AALBORG UNIVERSITY

Safety Perceptions in Multicultural Organizations

A Research Study on Safety Communication, Compliance and Strategy Implementation in Culturally Diverse Workplaces in Denmark

Master's Thesis Project
M.Sc. in Safety and Risk Management

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Abstract

As a part of the increasing cultural diversity in the international labor market, the research study examines how employees with different cultural backgrounds are related to safety perceptions and behaviors in a multicultural organization in Denmark. The study contributes to connecting the gap between literature by exploring the intersections of occupational safety and multiculturalism with a particular emphasis on how migrant and culturally diverse employees perceive, interpret and negotiate workplace risks.

A standardized survey was distributed among employees across a range of positions in Danish multiethnic workplaces. Statistical analysis by means of chi-square tests and descriptive analysis was used for quantitative information, and multiple-response answers were analyzed in order to measure a complex challenge of safety communication. Additional risk assessment techniques, i.e. a 5×5 risk matrix and Failure Mode and Effects Analysis (FMEA), were employed to rank safety perception hazards, and formulate strategic recommendations.

The main results reveal that language barriers, time and workload constraints, and a reluctance to speak up are important barriers to effective safety communication among workers in a multicultural setting. Although research showed workers' confidence to report safety matters, but cultural values, communication methods and psychological safety problems remain. The study also reveals that a generic approach to safety will be inadequate, considering rather a contextual approach which include multilingual communication, culturally relevant training and leadership involvement in building a shared safety culture.

The paper proceeds the larger conversation about industrial safety by providing empirical input for the development of adaptive, culturally relevant safety policies. The research highlights the need to view cultural diversity, not as a barrier but as a fact that needs to be thoughtfully considered in the safety management domain.

Preface

The report has been made for the master's thesis for the master's program in Safety and Risk Management at Aalborg University Esbjerg. It is an individual report by Samiha Amin.

My master's thesis topic deals with extensive research to find a specific gap in the field of Occupational Health and Safety. Through critical analysis and methodology, and innovative insight, I pursue to demonstrate my research skills, creativity, and academic writing proficiency.

The thesis on "Safety Perceptions in Multicultural Organizations" has been prepared to explore the perception of safety for workers who are from multicultural organizations in Denmark. Preparation of this report included research, data collection, and a survey. The report should be submitted by June 2nd, 2025 and will be defended in an oral exam on June 11th.

I am grateful to my supervisors, Anders Schmidt Kristensen and Christian Damsgaard Jørgensen, for their helpful advice and assistance. I would like to thank them for giving me their time, comments and support in my research journey.

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I am very grateful for the consistent guidance from my primary supervisor, Anders Schmidt Kristensen during the process of writing the thesis. His valuable assistance in choosing a research topic, helping in data collection, providing feedback on the manuscript, and recommendations in structuring the report made a significant contribution to complete the work.

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I am thankful to Carsten Heine, the librarian at Aalborg University, for his tremendous support in accessing the academic literature via the AAU Library and guiding me to construct the survey questionnaire into SurveyXact.

Lastly, I would like to thank my family and friends for their unwavering motivation, encouragement and support that have been a great source of strength for me during the research journey.

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List of Acronyms and Abbreviations

Acronym	Full Form
AMO	Arbejdsmiljøorganisation (Health and Safety Organization – Danish Model)
CER	Conjoint Expected Risk
CHI^2 / χ^2	Chi-Square (statistical test)
df	Degrees of Freedom
ESB	Employee Safety Behavior
EU-OSHA	European Agency for Safety and Health at Work
FMEA	Failure Modes and Effects Analysis
HR	Human Resources
ISO	International Organization for Standardization
JOSE	Journal of Occupational Safety and Ergonomics
OHS / OSH	Occupational Health and Safety / Occupational Safety and Health
OSHA	Occupational Safety and Health Administration (USA)
PD	Power Distance (Hofstede's cultural dimension)
PPE	Personal Protective Equipment
P × I	Probability × Impact (used in risk matrix calculations)
QR	Quick Response (code)
R	Risk
RPN	Risk Priority Number
S, O, D	Severity, Occurrence, Detection (FMEA scoring criteria)
SPSS	Statistical Package for the Social Sciences
UA	Uncertainty Avoidance (Hofstede's cultural dimension)
WHO	World Health Organization

