" (Heath & O'Hair, 2010, 3) is probably one the most popular citations explaining the two concepts' connection. Although risks and crises are interconnected, there is a slight difference between the two and their communication. Risk communication is a set of practices and relationships more generic than crisis communication, which presumes an emergency (Glik 2007, 34). Ferrante (2010) describes risk

communication as “an ongoing process that helps to define a problem and solicit involvement and action before an emergency occurs” (Ferrante 2010, 38).

Risk communication informs and alerts the public about an unfolding or potentially hazardous event and about how the hazard could be controlled or mitigated. The communication usually takes place in the pre-crisis phase. Since risks are always future potentials, their exact realization or individual effects cannot be clearly predicted. Consequently, risk communication is much vaguer and more difficult to argue and justify than crisis communication. (Giroux, Hagmann & Dunn, 2009, 6.)

Whereas risk communication is a preventive measure for something that might happen, crisis communication takes place when an actual emergency or an incident has taken place. It focuses on managing and mitigating an ongoing crisis situation as well as instructing people on the actions needed. Crisis communication also aims at maintaining and enhancing organizational reputation which might have been affected by the crisis. (Miller et al. 2019, 2.)

However, risks can also occur *during* crises. This combination is usually defined as emergency risk communication, integrating risk and crisis communication elements into a process that extends over various crisis stages. In crisis situations, the general task of risk communication is to give the public an interpretation about the immediate risks at hand as well as information on how to cope and manage them. (Reynolds & Seeger 2005, 44.)

### **2.2.2. Risk perceptions – challenge for effective risk communication**

Because people's behavior is primarily driven by perceptions and emotions rather than facts, the perception of risk plays an important role in the success of risk communication (Perko 2012, 14). Risk perception is a subjective assessment of the likelihood of a particular type of risk and the level of concern of the consequences of that risk. A risk means different things to different individuals. Perception of risk, however, goes beyond the individual evaluation; it is a social and cultural construct reflecting values, symbols, history, and ideology of a society. (Sjöberg et al. 2004, 8.)

Reynolds (2011) raises a relevant question for all who are trying to convey risk information convincingly to their audience: “*Do you want to tell people the facts or do you want to be heard?*” Often, subject matter experts believe that communicating facts is enough to enable people to assess the risk and react sensibly to it. It is true that people want and expect to receive accurate, clear and honest information about risks. Awareness of a particular risk may sometimes be related to its acceptability, but this may be because those who accept a particular risk have more information about it. However, it has been found that mere knowledge of a risk does not reduce people's risk

assessment or other risk-related behavior. Messages created in the belief that people are linear thinkers and make logical decisions can be ineffective because emotions come first. (Reynolds 2011, 207; Leikas 2005, 30.)

People also tend to ignore the kind of knowledge that are against their current beliefs. Even new evidence is credible and informative only if they suit the person's previous beliefs. Opposing information is held unreliable, misleading, or as irrelevant. The public may also be hostile towards risk communication efforts if their concerns are not taken into account. It is therefore particularly important in risk communication to listen to the public and to address the issues that concern them, even if these issues seem insignificant to the experts. (Hautakangas 1997, 31, 32.)

So, what does all this mean for effective risk communication? Simply that risk perceptions should be taken seriously. The first step is to understand that the public's perception of risk is different from that of experts, and to recognize that the public's multi-dimensional view of risk is in many respects legitimate. The public should not be expected to abandon their perceptions in favour of expert judgements. However, there are situations where experts do indeed have important information that could help the public in decision-making and risk reduction. (Gurian 2008, 4.)

For risk information to affect its target group, understanding two different ways of information processing is important. The *cognitive route* relies on analytical processing of information. In contrast, the *affective route* depends on emotional bonds to the information at hand. Although the cognitive route is considered more accurate than the affective approach, the affective response can be used to cope with many risk situations where cognitive resources are limited, or the situation requires a quick response. For effective risk messaging this means that both targeting rational thinking with "hard data" and facts (knowing the risk) as well as aiming at emotions with narratives (feeling the risk) should be utilized. (Lemal & Merrick 2013, 27-28, 31; Gurian 2008, 3.)

Leiss states the way in which risk assessment experts present risk information and the way in which most members of the public think about risk issues will continue to be apart; the differences in risk perceptions (also between lay people) are fundamental and permanent. Good risk communication practice seeks to address those divisions, and to facilitate an informed understanding of the risks and benefits associated with the risk. (Leiss 2004, 402.)

All in all, while there are no universal guidelines for effective risk communication, the best chances of success are in a situation where the public perspective is respected, and the public is constantly engaged. This collaboration should seek both to educate the public and improve their knowledge of the issue, and to learn from the public about their concerns and values. Perceptions of risk can be explored and analyzed for example with interviews, group discussions and surveys. (Hautakangas



1997, 29; Gurian 2008, 6.)

### **2.2.3. Why is risk communication important?**

As defined in chapter 2.2., risk communication, when successful, enables people and communities at risk to make informed decisions to mitigate the effects of a threat and take protective and preventive measures. This is also where the importance of risk communication lies, in fulfilling citizens' right to know about risks and providing them opportunities to take action. Failure to communicate effectively about risk can undermine preparedness efforts, aggravate disasters, and complicate the recovery process. Properly implemented, risk communication can significantly increase community resilience, mitigate the costs of disasters and save lives. (Janoske et al. 2012, 1; WHO 2021,8.)

According to Renn (2010) risk communication is a necessary and demanded activity which is partly prescribed by laws and regulations and partly required by public pressure and stakeholder demand. There are expectations towards governmental agencies as well as companies to provide information and guidelines for their stakeholders, whether they are consumers, workers, or bystanders. Renn calls this a new industrial and political paradigm of openness and "right to know". By exchanging information and ideas, policymakers, experts, and the public can work together to develop effective risk management strategies that meet the needs of all involved. (Renn 2010, 2.)

Effective risk communication can help build trust between experts and the public. By providing clear and transparent information about risks, experts can demonstrate their commitment to public safety and build credibility with different audiences. Risk communication that both informs and takes the public's opinions and demands into account follows the principles of democratic decision-making. A functioning democracy requires that citizens receive enough relevant information about matters that concern them so that they can participate in the decision-making. Such a view of democracy places the duty of information sharing on state institutions. (Hautakangas 1997, 28.)

Why is risk communication often underutilized, given its importance? Risk communication can be complex, politically sensitive and resource-intensive, which can create barriers to its effective use. Risk communication can also be difficult to implement well. It requires specialised skills and training. It also requires extensive planning, strategic thinking and dedication of resources. However, the high added value of communication in risk analysis and management justifies the efforts to ensure that it is an effective part of the risk process. (WHO & FAO 2006, 66.)

### 2.3. Evolution of risk communication

The term of risk communication appeared for the first time in literature in the early 1980s, having roots in the environmental arena. The need for risk discussion arose initially out of controversies over environmental issues such as chemical and nuclear industry and residents living nearby the plants. Key triggers for increased demand for public risk information were e.g., the tragic chemical accident in Bhopal, India in December 1984 as well as the Chernobyl nuclear disaster in 1986 in Ukrainian Soviet Socialist Republic.

Initiatives were made to narrow the gap between citizen and expert knowledge via education and disclosing of scientific results (= information deficit model, transfer of information from experts to non-experts). At this point experts realized that risk-related data must be shared also with media representatives, as media can act as a bridge between the public and experts. However, risk communication was implemented via traditional one-way communication technologies such as press releases, fact sheets, open days and media events, delivering a low level of public participation. (Kasza et al. 2022, 2; Chess 2001, 182.)

The idea in the 1980s and early 1990s was that understanding the public's perception of risk would enable researchers to develop risk communication models and experiments, and to design more effective risk communication that professionals could use in their day-to-day work. (Gurabardhi 2004, 325.) These early years were spent by searching for the message that would best suit the goal of risk communication as seen in that time: to align the risk perception of the public with that of the risk experts. Thus, risk communication research focused on measuring the effectiveness of risk messages. Several studies have investigated the design, formulation and presentation of risk messages and the role and characteristics of the information giver to promote public's understanding on the risk. In fact, this type of research of communication effects has formed a large part of risk communication research; the approach is called instrumental or technical. (Raupp 2015, 522.)

In 1989 the influential report "Improving Risk Communications" by US National Research Council Committee broadly discussed the interdisciplinary bases of risk perception, risk communication, and risk. The report took a new, broader perspective to risk communications, emphasizing dialogue and interaction between different actors instead of the sender's viewpoint of "getting the message across." The report described risk communications "*as an interactive process of exchange of information and opinion among individuals, groups, and institutions.*" It criticized the traditional one-way communication style and the image of experts enlightening or persuading an uninformed and passive public as incomplete and ineffective. (Palencar & Heath, 2002, 129; National Research Council 1989, 20.)

Scholars and professionals began to acknowledge that risk communication must accomplish more than merely conveying experts' knowledge to the public. There was now a growing understanding that messages and messengers themselves are not the only determinant of success in risk communication. The importance of considering the audience's risk perceptions, beliefs, and expectations and how these might interact with the message began to strengthen. This participatory approach towards risk communication is described as democratic or dialogic. (Rabinovich and Morton, 2012, 993; Lemal & Merrick 2013, 18; Raupp 2015, 522.)

Since the 1980's, risk communication and management climate has changed tremendously, mainly because of the decreasing trust of people towards organizations, authorities, and policy makers. The internet, for example, has led to people finding their own answers, and not taking the ones from experts as guaranteed. Several crises and scandals during the 1990's and early 2000s' (e.g. Belgian dioxin crisis, Mad Cow Disease, Anthrax attack and SARS) and their media attention amplified the erosion of public trust even further. (Löfstedt 2004, 37.) As a result, many governments and public institutions have responded with a rapid development of practical risk communication plans and guidelines, the vast majority locating risk communication as an essential component of the larger processes of risk analysis and management. (Infanti et al. 2013, 6.)

Risk communication now has a history of over four decades. As our understanding of risks and people's reactions to risk in modern society continues to evolve, the field of risk communication continues to evolve as well. Themes such as trust, risk perception, emotions and public engagement remain relevant to risk communication development. Moving from one-directional information flow towards interactivity and dialogue, understanding people's risk perceptions and behaviour as well as recognizing the opportunities of new communications technologies are inevitable for modern risk communication. This requires a profound change also in the mind-sets, know-how and working methods of those organizations and professionals communicating risks. (Kasza et al. 2022, 2.)

#### **2.4. Risk communication research**

Risk communications is not an independent field of study. It brings together aspects from many scientific areas, such as economics, sociology, psychology, and communication research. Commonly, it can be seen both as a specialized area of organizational communication (related to crisis communications) as well as a component of risk analysis process (described earlier in chapter 2.2.). The variety of perspectives has made risk communication a truly multidisciplinary, even a complex, domain, that has also been criticized of having little cohesiveness and integration in its research. (WHO 2021, 9; Reynolds 2011, 207.)

For decades, risk communication researchers have been trying to provide information on how risk communication can be most effectively implemented. These efforts have led to numerous scientific discoveries, but there is no single theory or model that covers all aspects of the impact of risk communication. However, it can be said that risk communication research has largely focused on public perceptions of risk and overcoming the psychological, sociological, and cultural factors that create misconceptions and misunderstandings about risk. (Covello 2011, 511; Lemal & Merrick 2013, 19.)

Despite the diverse and multidisciplinary nature of risk communication research, there are few interconnected theoretical frameworks in the field, making it difficult to focus or exploit knowledge. According for example to Wardman (2008), is not always made altogether clear how different theories and practices of risk communication are connected. Furthermore, different communities with a common interest in risk communication typically seem to talk past one another. A common view and voice on the topic seem to be missing. Thus, there is a need for future research to aim for more theoretical integration. (Wardman 2008, 1620.)

However, there are risk communication frameworks that are still considered to build the foundation of the domain and that have been both used extensively as well as further developed throughout the years. Some of the models are introduced next. Overall, the theoretical frameworks introduced in this chapter (and others) can provide useful insights and guidance for developing effective risk communication strategies. In addition to the models presented below, there are studies emphasizing the importance of social and cultural factors to public acceptance of risk messages and assimilation of risk information, e.g., the model of social amplification of risk.

#### **2.4.1. Risk perception model**

Risk perception model (also called the outrage model) states that many factors affect how people perceive risks. In other words, risks are generally more or less worrisome, fearful, and acceptable according to certain characteristics. Levels of concern tend to be most intense when the risk is perceived for example as unfamiliar, involuntary, inequitable, not under one's personal control, and associated with dreaded adverse, irreversible outcomes. These risk characteristics have also been named "outrage factors," because they influence people's feelings regarding a real or potential hazard. (Beecher 2005,123; Reynolds 2010, 207; Covello 2001, 384.)

Covello (2011) has listed some of these outrage factors in more detail:

- The risk is under the control of others, especially those that are not trusted
- The risk is involuntary
- The risk is inescapable

- The risk is of human origin (vs. natural origin, which is more
- The risk is unfamiliar or exotic
- The risk is dreaded because it can cause injuries or death
- The risk is characterized by a great deal of uncertainty
- The risk is likely to cause injury or death to children, pregnant women, or other vulnerable populations. (Covello et al. 2011, 512; Covello et al. 2001, 385; Reynolds 2011, 210.)

These factors and the intense feelings they might generate, can increase the risk perception dramatically and lead to overestimation of the risk. On the other hand, well-known lifestyle diseases and “bad habits” are often underestimated, because they just do not feel risky; people think that they are in control of their own personal lifestyle choices such as smoking or eating unhealthily. The studies show that people are also unrealistically optimistic when assessing their own risk levels and likelihoods. That is why especially the risks concerning personal health (and the communications and campaigns about them) are often ignored or denied. (Lemal & Merrick 2013, 27; Berry 2004, 7.)

To plan and organize effective risk communication strategies, it is important to collect and evaluate empirical information about risk perception factors e.g., through surveys, focus groups, or interviews. Interaction and dialogue with the target group about areas of their concern are also necessary. (Covello et al. 2001, 384.)

#### **2.4.2. Trust determination model**

When people are concerned, stressed, or upset they want to know that you care before they care what you know. Trust determination theory states that only when trust and credibility is established will people rely on the risk information they receive from the source of information. Factors such as empathy, commitment, expertise, honesty, and openness, are noticed by stakeholders and help them to accept risk information. However, individual trust usually overrides organizational trust. Trust in the organization’s representatives, and therefore in the organization as a whole, can increase or decrease significantly depending on how the representatives manage to interact with others and present their expertise. (Covello et al. 2001, 386; Covello 2011, 514.)

Trust may suffer by communication that indicates

- disagreements among experts on the risk
- negligence of effective listening, dialogue, and public participation
- unwillingness to acknowledge risks
- unwillingness to share information in a timely manner, and

- irresponsibility or negligence in fulfilling risk management responsibilities. (Covello 2001, 386.)

### **2.4.3. Negative dominance model**

According to negative dominance theory, people pay much more attention to negative than positive information under stress. Negative thoughts, words and feelings dominate people's reactions as they become increasingly affected by worry and anxiety. For risk communication, this means that negative messages should be balanced by more positive or solution-oriented messages. According to negative dominance theory, messages containing negative words (e.g., no, not, never, nothing) and other negative connotations are more likely to be paid attention to and remembered for longer than positive messages. As a result, the use of unnecessary negative words in dialogue with stakeholders can be counterproductive. It can drown out positive or solution-oriented information. Risk communication is most effective when it focuses on what is being done, rather than emphasizing what is not being done. (Covello 2011, 513; Covello 2001, 386; Infanti 2013, 7.)

### **2.4.4. Mental noise model**

The mental noise model aims to understand how individuals process risk information in stressful situations. It finds that people often have great difficulty in processing information in high-stress situations. Stress limits their attentiveness and their ability to understand and remember risk messages effectively. When people feel that things important to them are under threat, they experience a range of emotions from anxiety to anger. The agitation and anxiety generated by these intense emotions cause mental noise, which in turn can impair a person's ability to engage in rational conversation.

According to the mental noise model, understanding the public's risk beliefs when they are in a state of high agitation helps risk communicators translate technical and scientific concepts into understandable messages. It is also important to ensure that risk communication materials are easy to understand and contain sufficient repetition and visualisation to reach the target audience. (Covello 2001, 385; Infanti 2013, 7.)

## **2.5. Summary**

As we have learned from the previous chapters of literature review, risk is an abstract and multi-dimensional concept. It is not at all straightforward how people perceive and understand risks and on what grounds they make their decisions concerning risks. Perception of risk includes personal

experience but is also determined by cultural background, values, location, and demographic characteristics. (Snel et al. 2019, 556.) As the public actively processes the information, it becomes socially constructed; as a result, the public understanding of a certain risk can be affected by social, cultural and psychological influences. (Lemal & Merrick, 2013, 18). However, it is important to recognize that risk perception is not always rational or based solely on objective information.

Risk communication is essential for ensuring that individuals and societies understand the risks they face and can make informed decisions about how to respond to them. As risk perceptions have a significant impact on the success of risk communication, they must be discussed and taken into account when planning and implementing communications activities and tailoring messages. The better the risk-related viewpoints of the affected people and communities are understood, the more successful it will be to address their needs and to affect their behaviour.

Risk communications as a research area is a truly multidisciplinary domain which combines aspects from many scientific fields, such as economics, sociology, psychology, and communication research. Maybe for that, it has been criticized of having little cohesiveness and integration in its research. Theories of risk communication, such as risk perception model or trust determination theory, have largely concentrated on understanding and resolving the psychological and sociological factors that create misperceptions and misunderstandings about risks.

Public organizations and authorities have an important role as risk communicators and risk mitigators on a societal level. Only by building a bridge between expert and public perceptions of risk, can public trust and confidence in public institutions be developed.

Risk communication now has a history of over four decades. The modern society is evermore a complex risk environment, e.g., there are new kinds of risks and many of sources of information to be monitored. Themes such as trust, risk perception, emotions and public engagement remain relevant to risk communication development.

### **3. Research approach and methodology**

The chapter introduces case study as a research method as well as survey as a method of data collection. The design, implementation, and target group of the survey for this study is also presented.