1. Introduction

In today's globalized world, organizations are experiencing an exceptional level of cultural diversity in their workforce. [1] Several factors such as escalation in transnational migration, global business integration, and strengthening global economic ties has driven the change towards multiculturism in the workplace.[1] [2]

Guillaume et al. (2017), in their thorough consideration in the Journal of Management of the impact of diversity on group processes, concluded that value-in-diversity opportunities and management challenges are both embedded into diversity, determining specialized organizational demands. [3] Structure on this, Shore et al. (2018) in Academy of Management Annals argue that in a variety of environments, organizations have to handle the integration differentiation paradox, whereby diversity offers potential for innovative solutions while also generating complexity in management practices. [3]

The influential article by Cox and Blake (1991) in Academy of Management Executive built further on the theme that organizations benefit from diversity but struggle with the required changes that must occur throughout the entire organization. [3] Companies are finding a variety of opportunities and challenges matching their workforce and creating an inclusive workplace environment. Workplace safety is an important place where multiculturalism has a practical signification. Due to cultural diversity, the same safety and risk may be evaluated differently in distinct cultures, which may result in different behaviors of employees to the same workplace threat [4]. Such cultural variance in attitudes to safety can have far-reaching impact on organisational safety initiatives and how risks are communicated more broadly. [4]

Psychological Safety in Multicultural Organizations Psychological safety in multicultural and intercultural organizations is more than mere regulatory compliance; it requires a delicate balance among cultural values, communicative styles, and individual preferences for risk [5]. With today's diverse workplaces, traditional safety management methods may not work to tackle the special problem of handling safety in a multicultural team. [6]

It is important for designing effective safety procedures and inculcating common safety climate in organizations to recognize the ways in which cultural background influences safety perceptions. This is particularly the case in sectors that employ a large number of migrant workers, or in the context of multinationals firms that require employees from different cultural areas to 'work together' [5] [4]

The article investigates theoretical and applied conceptions of multiculturalism as they relate to organizational issues. Cultural diversity in the workplace can be reflected and supported by even the smallest business in its day-to-day actions [7] Differences such as positive and negative attitude, outlook and contrast on religion, language, race, gender, ethnicity, generation, sexual orientation, and physical and mental abilities can all play a part of the overall culture and attitude of an organization. [5] [4]

As organizations strive to create safer work environments in the face of increasing cultural diversity, it becomes essential to explore the intersection of multiculturalism and safety

perceptions. This research aims to delve into the nuances of how cultural backgrounds shape safety attitudes, behaviors, and perceptions in multicultural work settings.

On the other hand, Perception plays a crucial role in workplace safety, influencing how workers interpret hazards, risks, and preventive measures. A 2021 concept analysis found that psychological safety influences how employees perceive the consequences of taking interpersonal risks, such as reporting errors, voicing concerns, and engaging in open communication.[8] In multicultural work environments, cultural differences significantly impact safety perceptions and outcomes. A risk-based study on safety barriers found that foreign employees are 1.6 to 13 times more likely to experience occupational accidents than Norwegian employees, with a 46% higher overall risk [5] Similarly, in high-risk work environments, perceptions of workplace safety are shaped by psychosocial hazards and work-related stress.

Some research in developing countries has shown that workers perceive stress and workplace hazards to be compatible as the cause and the effect. Safety is a regional concern, and stress control, injury prevention, and substance abuse are a driving force behind prioritizing workplace safety. [9] Much like with the safety culture, the environment - social rules, leadership and peer behavior - also have a massive influence in the safety perception. For example, in 2021 studying on The Impact of Safety Culture on Safety Performance; The Mediating Role of Psychosocial Hazard: An Integrated Modeling Approach, safety culture is defined as: Common value, attitude and behavioral patterns, supporting occupational safety, it is emphasized that organizational culture in many ways determines employees' safety perception. [10] Where study on Relationship among safety leadership, risk perception, safety culture, and safety performance (2023) on military volunteer soldiers revealed that safety leadership increases the level of risk perception, and safety culture as a mediator between leadership and safety performance, which highlights the role of peer behavior and social context. [11]