#### **3.1. Case study approach**

This thesis represents a case study, as it aims to find out the views of a limited group, i.e., communicators of Finnish safety authorities, on a certain topic, risk communication. With the help of the information obtained, the study aims to find out the current state and the development needs of the studied phenomenon.

A case study traditionally involves observing and analyzing an issue or situation, not actually solving it. Case study provides in-depth and detailed knowledge and understanding about a limited and specific topic in actual, realistic operational environment. The aim is often at gaining information about the current situation of the topic as well as producing development suggestions. (Ojasalo, Moilanen & Ritalahti 2022.)

Case studies can deal with a variety of topics from places, people, and organizations to more abstract phenomena and concepts, as well as the relationships of things. There might be just one target case to be studied or several, that can be compared with each other. The most important thing is that the case study researcher knows what she/he wants to describe, explain or understand. Previous studies and theories play an important role. Thus, it is typical for a case study and its research problem to mold and sharpen during the process and through what is theoretically known about the topic. (Vilkka, Saarela & Eskola 2018, 193, 194.)

For case studies, both qualitative and quantitative research methods, or their combination, can be used. This thesis utilizes a questionnaire which allows collecting both numeral as well as qualitative data.

#### **3.2. Survey as a data collection method**

Data for this study was collected via an electronic survey designed for communications professionals working for the chosen Finnish safety authorities. Survey is one of the most used and traditional research methods for collecting data from a group of individuals. Basically, this happens with a set of questions e.g., via a paper form or nowadays mostly online questionnaires, by telephone or face-to-face interviews.



A survey, whether a questionnaire or interview, needs to be planned carefully, both in terms of structure, question formulation and language. When using a questionnaire, the success of the entire study depends to the greatest extent on the form. It is crucial that the right questions are asked in a statistically meaningful way. The difference to interviews is that the questionnaire must work on its own, without the help of the interviewer. When the respondent fills in the form, it is too late to make changes. (Vehkalahti, 2019, 11, 20.)

According to Moilanen et al. (2022) there are certain requirements for effective questionnaires, for example,

- clarity and accuracy of questions, not leaving space for ambiguity
- short questions, that deal with one topic at a time
- paying attention to the number and order of the questions
- plain and understandable language
- keeping the response time reasonable, max. 15-20 minutes
- including cover letter and instructions. (Ojasalo, Moilanen & Ritalahti 2022.)

Questionnaires have their advantages and disadvantages as a research method, some of them listed in the table below.

Table 1: Advantages and disadvantages of questionnaires (Ojasalo, Moilanen & Ritalahti 2022 and Vehkalahti 2019)

<b>Advantages of questionnaires</b>	<b>Disadvantages of questionnaires</b>
<ul style="list-style-type: none"> <li>• The researcher does not influence the responses with her/his presence or appearance</li> <li>• The opportunity to ask plenty of questions, especially with multiple</li> <li>• Guarantees anonymity better than an interview</li> <li>• The survey material is ready in writing, making it easier to process the answers</li> <li>• Easier to conduct an interview, independent of time and place</li> <li>• Surveys can be applied to many subjects and phenomena.</li> </ul>	<ol style="list-style-type: none"> <li>1. Data might be seen as superficial</li> <li>2. Respondents' motivation and attitude to the survey; how serious the respondents are - do they answer carefully and honestly</li> <li>3. Non-responsiveness can become high; preparing a repeat survey takes time</li> <li>4. Successful choice of answer options uncertain - misunderstanding cannot be controlled</li> <li>5. How well do the respondents know the context, is the context conveyed</li> <li>6. Difficult to know how familiar the respondents are of the topic and the context</li> <li>7. Creating a good questionnaire takes time.</li> </ol>

### **3.3. Designing and implementing the survey**

For this thesis, designing the survey started simultaneously with the literature review, to get input and ideas from the theoretical background. The first version of the form was drafted in November 2022 after which it was reviewed by the thesis instructor as well as the researcher's superior, who has a long history of working for Finnish safety authorities and who is familiar with the concept and implementation of risk communication. The questionnaire was modified according to their feedback and finally sent to the recipients in late January 2023. The questionnaire was published, and answers collected anonymously in Finnish via Webropol survey tool. It was open for the respondents between 31.1.2023-20.2.2023.

A link to the Webropol survey was delivered via e-mail to the communications professionals of those Finnish state authorities and agencies that look after citizens' well-being and safety in different ways and who are expected to perform risk communications in their operational field. Both the e-mail message and the questionnaire itself included a cover letter, which briefly introduced the researcher and her studies, the aim of the study as well as the details of using the data in confidence.

The questionnaire included altogether 19 questions, the first being the background information. From the actual questions, thirteen were multiple choice questions and five were open questions. The questions were divided under four thematic headlines: (1) the current status of risk communication in the respondents' organizations, (2) objectives of risk communication, (3) implementing risk communication in the organization and (4) developing risk communication.

The questionnaire, translated to English by the author, can be found as the Attachment 1.

### **3.4. The target group of the survey**

The questionnaire was sent by e-mail to the general addresses of the communication units and/or communication managers of 15 different security authorities, with a request to distribute the questionnaire to as many communication professionals in the organization as possible. The email addresses of the contacts were collected from the organizations' websites or were already known through previous cooperation. The researcher does not have a precise information on the total number of communication professionals working in these 15 different organizations. However, the estimated number of communication staff per safety authority is between 5 and 8 persons. With this estimate, a maximum of 120 responses (15 x 8) could have been obtained for this study.

The dissemination of the survey to all communication professionals in the organisation was ultimately the responsibility of the organisation's communication department / communication

manager. After the first contact on 31<sup>st</sup> January, a reminder was sent on 13<sup>th</sup> February about the survey and an extended deadline of five days. In the end, by the deadline, twenty (20) communications professionals from eight (8) national safety authorities took part in the study. From the presumed maximum of 120 the number of responses (20) is 16,67 %.

The sample size of the survey is recognized as small, but as the target group, the communication professionals of the safety authorities, was delimited, the number of respondents and the representation of the different organizations can be said to be sufficient. Moreover, the sample size should always depend on the purpose and objective of the survey (Puusa & Juuti 2020). The respondents in this study represent a group that is relevant when looking at risk communication by public authorities. Each response is important and worthy of attention. With interviews, the number of respondents would have been smaller. Interviews could have provided additional information, but the questionnaire was considered sufficient, so no other means of data collection was used. Time constraints also meant that interviews were not conducted to complement the survey.

### **3.5. Data analysis method and process**

In this study, both quantitative analysis and qualitative content analysis are used to analyse the results of the survey. The combination of quantitative and qualitative methods is typical for case studies.

In questionnaires, multiple choice and statement type questions are usually reported numerically. Qualitative data can be collected from open-ended responses. The open-ended answers complement and refine the perceptions obtained from the numerical answers. One can also get completely new information, development ideas and perspectives from the open answers. (Vehkalahti 2019, 13, 25.)

In this thesis, the quantitative data of the questionnaire is reported with descriptive statistics. The method is used to calculate, describe, and summarize the basic features of the collected research data in a logical, meaningful, and efficient way. The data is reported numerically via text, tables, or graphics.

The open-ended responses of the questionnaire are analyzed qualitatively, using thematic content analysis. In content analysis, the researcher strives to create a meaningful and informative whole from the fragmented data, from which conclusions can be drawn. Hence, content analysis structures the research material for interpretation and inference. The practical implementation can proceed, for example, as follows:

- technical processing of the data (e.g., transcription or other compilation, usually in text form)
- familiarisation with the data and building up an overall picture
- reduction, structuring and reflection on the material
- categorisation / thematisation of the material
- interpretation.

(Puusa 2020; Günther, Hasanen & Juhila 2023.)

According to Günther et al., the analysis of qualitative data is guided by experimentation and curiosity about what the data contains and what interpretations can be made from it. The material itself never reveals anything, but the researcher's task is to structure and interpret what is central to the research problem (Günther, Hasanen & Juhila 2023.)

In this study, the first step was to find common factors and issues that appear directly and indirectly in the open-ended responses, to derive groupings from them and to analyse these thematic groupings. Connections between the findings and the literature have also been sought.

The survey data was generated directly into the survey system, Webropol survey software. The data was easily downloadable from the software as an excel spreadsheet or as a Word document. The method of analysis was to carefully study the responses in the Word document and to write down recurring topics, keywords and themes, from which the most relevant issues for the implementation and development of risk communication stood out. Numerical data and respondents' preferences in the multiple-choice questions supported the thematic analysis. The analysis process is briefly described below.

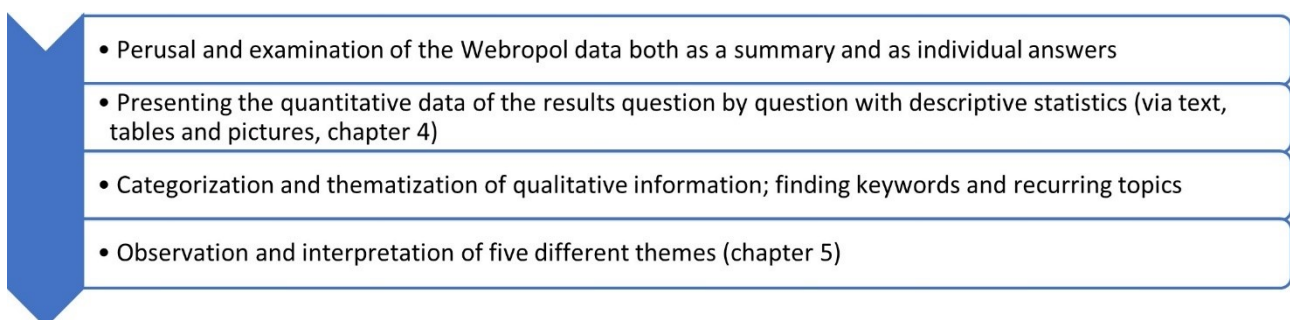


Figure 2: The data analysis process

## 4. Survey results

This chapter presents the results and features of the acquired data, both numerically and by taking quotations from the open answers. The results are reported in the order of the questionnaire, including background information. The questionnaire included altogether 19 questions under four thematic sections, which were 1) the current status of risk communication in the respondents' organizations, 2) objectives of risk communication, 3) implementing risk communication and 4) developing risk communication.

The questionnaire was in Finnish, so the content has been translated to English for reporting purposes. The translations are as accurate as possible. The results and development proposals will be analyzed and reflected in more detail in chapter 5.

### 4.1. Background information

The survey was answered anonymously and only with little background information that was considered necessary for the context. The purpose of the survey was to collect viewpoints on risk communication, not to evaluate or cross assess the respondents' demographic details.

As background information, the survey respondents were asked to identify their organization, their work experience on public authorities' communications by years as well as their familiarity with the concept of risk communication. This way, I wanted to see, whether the concept itself was clear and whether the work experience affected the familiarity of the concept. The work experience of the respondents varied from 2 years to 30 years. Four (4) respondents of the 20 told that they were not familiar with the concept of risk communication. Three of these respondents had 2-3 years of work experience in public authorities' communications. However, others that also had the same amount of work experience (2-3 years), knew the concept. Thus, conclusion about the correlation between the working years and the familiarity with the concept, could not be determined.

Twenty (20) respondents from eight (8) organizations answered the survey. The respondents' organizations represented policy areas of food, chemicals, medicines, environmental protection, health and welfare and imported goods.

Five agencies fall under the Ministry of Social Affairs and Health, one agency under Ministry of Agriculture and Forestry, one under Ministry of Economic Affairs and one under Employment Ministry of Finance. The selected agencies will not be presented in more detail to retain confidentiality and the anonymity of the respondents. Respondents per organization divided as in the table below.

Table 2: Number of respondents per organization and their administrative branch.

Organization	Administrative branch / Ministry	Respondents
Safety authority 1	Ministry of Social Affairs and Health	5 respondents
Safety authority 2	Ministry of Agriculture and Forestry	4 respondents
Safety authority 3	Ministry of Economic Affairs and Employment	3 respondents
Safety authority 4	Ministry of Finance	2 respondents
Safety authority 5	Ministry of Social Affairs and Health	2 respondents
Safety authority 6	Ministry of Social Affairs and Health	2 respondents
Safety authority 7	Ministry of Social Affairs and Health	1 respondent
Safety authority 8	Ministry of Social Affairs and Health	1 respondent

#### 4.2. The current status of risk communication in the respondents' organizations

Questions 2-9 of the survey aimed at detecting the status and importance of risk communications in the respondent's organization. 19 of 20 respondents (95 %) stated that their organization carries out risk communications for external target groups (citizens or other external public affected by the risk). One respondent was not able to say whether the organization does this.

However, only half (10) of the respondents had a clear understanding of what risk communication means in their organization, including e.g., knowing the risk communication themes, goals and target groups. 14 out of 20 respondents (70 %) stated that risk communication is included in their organization's communication strategy or in other guidelines or plans guiding the organization's communication.

The question "How important do you consider risk communication to be in your organization?" showed that almost every respondent considered risk communications as very important (n=12) or fairly important (n=7). One respondent was not able to tell her/his consideration. This question was followed by an additional open question, in which the respondents were asked to briefly justify their previous answer. The aim was to know more precisely, why they did or did not consider risk communication as an important task in their organization. 18 out of the 20 respondents answered to this open question. Many of the answers noted that risk communication is an integral part of safety authorities' role and activities; it can be visible e.g., in the mission or in strategy of the organization.

One respondent stated that by implementing risk communication, the organization realizes the purpose of its existence. The answers included for example the following comments.

Topics related to risk communication are not at the core of our strategy and therefore not very important (for our organization).

Risk communication is part of our mission and vision.

Our organization's mission is to investigate health-related matters and interpret the results, inform different target groups about the risks and, above all, help people make decisions about their own health and life based on the right information.

Risk communication is at the core of the organization's strategy. Our goal is to get our customers to act more responsibly and knowing the risks of their activities, as the authority cannot be everywhere monitoring and eliminating risks. Communication and advice therefore play a big role in increasing customers' risk awareness.

Social media and the flood of information from various sources sometimes make people's heads spin. It is important that experts help with interpretation (of information).

The role of the authorities includes giving up-to-date, fact-based, reassuring information when there is a reason for it. In my opinion, the authorities must reliably and equitably make information available to everyone - especially in situations where people or the environment are at risk. In risk communication, the role of a reliable authority is emphasized.

Question number 7 sought to understand the way the respondents' organizations implement risk communication, i.e., when and/ or how risk communications is implemented. The question was: *Which of the following best describes your organization's way of implementing risk communication (you can choose more than one option)?* The following table shows the options in the order of their popularity. The most chosen option was the proposition that risk communication in the organization is part of the daily communications and therefore a continuous process. Top three choices of the respondents also included propositions that risk communication is proactive and/ or that risk communication is implemented when a certain risk seems to have increased.

Table 3: Factors best describing the implementation of risk communication in the respondent's organization.

Which of the following best describes your organization's way of implementing risk communication (you can choose more than one option)?	% (preference of choice)	Number of respondents
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Risk communication is continuous, part of the daily communication	80 %	n = 16
Risk communication is carried out proactively	60 %	n = 12
Risk communication is carried out when a risk seems to have increased	60 %	n = 12
Risk communication is carried out when the target audience's interest in the matter increases	55 %	n = 11
Risk communication is carried out as campaigns	45 %	n = 9
I am unable to say how our organization implements risk communication	5 %	n = 1
We don't exactly implement risk communication	0	0

Question number 8 was an open question. The respondents were asked to describe the current status and realization of risk communication in their organization, according to their own point of view. 15 out of the 20 respondents answered this question. According to the answers, for some organizations, risk communications is “business as usual”, a part of everyday communications. A few respondents stated that the implementation of risk communication takes place case-by-case and is more subject-specific. This type of approach might end up e.g., using specifically targeted campaigns. Here are some examples of the open comments.

(Risk communication is) Part of daily work and works as such. The goals could be sharpened, and the metrics are missing.

It (= risk communication) is situation-dependent, i.e., it is implemented both as a part of long-term, strategic communication and on a case-by-case basis when there is a special need. We are well aware of its importance, and it is implemented quite well.

We could do more, e.g., campaigns and social media communication.

For us, I see risk communication as campaigns that are oriented towards defined target groups, that increase awareness and aim to influence behaviors to reduce risk. Campaigning is done on those themes that involve the greatest risks. (Risk communication is) Part of daily communication too, even if I haven't really thought about it as such. However, risk communication in our organization needs to be defined and examined; who we want to influence and by what means. Metrics are also needed in order to have an idea of the effectiveness of risk communication.

I don't necessarily know how to separate risk communication from other communication, because they are really closely connected. The majority of e.g., our media communication can be counted as risk communication.



Risk communication and its implementation is quite subject-specific for us, so risk communication is not necessarily put into communication plans, goals, etc. for the entire organization, but separately for different topics: what issues do we want to bring out and emphasize in the communication of topic X.

Everyone should have a broader general understanding of the matter, even if it is not part of their job description.

Last question of the questionnaire's first section aimed at finding out, how well-organized and planned risk communication is in the particular organization. The respondents were asked to choose whether or not (yes/no -option) certain factors have been defined for the organization's risk communications, including objectives, target groups, core messages, channels, responsibilities, metrics and financial resources. The answers showed that most commonly the objectives, target groups and channels have been defined for risk communications, whereas metrics and financial resources seem to be lacking.

### 4.3. Objectives of risk communication

Questions 10-12 of the survey strived to find out the objectives and focus of risk communication in the respondent's organization.

According to the responses, the primary aims for risk communication are increasing citizens knowledge of risks, implementing organizations mission or strategy, and influencing citizens risk perception and behavior. For the respondents, the least important objectives of risk communication on the list were increasing dialogue and strengthening the organization's position in the society.

Table 4: Primary objectives of risk communication.