Furthermore, in the healthcare industry examines ethical leadership's impact on workplace safety perception, finding that media quality, communication climate, and supervisory communication play a mediating role, reinforcing the importance of organizational support and communication in shaping safety perceptions. [12]Therefore, Psychological and Social factors shape these perceptions, resulting in variations across different cultural and professional groups. This article examines workplace safety perception through both psychological and social lenses, with a focus on multicultural and high-risk work environments. [12]

However, Migrant workers face several challenges that can affect workplace safety. Language barriers often make it difficult for them to fully understand safety instructions, increasing the risk of accidents. Additionally, the fear of job loss can discourage them from reporting safety violations, as they may worry about jeopardizing their employment.[5] Moreover, workers from different backgrounds may carry different perceptions of risk; when some workers viewing certain hazards as normal while others find them alarming. [5] In multicultural work environments, these challenges are amplified. Miscommunication due to language differences can lead to misunderstandings of safety procedures; while differing cultural norms may cause workers to perceive risks in diverse ways. Therefore, workplace safety must address not only technical precautions but also the psychological and cultural factors that influence workers'

perceptions. Organizations should implement training programs that go beyond just providing information, ensuring that they also tackle social and cultural influences to foster a shared understanding of safety risks among all workers. [5]

The growing cultural diversity in Danish workplaces as a result of globalization and migration has created opportunities as well as challenges, among which is safety at work.[3][4][5] Despite these findings, previous research has examined multiculturalism and safety at work separately, and there has yet to be a discussion concerning how cultural backgrounds could influence safety perceptions and attitudes at work. This gap is redressed through the investigation of how migrant and multicultural employees view and respond to workplace risks and safety measures in Danish work environments.

There are numerous reasons why this study is important. First, it adds to our knowledge on the extent that perceived safety differs among cultural groups which contributes to the general literature on occupational health and safety in multicultural societies. This study provides insight on critical barriers, language differences, risk tolerance differences, workload of importance and reporting in improving our understanding of the barriers to effective safety communication and adherence in multicultural workplaces.

Practically, the results of this study can inform organizations in fostering more inclusive safety strategies. By identifying successful training approaches, communication strategies, and leadership styles that are inclusive of multiple perspectives this research might help guide organizations to develop a culture of work that is safer and more inclusive. The findings will be of specific interest to HR professionals, policy makers and safety managers operating in Denmark, and other similar multi-ethnic labor markets.

Finally, this study is expected to contribute to the design of workplace policies that understand and accommodate cultural diversity in safety perception. In that way, organizations can increase employees' well-being, stimulate compliance with safety regulations, and develop a more effective and inclusive safety culture.

1.1 Motivation

As globalization profoundly impacts the modern world, Danish companies are receiving a surge of migrant and multiculturally diverse workers. This shift in population comes with opportunities and challenges, especially concerning occupational health and safety. It is important to determine how workers from different cultures and backgrounds address safety concerns within a workplace.

Although safety is an international issue, its implementation can be understood and practiced in various ways. The objective of this investigation is to understand how people from varying cultures will interpret and understand safety issues and relate such cultures to the regimented safety approaches that Danish institutions use. By understanding these differences, it will be possible to devise new strategies that are more inclusive and helpful.

The one major focus of this investigation is to look for barriers in safety communication and compliance that tend to exist in a multicultural environment. Differences in languages, perception towards a certain degree of risk, and cultural practices may inhibit the proper reception and adherence to safety information. These are the first challenges that should be tackled in order to formulate some effective approaches for overcoming the obstacles.

With the completion of this study, we hope to add to the existing literature on perceptions of safety within multicultural contexts and offer some practical insights for Danish organizations. The findings of this research could assist in developing policies, training strategies, and safety management plans in different sectors.

To address the divergences in perception, this research study seeks to argue that as diversity increases in Danish workplaces, safety measures should be proactive and adaptable to the diversity being encountered. Safety measures ought to encompass the perceptions of migrant and multicultural workers so that there are effective and safe working conditions for all.