<b>What does your organization primarily aim for with risk communication? Choose three most important objectives.</b>	<b>% (preference of choice)</b>
to increase the target audience's / citizens' knowledge of risks	84,2 %
to implement the organization's mission or strategy	78,9 %
to influence the risk perception and behavior of the target audience / citizens	78,9 %
to correct false information	36,8 %
to calm the target audience / citizens and reduce their concerns	36,8 %

to increase trust in our organization	15,8 %
to influence societal decision-making and development more broadly	15,8 %
to increase dialogue	10,5 %
to strengthen the organization's position in the society.	10,5 %

Responses to question 11 show that risk communications in the respondents' organizations tries to tackle both those issues that the safety authority itself defines as risks but also the issues that their audience perceives as risks (their concerns and questions). 14 out of 20 respondents thought that their organization's risk communication aims to take both needs into account.

Question 12 sought to finding out characteristics and emphasis of risk communications by asking the respondents to prioritize the statements that best describe the risk communication of their organization. Some of the statements ranked to more than one position on the list. However, the top 3 most chosen options were clear, having to do with the trusted expertise of the organization as well as reducing public's concerns. Least popular statements related to dialogue with the public and not implementing risk communication at all.

Here are the statements in the order of the respondents' preferences (1 = the statement that best describes the situation, 9 = the statement that least describes the situation).

1. Our organization is trusted as a risk expert of our industry.
2. Our organization's risk communication is sharing of expert knowledge.
3. With our risk communication, we have been able to reduce public's concerns.
4. Our risk communication needs to be developed.
5. Our risk communication is planned and goal-oriented / Our risk communication is successful.
6. With our risk communication, we have been able to increase the public's understanding of risks.
7. Our risk communication is a dialogue with the public.
8. Our risk communication is a dialogue with the public / Our risk communication needs to be developed.
9. We hardly implement any risk communication.

#### **4.4. Implementing risk communication in the organization**

Questions 13-16 of the survey dealt with the actual hands-on implementation of risk communication.

According to the responses to question 13, the most used communication means and channels for risk communication are website content (e.g., news, blogs, articles), press releases and media communications as well as social media channels. The option “something else, what” was answered by two respondents, who identified trainings and fairs as communication means used in their organization.

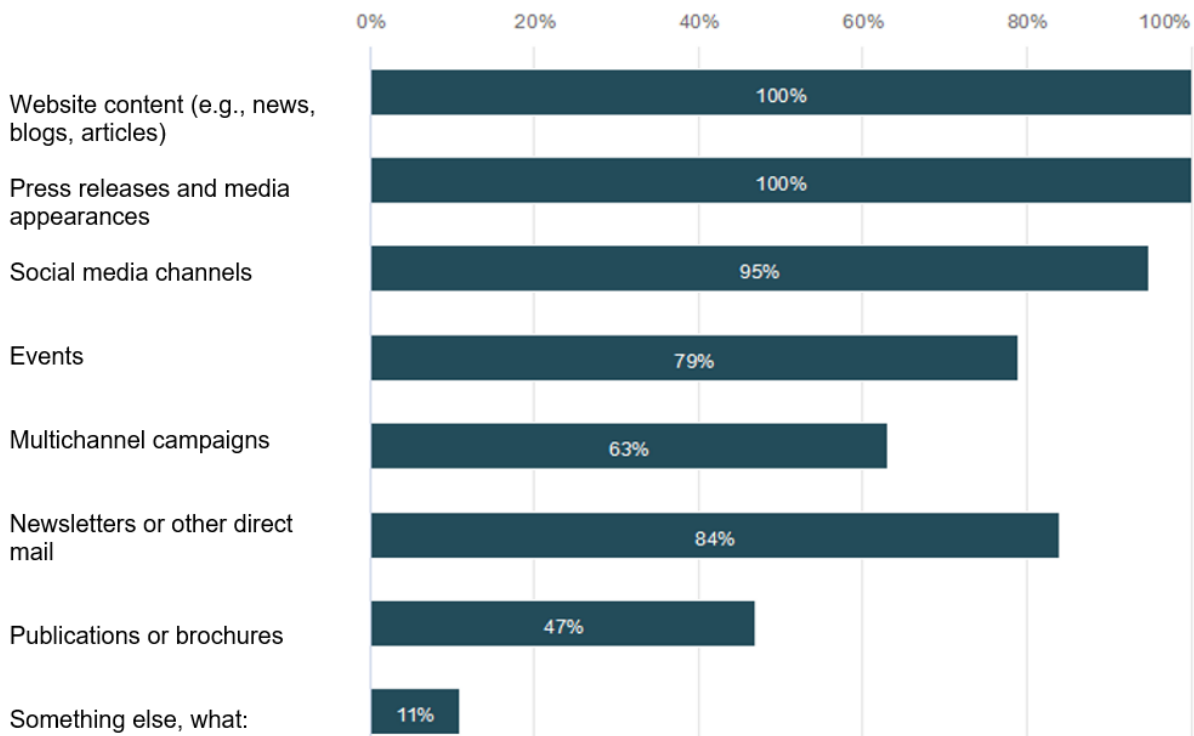


Figure 3: Most used communication means and channels for risk communication.

When asking about dialogue between the authority and public, 7 from 20 respondents said that participatory methods such as workshops, webinars, surveys / interviews, social media campaigns and cooperation with influencers, are used to involve and engage the public in risk communication. 9 respondents from 20 told the opposite; participatory methods are not used; thus, the risk communication methods are rather one-way directional and informative.

Question 15 inquired the type of challenges that the respondents face in their organization's risk communication. Respondents were asked to choose three biggest challenges from eight options. Changing public's risk perceptions, spread of false information, emotional reactions as well as reaching the right target group were identified as most important challenges. One respondent chose the option “Something else, what” and described the lack of resources as a challenge.

Table 5: Challenges the respondents face in their organization's risk communication.

<b>The challenge in risk communication</b>	<b>% (preference of choice)</b>	<b>Number of respondents</b>
Changing the risk perception of the target audience is difficult	68,4 %	n=13
The spread of false information among the target audience	63,2 %	n=12
The target audience reacts with emotion	52,6 %	n=10
Reaching the right target group is difficult	52,6 %	n=10
Creating a dialogue about risks is difficult	21,1 %	n=4
The target audience does not trust the authority	10,5 %	n=2
Producing risk communication content is difficult	10,5 %	n=2
Something else, what	5,3 %	n=1

The last question of the section inquired about the metrics: *Is the success of risk communication measured / evaluated in your organization? If yes, how?* Seven respondents from 20 (35 %) told that metrics are not used for risk communication in their organization. Five respondents (25 %) were unable to confirm whether or not metrics take place. Eight respondents (40 %) answered that metrics are used and specified their answer with for example the following comments on how they use metrics.

For example, through the delivery of messages and, in the longer term, indirectly by following people's perceptions and attitudes. However, it is difficult to create reliable and good metrics.

Media analysis.

Regular studies of risk behavior.

Not only the success of risk communication, but the success of communication in general, e.g., with reputation research and media monitoring.

With surveys, albeit a little flimsy.

With media and social media monitoring and analytics.

#### 4.5. Developing risk communication

The last part of the survey consisted of three open questions concerning the development and promotion of effective risk communication. It is to be noticed that all the open questions in the questionnaire received less answers than the multiple-choice questions. This is typical for questionnaires; questions with ready alternatives are answered more conscientiously than open questions.

The last three open questions and the number of answers were the following:

Question 17. Which factors would promote the effective implementation of risk communication in your organization? (18 responses)

Question 18. Which factors prevent or pose challenges to the implementation of effective risk communication? (17 responses)

Question 19. What kind of means would be needed in your organization to implement more effective risk communication? (13 responses).

The respondents saw that factors such as better planning and anticipation, additional resources, utilizing co-operation and partnerships, as well as identifying the target audience more clearly would be the ways to promote effective risk communications. For example, the following comments were given.

By knowing the target audience and e.g., their needs and perceptions, we can strengthen the effectiveness of communication.

Better identification of target groups and enabling the targeting of messages, for example through means of paid advertising. Further development of planning, better anticipation.

The management's commitment, which can be seen e.g., as funding and resource reservations, as well as consideration of risk communication in operational planning.

Time, resources, and predictability, of course. I see that changes in the operational environment and their more in-depth analysis would also bring efficiency to risk communication, at least it would improve predictability about the possible topics for risk communication.

Better cooperation between authorities and other stakeholders.

Good dialogue with substance experts, mutual understanding of the importance of risk communication.

More (human) resources that would enable the identification of target groups and the development of communications tailored to them.

Even better cooperation with similar organizations that share common risk communication goals. Getting experts involved in communication with their own faces and e.g., via their own social media profiles.

The factors posing challenges for effective risk communication included e.g., the lack of resources, the difficulty of reaching and engaging the audience as well the provocative style of social media writings and even that of the editorial media when reporting about risks.

Effective research-based risk communication requires a lot of resources.

Competition for target groups' attention, difficulty in reaching target groups.

How to implement risk communication so that it is not just warning about dangers. People's interest must be wakened; why would they be interested in this particular topic? People also want to think and decide for themselves, but if something bigger happens, they want the authorities to say or even "order" what needs to be done.

The way in which the current media and social media escalate issues also causes challenges.

All kinds of opposing communication, e.g., on social media.

Risk communication requires resources and is time-consuming.

How well does the organization identify the forums and topics for risk communication? Communication people alone cannot perceive everything, and they do not have a crystal ball, so identifying, anticipating and planning things take on an important role. That's also why I consider foresight to be important, to know how to plan the necessary resources well in advance.

When asking what would be needed in the respondents' organization to implement more effective risk communication, the responses were similar than for question 17 (Which factors would promote the effective implementation of risk communication in your organization?). The communication professionals felt that especially factors such as better resources (human and financial), clearer responsibilities, more systematic approach to risk communication as well as training for risk communication would be in a key role for implementing effective risk communication. Here are some of the respondents' comments on the needs.

Resources and specific expertise in (risk) communication, its impact and related research.

The implementation of risk communication could be done more systematically, more organized, so that we would understand better when risk communication and risk proportioning are needed.

More visible and versatile campaigns, which would require greater financial resources.

More precise objectives, clearer coordination, and responsibilities.

Better planning and clearer choices about where to focus on the communication.

Better communication skills of (substance) experts, identifying the issues that ought to be communicated.

Risk communication should be considered in the communication plan, better than currently. The target groups should be identified and the goals and means of communication should be defined for them.

Risk communication skills could be increased with training.

#### **4.6. Summary**

According to the results, the respondents had similar ideas on several challenges and enablers of effective risk communication such as resources, more precise objectives, and planning in general, co-operation with other experts (inside and outside the organization) as well as reaching the target group in an effective manner.

There was also diversity in the responses to certain topics such as how risk communication is perceived in general and how to implement it in practice (e.g., on the organizational level vs. unit level, via everyday communication vs. campaigns etc.).

Dialogue and trust, the issues that are emphasized in the risk perception and communication literature, were not highlighted in the answers. The possible reasons behind this observation are discussed in the next chapter.

## 5. Conclusion and discussion

This chapter interprets and analyses the survey findings. A light comparison is made in chapter 5.1.1. to a Swedish study that was detected during the thesis process and information search. Chapter 5 also concludes the whole thesis and suggests recommendations for future development. In addition, I will evaluate the trustworthiness of the study as well as reflect on my own learnings from the thesis process.

### 5.1. Analyzing the findings

The results of the survey brought out recurring issues and contents, which I have bundled under five main themes.

Theme 1: Understanding of the concept and the importance of risk communication

Theme 2: Goal-orientation and organization of risk communication

Theme 3: Dialogue and engaging public in risk communications

Theme 4: Resources for risk communication

Theme 5: Trust towards authorities

#### 5.1.1. Theme 1: Understanding of the concept and the importance of risk communication

The results of the survey show that although most of the organizations represented in the responses appear to be implementing risk communication, there is room for improvement in identifying its importance and objectives. The status of risk communication varies between organizations, some of which consider it a strategic choice and even describe it as a prerequisite for the existence of the safety authority, i.e., its mission. In other responses, risk communication was described as part of the basic work of the organization, like other communication; it was not thought to be separate or perhaps special compared to other communication activities.

I don't really think of it as a separate part of communication. It is part of everyday communication, all the time.

Either approach, "business as usual" or strategic focus, can work. However, the more one thinks that something is incorporated to other activities, the less it may receive separate attention or, for example, resources. Risk communication has specific characteristics and challenges, as described in the literature review in section 2.2. From that perspective, it might be useful to look at risk communication as a specific area, considering its challenges and prerequisites.



Almost half of the respondents felt that they did not have a clear understanding of what risk communication meant in practice in their organization, for example, its objectives and target groups. This may be because risk communication is not always carried out at corporate level but is specific to a particular department. In this case, for example, there may not be a risk communication plan that is comprehensive for the whole organization or known to everyone.

In certain departments it (risk communication) plays a bigger role than in others, and since we (communication professionals) are organized to work for substance departments, I don't know what instructions there are and where.

According to one respondent, the implementation of risk communication could be easier if the topic was simply discussed more within the organization and formally written into the communication guidelines.

Discussing the concept, adding it to communication policies and using it in everyday speech (would help to make risk communication more effective).

In chapter 2.2. risk communication was identified as part of risk analysis, and closely linked to risk assessment and risk management. In this context, it could be considered that risk-related activities and decision-making are a common concern for the whole organization. It can be a challenge for the communication professionals to carry out risk-related communication if there is no overall picture of risks or the responsibilities are unclear.

One of the respondents brought up the role of communication in the organization more generally. The comment suggests that once the importance of communication and information sharing (for example with the management) is understood, it is easier to anticipate the situations and topics, in which risk communication is needed.

Clarifying the role and position of communication in the organization (would be needed). Communication is a function that cuts across the organization, so it must be included in the organization's management forums. That would be a way to increase situational awareness and understanding and make things easier to predict.

Overall, the results suggest that it is useful for the safety authorities to think about what risk communication means in their specific context and how it would be best implemented so that the organization's target groups are aware of the risks and know how to best deal with it.

It is a fact, that risks are not going to go away. According to Leiss (2004) the ability to carry out good risk communication is a matter of creating specialized professional skills and an appropriate level of organizational commitment. Risk communication should be implemented through activities

that go on every day and which endure as long as do the risk factors themselves for which the organization is responsible. (Leiss 2004, 403.)

### **5.1.2. Theme 2: Goal-orientation and organization of risk communication**

New global risks in a turbulent world require a profound change also in the working methods of the authorities. Thus, many governments and public organizations around the world have developed comprehensive risk communication plans and strategies. Therefore, it is a bit alarming that according to this study, risk communication is not that well planned in the respondents' organizations. Around half of the respondents said that their organizations have not defined, for example, objectives, target groups or responsibilities for risk communication. Without clear objectives, it is difficult to implement effective risk communication as well as assess the success and quality of it.

It is true that the very nature of risk is unpredictable and unforeseeable, which can make it difficult to plan risk communication. On the other hand, many risk communication topics, such as issues affecting human health and well-being, have been existing for a long time. Therefore, risk communication on familiar issues such as smoking or poor diet is more about using new communication tools and methods and perhaps reaching new generations than about the risk being new or unpredictable or difficult to communicate.

It is a bit ironic that there seems to be a lot of emphasis on crisis communication, and there is certainly a crisis communication plan in many organizations. As learned in chapter 2.2.1., crisis communication is related to the organizations' own reputation management and may therefore be perceived as important. Risk communication, on the other hand, seems to be more unfamiliar and less well planned. A crisis is a risk manifested, as we learned from chapter 2.2.1. Therefore, attention to preventing crises via risk communication should be acknowledged. It is of course also possible that risk communication is not recognized as separate from crisis communication.

A person must expose to risk communications before he/she can be influenced by it. This means that communications should be planned, targeted, and implemented effectively (Lemal & Merrick 2013, 51.) From the survey responses, it can be concluded that communication professionals would like to see more planning and foresight in the implementation of risk communication. Foresight is also strongly linked to resourcing, which was identified as a major challenge in the survey (see theme 4).

### **5.1.3. Theme 3: Dialogue and engaging public in risk communications**

Despite of the change of emphasis from one-way information to dialogue and involvement, the risk communication strategies and even more so, the practice, seem not to have changed that much

during the recent decades. Infact, Löfstedt (2003) states that there has been a “failure to understand that it is necessary to work together with the public rather than simply ‘educate’ them.” More attention should be given to psychological, sociological, and cultural perspectives of risk perception and risk-related behavior. (Löfstedt 2003, 417, 418).

Also Snel et al. state that the root cause of risk communication failing is that it is still originating from the knowledge-deficit model which assumes that providing any kind of information to the public will increase their understanding of individual risks. In this approach, it is assumed that experts are ‘right’ and non-experts are ‘wrong’, or at least lay people lack the necessary knowledge to fully comprehend expert information. (Snel et al. 2019, 555.)

The results of the survey imply that risk communication by Finnish security authorities is rather one-way activity. Based on the responses, important objectives of risk communication are sharing expert knowledge and thus fulfilling the basic mission of the organization, increasing public awareness, and influencing people's risk behaviour through information. However, this is mainly done through one-way communication. In the survey, dialogue is ranked at the bottom end of the risk communication goals. The open answers show that some public participation opportunities are utilized, e.g., surveys or interviews. Public discussion forums and webinars were also mentioned as inclusive means for risk communication.

An interesting observation from the survey is the mention of using influencers as a means of dialogue. Influencer marketing can be an effective means of communicating risk information to a specific target audience and engaging them in a discussion of the issue. However, in such cases, the dialogue is not between the authority and the public. In general, both social media and editorial media have a potential role in facilitating public understanding of risks and therefore indirectly motivating public to take action.

In question 15, only 4 out of 20 respondents thought that creating a dialogue with the public was difficult, which seems contradictory; if creating a dialogue is not considered difficult, why not do it more? One possible reason could be that risk is not always a matter of opinion. Communication about safety is often based on research and calculations. The expert organization does not necessarily want this to be questioned. Another possible reason is a lack of resources; human and financial resources are not sufficient to foster a genuine dialogue and interactivity, but rather to do the basic work. Thirdly, legislation can make it more difficult to involve citizens in the actual decision-making on risks.

Any organization planning or implementing risk communication must decide whether the aim is to reach a consensus on a course of action or simply to educate people. If the former, is the

organization willing to share decision-making power with stakeholders? If so, this is likely to facilitate building trust and consensus on the policy. However, sometimes legal requirements or predetermined organizational policies dictate a particular decision. If the aim of risk communication is only to inform people, but not to give them the opportunity to participate in the decision-making process, this must be made clear upfront. Even in these cases, it is important to remember that communication is a two-way street and that public concerns are listened to and acted upon. (Bier 2001, 140.)