1.2 State of Art

The workplace safety perception is an awareness and understanding of the principles of safety, types of hazards at the workplace, risks related to hazards, capabilities and means for prevention and choosing safer methods, procedures and techniques. Additionally, it exposes the organization's overall safety culture. Workplace perception surveys determine employee awareness, impact of safety programs, attitudes and morale, training needs and compliance needs support and map to the strategic goals of the organization. [32]

Attitude towards workplace safety, safety promotion programs, involvement in safety, safety policies and regulations, safety management commitment, safety assessment, communication, training, hazard elimination, and accident reporting are some of the key elements that impact the feeling of safety at work. The safety inspections, following operating procedures, supervision, discipline and reward etc. and overall maintenance of the workplace are the other factors as are important. [32] Perception of safe working environment by workers is a strong indicator of human resource effectiveness of an organization as well as compliance attitude of the organization. Positive safety perceptions tend to make people perform more purposefully and effectively, which means they produce better work more efficiently and at a lesser cost, both in terms of accidents and injuries and at work. [33]

Ultimately, an organization's commitment to safety is shaped by leadership and management's approach to safety. Greater focus on safety measures requires significant investment in budgeting and resources, but it yields long-term benefits in productivity and employee well-being. [32]

A multicultural organization is a workplace that consists of employees from diverse cultural, ethnic, and national backgrounds. These organizations benefit from a wide range of perspectives, fostering innovation, creativity, and problem-solving. Guillaume et al. (2015) identify communication barriers and conflicting norms as key challenges in diverse teams, necessitating tailored leadership and HR practices [34]

Shore et al. (2011) explain that creating a sense of inclusiveness requires addressing unconscious bias – addressing unconscious bias at two levels, that is, policies for individuality and policies for group solidarity. [3] Managing a multicultural workforce on the other hand, presents its own set of challenges which must be carefully addressed in order to ensure that inclusion, communication, and collaboration are enacted to full effect. [2]

Cultural Variations in Work Behavior: staffs from different cultural backgrounds can have different perspectives on hierarchy, collaboration, and consensus. Some may be strict in regarding hierarchy and obey rules, others in favor of open discussion and challenge authority. [35] Organizations need to provide cultural awareness training so that employees can learn and value each other's different working styles. In 2019, a Bangladeshi electrician and a Chinese foreman were involved in a lockout-tagout incident at a workplace where they both worked and misinterpreted procedures, leaving the downstream worker in a high electrical hazard, a case study published in the Journal of Safety Research found. Cultural factors also significantly increased the risk. The electrician for whom English was not his first language did not understand the idiomatic expressions referencing "killing the juice" that the foreman had used. [35] In addition, workers applied safety practices from their home countries' electrical systems, conflicting with safe practices in the United States. Hierarchical culture was also a barrier to communication with junior staff being discouraged to question or verify senior staff instructions. Post-incident debriefs demonstrated that 68% of safety near-misses recorded within the facility resulted from language confusions, and mixed cultural teams experienced three times as many protocol breakages than did monocultural teams. [35] (3) Ethical and Moral Variations - Moral and ethical differences—Personal values or religious beliefs and societal norms will influence behavior at work. These are the differences that can influence the perceptions of what is fair, disciplinary process and professional ethics. In order to produce the type of environment that is sensitive to all sub-cultures, companies should implement axioms that are just to maintain the ethical tone of the firm in view of such innuendos. (4) OHS and work compliance – Health and safety is another difficult aspect of working in a multicultural environment as there is a vast difference in the level of safety related legislations or even the consideration of safety as part of work culture in many part of the world. There also may be certain cultures or subcultures that have a fatalistic belief in accidents and simply do not believe they can be prevented [1] This universal safety culture should be developed by employers through regular safety training, global safety reminders and the enforcement of identical safety practices. (5) Coordination between Management and Employees – A strong management team can help bridge cultural divides. Management must take an active role in addressing diversity problems, creating an inclusive culture and diversity of viewpoint at the decision-making table. Cultivating worker representation by forming diverse councils or employee resource groups can create a supportive climate at work. (6) Economic & Social Realities –i.e., diverse workers' existence is shaped and influenced by the resources to which they have access, and that those resources influence the experiences and conditions of employment. For example, they may not be financially secure enough to invest in PPE or extra training. Companies could provide safety equipment, training or financial support to create level ground and equal opportunities. [1]