To understand people's perceptions of risk and to identify what information people need about risks, dialogue is very much needed. The success of risk communication and the effectiveness of risk messages should also be evaluated based on public's interpretation and feedback. (Morgan & Fischhof 2023). This requirement for knowing the audience and their risk perceptions was recognized in some of the responses, e.g.,:

We are striving to make our communications more research-based; by getting to know our target audiences and, for example, their needs and perceptions, we can strengthen the effectiveness of our communications.

As Reynolds states, information no longer flows in a hierarchal fashion from experts to non-experts. It moves around on different platforms, between people and networks, elaborated and constantly changing. This is a distinct and growing challenge for organizations that do not have processes and capacity to be part of that information flow and discussion. Organizations that are not agile in sharing information lose their place in the dialogue and may be replaced by other who do not have the public's best interest in mind. (Reynolds 2011, 209.)

#### **5.1.4. Theme 4: Resources for risk communication**

One of the key issues that emerged from the survey responses as a challenge and an area for improvement in risk communication is the lack of resources. Comments on resources included both human and financial resources. In the last three open questions of the survey, the lack of resources or the need for better resourcing was mentioned in altogether 19 different comments.

Partly related to resources, cooperation and networks were also perceived as important. Cooperation was desired both within the organization with subject matter experts and between similar authorities.

New partnerships and networks could be useful in reaching target groups and increasing impact.

WHO (2006) states that “everyone involved in a risk analysis is a risk communicator at some point in the process”. This emphasizes the idea that not only the communication specialists need risk communication skills and awareness but everyone in the organization dealing and working with risk issues. (WHO 2006, 66.) In addition, the connection between those who know the subject matter and those who are specialized in communicating this knowledge to the public, should be seamless. It is to be noticed, that dialogue about risks does not take place only between a certain organization and the general public. Risk communicators need to pursue information from other sources that might have knowledge of the specific issue, such as from other industries, similar authorities, or academic experts. (WHO 2006, 66.)

The development of specific skills in risk communication, anticipation and interpretation of scientific data also came up in a few responses. Developing the skills of both communicators and subject matter experts was seen as a means of delivering more efficient risk communication.

(We would need) ...increasingly specialized expertise in communication, impact-making and related research.

Getting more resources for risk communications requires that the work is seen as important, as something that should be invested in. However, as discussed under theme 1 (Understanding of the concept and the importance of risk communication) organizations see the importance of risk communication very differently.

In fact, Morgan and Fischhoff (2023) suggest that organizations would benefit from departments supporting risk communications, in the same way that organizations have units for e.g., financial, legal and information technology matters. In the end, risk communication is a combination of science and practice. Combining people with different skills could be helpful for studying people’s risk perceptions and behavior, creating meaningful content, choosing the right channels and testing risk communication effectiveness. (Morgan & Fischhof 2023.)

#### **5.1.5. Theme 5: Trust towards authorities**

In the risk communication research, trust is found to be an important element of risk communication. In risk debates, issues of trust evolve around institutions and their representatives. People’s responses to risk depend, among others, on the confidence they have in risk initiating and controlling institutions. (Renn 2010, 91.)

Trust related challenges (or success for that matter) was not emphasized in the respondents’ answers. On the other hand, the questionnaire did not have a specific question solely on the topic of

trust. However, in question 12 of the survey the respondents were asked to prioritize the statements that best describe the risk communication of their organization. First place was taken by the statement “*our organization is trusted as a risk expert of our industry*”. This can be concluded so that the audience / public considers that the authority has expertise on the matter and knows what it is talking about. And if there is believable expertise, the audience should be able to also trust the messages and data that the authority is providing.

On the other hand, in question 10, increasing trust was not seen as the primary aim of risk communication. This might be logical as trust is created through persistence and through everything that an organization says or does, all the time. According to the survey results, the most popular objectives for risk communications were:

- increasing the target audience's / citizens' knowledge of risks
- influencing the risk perception and behavior of the target audience / citizens.

However, trust is crucial in achieving these both goals. For the public sector, effective risk communication and management is a key factor in developing and maintaining public confidence. Importantly, it also works the other way around; when a public institution e.g., authority has succeeded in building a relationship of trust with its audience, also risk communication can be more successful.

Löfstedt reminds us about the challenge in the era of distrust; when the public has access to several sources of information, they are no longer dependent on officials. The result is a more knowledgeable but more skeptical public. (Löfstedt 2005, 5.) This means that public organizations need to be “out there” where their audience is and not letting someone else to fill in the vacuum of knowledge, at worst with false information. In fact, the answers of the survey brought out that targeting and reaching the audience is a challenge that needs to be considered and planned better.

Surveys show that Finns' trust in the authorities is still at a relatively high level. Finland is a country of strong trust and has done well in international trust comparisons. However, the OECD evaluation report (OECD 2021) shows that despite the high national average, Finns' trust in different public institutions varies. While citizens' trust in public institutions and satisfaction with democracy is high, the proportion of people who believe they can influence political processes is low in Finland compared to other countries with high levels of trust. The OECD stresses that the potential marginalization of certain groups should be tackled in Finland by promoting a broader social dialogue. (OECD 2021.)

Gaining and maintaining trust is not an easy task, nor can it be accomplished according to certain guidelines. Trust grows with the experience of trustworthiness. It is the invisible product of a

successful communication, feedback and dialogue on issues and concerns. There is only one general rule for building trust: listening to public concerns and, if needed, offering responsive communication. Information alone will never be enough to build or sustain trust. (Renn 2010, 91.)

## **5.2. A comparison: risk communication in Swedish governmental agencies**

To gain some perspective from the Nordic context, I will summarize the results of a similar study from Sweden to make some indicative comparisons and observations.

Boholm (2019) studied the risk communication practices of six Swedish governmental agencies. The objective of Boholm's study was to uncover goals, principles, challenges, and practicalities of risk communication from a practitioner perspective. The study is based on 23 interviews with public officials.

The study showed that the officials at the Swedish agencies varied greatly in their familiarity with the concept of risk. In addition, there was little consensus on what the goals of risk communication are and how uncertainty should be communicated. Top-down dissemination of information to the public was still seen as crucial. Dialogue and participation were used mainly with other agencies and with those "elite stakeholders" with whom agencies collaborated to implement policy goals. Dialogue with the public on issues of risk was very limited. Thus, there is a significant gap between the academic research of risk communication and government agency practice. (Boholm 2019, 1705.)

Although Boholm's study is more profound than the one of this thesis, and the questions have a slightly different focus, some findings are surprisingly congruent. First similarity is the varying degrees of familiarity with risk communication. In the Swedish study some interviewees also connected risk communication to crisis communication, seeing the approaches similar. Second similarity is the lack of dialogue and participation with the public. Among the studied authorities / agencies in both studies, risk communication is largely adhered to a traditional, technocratic, top-down model. However, the public trust in government institutions in the Nordic countries is relatively high. This might be the reason for not having an urgent need or will for public participation in risk management and risk related decision making.

Boholm suggests a range of development ideas for the Swedish governmental sector. First of all, Swedish government agencies should exchange views and perspectives regarding key issues of risk communication, such as communicating uncertainty and working with transparency. Perspectives on risk and risk communication, its goals, methods, and outcomes, need to be harmonized. Boholm also recommends more research into agencies in other countries, inside and outside the

European Union. For academic risk communication to have an impact on practice, qualitative knowledge is needed on how risk communication is understood and implemented by the practitioners themselves in national government agencies. (Boholm 2019, 1705.)

All these suggestions could also be applied to the Finnish authorities. Challenges being similar, so would be the solutions.

### **5.3. Discussion and development suggestions**

The purpose of this thesis was to gain understanding of the factors promoting effective risk communication as well as the challenges hindering the success. This was done by examining risk communication literature as well as investigating the current state of and development needs for effective risk communication among Finnish safety authorities. The thesis aimed at providing a current state analysis as well as development suggestions for Finnish safety authorities on how risk communication could be improved and developed.

The main research question was:

RQ1: What kind of means and development do Finnish safety authorities need to be able to implement effective risk communication?

The sub questions were:

RQ2: What is the current state and status of risk communications of Finnish safety authorities?

RQ3: What are the main challenges concerning risk communication of Finnish safety authorities?

RQ4: How can risk communication of Finnish safety authorities be improved?

The main results of the case study show that although the role and implementation of risk communication varies a bit, there are emphasized factors that need attention. The author sees that the results can be utilized by the Finnish safety authorities when considering the current state of their risk communication and the possibilities for improvement. Although a variety of challenges and needs were brought up by the respondents, there were topics that recurred in several answers. Therefore, it can be useful for the safety authorities to direct their attention to issues such as resources, anticipation and planning ahead, co-operation with other institutions, experts and researchers as well as better identification and reach of the target group of a particular risk.