The research study explores key areas related to safety perceptions in multicultural organizations, focusing on how cultural diversity influences workplace safety behaviors, the challenges of communication and risk management in diverse work environments, and the role

of national culture in shaping safety climate and performance [37] [6]. It also aims to identify existing research gaps, particularly regarding how workers from different cultural backgrounds in Danish companies perceive and respond to workplace risks and safety measures. The study examines primary barriers to effective safety communication and compliance in culturally diverse workplaces, such as language differences and varying interpretations of risk and authority. Furthermore, it investigates the strategies implemented by Danish companies to address cultural differences in safety perceptions and evaluates their effectiveness from the employees' perspective. It is hoped that the research would support these aspects and assist in generating a more welcoming and efficient safety culture in multicultural organizations [38][39]

Furthermore, selecting available sources using various criteria was essential for this research to ensure the appropriateness, meaning, study, and contentment of the sources. It was critical to ensure the relevancy of the materials that focused on the perceptions of safety, multicultural workplaces, or the collaboration among cultural kinds in the integration of safety; materials that are published in the past decade, although some fundamental materials will have to be involved; peer-reviewed sources to determine the academic significance of scientists; global sources, with additional focus on European and Danish platforms, research, and compositions to ensure the presented materials fit the intended context; a variety of quantitative and qualitative works to show the definition of the quality of the research materials; and; multi-industry perspectives but the focus on industries where the cultural representation is the highest. Lastly, only sources in English will be included to ensure accessibility and capture both international and local perspectives.

1.2.1 Conceptual Framework

It is essential to distinguish three dimensions of safety perception: the awareness, attitudes, and interpretations exposed by employees regarding what can be thought of as their physical psychological and organizational-safety (Bergheim et al., 2015). [40]

Physical safety includes clear identification of the potential hazards in the workplace, pursuing safety protocols and ensuring that protective attire is available to all employees.[41] Psychological safety is directly related to the capacity and willingness of the employees to voice their concern in this field, without fear of retaliation or discrimination [42] Organizational safety perception refers to the collective belief in an organization’s commitment to safety, which is formed by leadership practices, safety policies, and cultural norms. [41]

The aspects of safety perception vary between different industries and different types of employees. Such factors as risk, language barriers, and regulatory frameworks influence employees' safety perception (Hetherington et al., 2006) Such differences must be accounted for constructing active safety regulations towards diverse organizations.[41] [43]

1.2.2 Theories and Models of Safety Perception

1.2.2.1 Hofstede’s Cultural Dimensions and Safety Perception

We Consider Hofstede's model (2001) that provides a framework for understanding how cultural values influence workplace safety behaviors.[44]. Three key dimensions particularly persuades safety perception: [45]

Uncertainty Avoidance (UA): High UA cultures such as Germany, Japan exhibit preferences for structured safety protocols and strict obedience to rules, low UA cultures, like those in the United States and India, these countries take a more flexible approach to risk. (Bontempo et al., 1997). [41] Power Distance (PD): according to report OSHwiki, 2024, mentions that-in high PD cultures countries such as- China, Mexico employees may hesitate to question safety decisions made by authority figures, leading to failing to report of hazards. In contrast, Low PD cultures: Sweden and Denmark promote open conversations on safety-related matters [41] Individualism vs. Collectivism: Individualistic cultures like the U.S., the U.K. emphasize personal responsibility for safety, where collectivist cultures : China, Brazil focus on group safety, sometimes at the cost of personal well-being (Christian et al., 2009).[41]

1.2.2.2 Safety Climate Theory

In the Safety Climate Theory, Zohar's (2010) states that employees shared common exposure to safety policies influence their behavior. A strong, positive safety climate associated with better compliance with safety measures, particularly in multicultural workplaces where employees bring wide-ranging risk perceptions and work habits. [42]

1.2.2.3 Multicultural Organizations

Multicultural organizations refer to those with a workforce coming from different national, ethnic, and language background.[46] Since most of these organizations operate globally, they are faced with a need for adaptive strategies of harmonizing safety practice. The key characteristics of one are. first, Diverse Workforce [47]: the background of the employees culturally, influencing the perception of the work environment, and the hazards influence safety compliance. (Gyekye & Salminen, 2010). [48] Secondly there are Language and Communication Barriers: misunderstanding of the safety instruction given to fed different employees, towards increased work-related injury(Overgaard et al., 2023). [49] Lastly, there is Cultural Attitudes Toward Safety: The perception to strict compliance to the rules and those with flexible risk according to the varying culture (Ricci et al., 2021).[46] Global Operations: Multinational companies should line up with safety policies with international standards while accommodating local workplace norms. [46]Organizations need to address and implement inclusive safety training programs, widen multilingual safety communication strategies, and create a unified safety culture to tackle these challenges. [50]

1.2.3 Factors Influencing Safety Perception in Multicultural Organizations

1.2.3.1 Cultural Differences and Safety Attitudes

Cultural background also has a big impact on safety attitudes. Some cultures hold fatalistic assumptions that accidents are inevitable, leading to lower levels of perceived success of

preventive measures. (Håvold, 2007).[51] Others, in some nations, especially in those with strict occupational safety laws, safety is accepted as an inherent professional duty.[51]

Case studies also show how various national groups feel about safety. Research shows that North African workers feel less control over self-reported safety behavior ensues compared to European workers, while Eastern European workers opt to underreport safety hazards due to divergent levels of cultural acceptance to relatively high risk. (Ricci et al., 2021).[52]

1.2.3.2 Communication Barriers

The language barrier is another communication-related problem; employees may misinterpret safety guidelines due to the language by not having English understood, leading to misinterpretations of protocols and increased accident risks (Overgaard et al., 2023). [49] Language barriers: one of the major barriers that multicultural organizations meet. Workers who speak varying languages may have issues interpreting instructions, safety guidelines, and company practices, resulting in confusion and non-functions. The same companies must have multilanguage communication strategies involving images, translated materials, and languages courses. [35][36] A 2011 study in Safety Science reported a case of serious workplace accident in a distribution center in the Netherlands where 15 temporary workers from Eastern Europe sustained chemical related burns. While the safety data sheets were published in German language, language and other obstacles existed for the Romanian and Bulgarian workers which in combination led to the event. Some had misunderstood the picture warnings on the leaking containers because of different cultures in symbol recognition, and some did not report the leaking containers for fear of losing their jobs. [35] On safety training, misinformation arising from language and PPE sizing issues caused workers to wear ill-fitted protective clothing. An investigation by the EU-OSHA ruled that the company had used Google Translate to translate safety manual and had assumed that "common sense" would make up for language and cultural barriers. More crucially an organisation that was bereft of culturally sensitive safety leadership led to ineffective communication and awareness of risk by the workers. [35] [36]

A study on the differences in understanding safety protocols has proposed several solutions that prevent the issue: Multilingual safety training programs, Visual safety materials (e.g., pictograms, videos), The use of interpreters and peer-to-peer mentoring [53]

1.2.3.3 Leadership and Safety Climate

Like Cultural difference and Communication barriers, Leadership plays a pivotal role in determining workplace safety culture. Transformational leadership, is based on motivation, inclusivity, and empowerment, that has been shown to be more effective in promoting safety engagement among diverse teams than authoritarian leadership (Gyekye & Salminen, 2010).[48] Strategies in multicultural organizations which include encouraging open communication about safety concerns, recognizing cultural variations in risk perception, actively involving employees in safety decision-making processes are considered as effective leadership strategy.