In addition, it would be important that the safety authorities have a common understanding about the concept and importance of risk communication. Risk communication has specific characteristics, largely related to the psycho-social factors of the target audience: emotions, information processing, attitudes, history. In order to really understand the target audience, their perceptions of a particular risk need to be studied. How the authorities actually do this kind of background work and



research (or do they) was not directly asked in the questionnaire. It maybe should have been to get a deeper insight of the processes leading to more impactful risk communication.

Both the academic literature and the case study answers reveal that

- risk communication is complex and challenging, for many reasons. The data of risks is complex by nature; risks are perceived in multiple ways; emotions can affect the process significantly; there are multiple sources of alternative information.
- there can be a lack of trust between experts and the public. This is not yet a severe problem in Finland or other Nordic countries, as according to studies, trust is quite high towards authorities. However, the authorities should not become complacent on the matter. To retain trust requires work. In some issues, especially if the risk is very personal or otherwise sensitive, people may be more likely to rely on their own perceptions, experiences and information sources when evaluating risks and deciding on how to act upon them.
- there can be challenges related to resources, as the study results emphasize. The need for resources can be significant, including time, money, and personnel. Sometimes, organizations may be reluctant to invest in risk communication efforts if they prioritize other objectives.

In order to tackle their risk communication challenges, Finnish safety authorities should be striving to establish risk communication that is more conscious, anticipatory and well-planned. In addition, they should find out who they are to serve the most (identifying the target group) and how (understanding risk perceptions and acting accordingly). Doing risk communications effectively requires attention to its importance, increasing resources and specific skills. Collaboration, interaction and co-developing solutions between different parties related to risk issues should be enhanced.

In addition to these strategic development efforts, there are plenty of practical risk communications guidelines in which the Finnish safety authorities could familiarize themselves with. Sharing best risk communication practices and evidence for example in a communication network of Finnish authorities would be something to aim for.

Finally, it is good to keep in mind that there is not a single understanding of what risk means and therefore no such thing as a flawless formula for successful risk communication. According to Löfstedt (2005) the same risk communication strategy may have different outcomes depending on the audience, the country, and context in which it is used. One needs, rather, to proceed on a case-by-case basis and invest in building trust between the parties involved. (Löfstedt 2005, 1,3.).

In addition, it is important to consider what successful risk communication means in each organization, as it can mean different things. Is the most important goal to support people's decision-making

processes by providing accurate, trustworthy, and well-argued information? Or does the organization aim at changing people's risky behavior via persuasion? For example, a person might well know and understand the risks of smoking, but still does not quit the bad habit. Has the communication then failed?

This study is a scratch on the surface of a very complex and multidisciplinary topic. More research would be needed into risk communication and its effects on people's behavior in the 2020's and near future.

#### **5.4. Research evaluation and learnings**

The data used for the study was both quantitative and qualitative, depending on the question type (multiple choice and open questions). Thus, the data was analyzed both numerically and with content analysis.

A study is reliable when the results are not due to a chance. In this thesis, the questions in the questionnaire felt clear and understandable to the author and the testers of the questionnaire (the thesis supervisor and the author's supervisor, the communications manager). The risk of ambiguity was not considered likely, and, on the other hand, there were several points in the questionnaire where it was possible to clarify the answers with an open response. The sample group was very limited; it represented communication professionals of safety authorities. Most of them were familiar with risk communication. Therefore, if the survey were to be repeated, the same results would be very likely to be obtained under the same circumstances. The original survey and the given answers were in Finnish. Both have been translated as accurately as possible into English.

Validity is achieved when the study and its methods measure exactly what it is intended to measure. Validity can be assessed by considering whether the data, the research methods and the results obtained justify the claims made. In this study, the subject and the target group were very clearly defined. The research stayed on track and the research questions were clear in the author's mind throughout the process. Validity could perhaps have been further improved by using also interviews as a research method. This might have provided more in-depth information and more accurate analysis of the respondents' thoughts.

The survey was conducted ethically, and respondents' anonymity was carefully protected. Only limited information about the respondents' backgrounds was asked because the background was not considered essential for the topic. The author is also a public authority communicator, but a relatively new one without extensive experience in risk communication. This is precisely why the topic

was of great interest to the author. However, no preconceived notions or attitudes had been formed about the topic; therefore, objectivity was maintained.

This thesis has broadened the author's knowledge of the challenges and opportunities of risk communication. Risk communication is an integral part of the tasks of the Finnish safety authorities and the author believes that the results of the study will stimulate interest and ideas for the implementation and development of risk communication.

Writing a thesis was a challenge. The author was not able to decide the topic until autumn 2022 and by that time there was only a few months left with the official study right. The process was delayed due to a change of job and the busyness of daily communication work. Full-time work in communications has been very challenging in the last few years due to global crises. Family life also had an impact on the study schedule. However, extended study time was granted by the UAS to finish the thesis.

The literature on risk communication is diverse. The best-known risk communication theories are quite old, although they have also been developed over the years. It was sometimes difficult for the author to discern what was most relevant to risk communication research. Many studies and sources are also linked to a specific sector, for example health risk communication or environmental risk communication. It was not easy to put together a set of perspectives. In addition, the author is not at all an experienced researcher.

More responses to the questionnaire would have deepened the results. Unfortunately, there was no time to gain more knowledge through interviews. However, the questionnaire gave an indication of how safety communicators see the current state of the issue and the need for further development. The thesis serves as a basis for possible further research on the subject. The modern world also makes possible a whole new set of risks that are waiting to be analyzed by researchers.

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## Appendices

### Appendix 1. List of tables

Table 1: Advantages and disadvantages of questionnaires, adapted from Ojasalo, Moilanen & Ritalahti 2022 and Vehkalahti 2019.

Table 2: Number of respondents per organization and their administrative branch.

Table 3: Factors best describing the implementation of risk communication in the respondent's organization.

Table 4: Primary objectives of risk communication.

Table 5: Challenges the respondents face in their organization's risk communication.

### Appendix 2. List of figures

Figure 1: The risk analysis framework with the elements risk assessment, risk management and risk communication. Adapted from WHO / FAO 2006, 6.

Figure 2: The data analysis process

Figure 3: Most used communication means and channels for risk communication.

### Appendix 3. Questionnaire

1. Background information (organization, work experience in public communications, familiarity with the concept of risk communication)
2. Does your organization carry out risk communication for external target groups (citizens or others to the external audience, which risk applies)?
3. Do you have a clear understanding of what risk communication means in/ for your organization? (risk communication themes, goals, target groups, etc.)?
4. Is risk communication included in your organization's communication strategy or in other communication guidelines?
5. How important do you consider risk communication to be in your organization?
6. Briefly justify your answer to the previous question 5; why do you or do you not consider risk communication as an important task in your organization?
7. Which of the following best describes your organization's way of implementing risk communication (you can choose more than one option)?
  - Risk communication is continuous, part of the daily communication
  - Risk communication is carried out proactively
  - Risk communication is carried out when a risk seems to have increased

- Risk communication is carried out when the target audience's interest in the matter increases
- Risk communication is carried out as campaigns
- I am unable to say how our organization implements risk communication
- We don't exactly implement risk communication

8. According to your own point of view, describe the current status and realization of risk communication in your organization.

9. Choose the things that have been defined for your organization's risk communications

- Objectives
- Target groups
- Core messages
- Channels
- Responsibilities (persons)
- Metrics
- Financial resources

10. What does your organization primarily aim for with risk communication? Choose three most important objectives.

- to increase the target audience's / citizens' knowledge of risks
- to implement the organization's mission or strategy
- to influence the risk perception and behavior of the target audience / citizens
- to correct false information
- to calm the target audience / citizens and reduce their concerns
- to increase trust in our organization
- to influence societal decision-making and development more broadly
- to increase dialogue
- to strengthen the organization's position in the society.

11. Does risk communication in your organization focus on communicating issues that your organization as an authority defines as risk or does it focus on communicating issues that your audience perceive as risks (their concerns, contacts, questions)?

12. Which statement best describes the risk communication of your organization?

- Our organization is trusted as a risk expert of our industry.
- Our organization's risk communication is sharing of expert knowledge.
- With our risk communication, we have been able to reduce public's concerns.
- Our risk communication needs to be developed.

- Our risk communication is planned and goal-oriented
- Our risk communication is successful.
- With our risk communication, we have been able to increase the public's understanding of risks.
- Our risk communication is a dialogue with the public.
- Our risk communication needs to be developed.
- We hardly implement any risk communication.

13. What communication means, and channels do you use for risk communication?

14. Do you use participatory methods that involve the public in your risk communication? (Participatory method here means methods based on genuine interaction, such as citizens' councils, discussion sessions, surveys/interviews, workshops or other dialogical means).

15. What kind of challenges do you face in your organization's risk communication? Choose three biggest challenges.

- Changing the risk perception of the target audience is difficult
- The spread of false information among the target audience
- The target audience reacts with emotion
- Reaching the right target group is difficult
- Creating a dialogue about risks is difficult
- The target audience does not trust the authority
- Producing risk communication content is difficult
- Something else, what

16. Is the success of risk communication measured / evaluated in your organization? If yes, how?

17. Which factors would promote the effective implementation of risk communication in your organization?

18. Which factors prevent or pose challenges to the implementation of effective risk communication in your organization?

19. What kind of means would be needed in your organization to implement more effective risk communication?