Strong safety management climate, for instance, management enforcing and promoting safety regulations all the time, is associated with increased safety compliance and low accident rates. (Mearns et al., 2003). [41] [54]

1.2.3.4 Regulatory and Legal Considerations

Considering Multinational organizations could be able to navigate diverse regulatory frameworks, which can present compliance challenges. Safety regulations vary significantly across countries, requiring the development of synchronized policies aligned with international safety standards (Håvold, 2005). [42] Organizations operating across multiple jurisdictions should realize the following issues: According to OSH, differences in national occupational health and safety laws, Challenges in implementing equal safety practices across culturally diverse teams, The need for consistent yet adaptable training programs that should involve both country specific and general aspects.[49]

1.2.4 Literature Review on Methodologies

It is essential to understand the methodological approach used to assess the reliability and validity of the new knowledge. In this review, three studies' has been focused on the methodology used in the context of the research question: one investigating cross-cultural differences in risk perception, another analyzing safety behaviors among employees in Ghana's beverage manufacturing industry, and a third focusing on safety perceptions within the maritime industry.

Bontempo, Bottom, and Weber (1997) worked on a study evaluating the differences in the perception of financial risk across cultures. Their study included students from two American universities, a Dutch university, a university in Hong Kong, a university in Taiwan, as well as Taiwanese security analysts. All participants assessed 30 monetary lotteries which were to be graded from 0 to 100. In this study, the Conjoint Expected Risk (CER) model was used to quantify risk judgments which meant measuring the monetary lotteries in the form of tournaments and assigning them a value determined by their outcomes. The researchers ensured cultural and linguistic precision through complex survey instruments employing back-translation. [47]

The results emerged from the research studies and fill in certain gaps pertaining to safety behavior and risk perception in various industries and cultures. The cross-cultural study indicated that perceptions of risk differ greatly among Western and Asian cultures. Respondents from Hong Kong and Taiwan placed greater weight on potential losses compared to their Western counterparts. This highlights the fact that cultural differences influence the financial assessment of risk, as well as the decisions taken afterward [47]

Quartey (2017) conducted a study on how employees' safety behaviors (ESBs) and the impact of organizational culture within a beverage manufacturing industry in Ghana. Quartey used a quantitative survey-based approach to conduct the study. The author selected four beverage manufacturing firms through random sampling and identifying 400 employees with at least three years of experience using purposive sampling. Data collection were drawn from a questionnaire

measuring safety behaviors through compliance and participation perspectives by using Neal et al.'s (2000) scale.[47] and was assessed with Van der Post et al.'s (1997) scale. The study conducted simple regression analysis and postulated that there were four significant determinants of safety perceptions and used responses from 197 valid questionnaires, with a response rate of 49%. [53] According to the findings of the Ghanaian study, organizational culture significantly influenced employees' safety behavior. Employees had a positive perception of safety compliance. The study also determined the safe working environment, job satisfaction, and safe leadership were four specific determinants of safety compliance and participation. An organizational culture that promoted safety was also an overarching factor that contributed to safety in the workplace [53] All these studies show the central role of multiple cultural, organizational, and psychological factors employed in shaping perceptions of safety and behavior. Future research needs to incorporate multiple perspectives into interdisciplinary research projects along with risk assessment. [5]

In conclusion, the review of the literature on workplace safety perception in multicultural organizations showed a complex interconnectedness between cultural diversity, communication and the nature of safety practices. Even language barriers, leadership behaviors and attitudes to regulation have additional impacts on how employees are motivated to follow safety protocols. [55] At the same time, studies also emphasize the importance of safety climate, use of effective communication and leadership to develop the culture of share safety in multicultural workforces[56] In the future, interdisciplinary approaches, including psychology, sociology and organizational behavior should all be integrated to investigate the phenomenon completely.

1.3 Problem formulation

As earlier mentioned, today's globalized work environment, cultural diversity is increasingly prevalent, particularly in Danish workplaces, [1] [2] while this diversity brings numerous benefits, it also introduces challenges, especially in the field of workplace safety (Clarke & Robertson, 2005; Goh et al., 2010)[19][21]. Existing research has explored various aspects of multiculturalism and workplace safety separately, including the impact of cultural diversity on safety perceptions and behaviors (Mearns & Yule, 2009; Fang & Wu, 2013),[20][6] challenges in communication and risk management (Borys, 2012; O'Toole, 2002),[18][25] and the influence of national culture on safety climate and performance (Zohar, 2010; Hofstede, 2001). [23][26] However, there remains a significant gap in understanding how cultural backgrounds specifically shape safety perceptions and behaviors in multicultural workplaces (Gyekye & Salminen, 2005; Kines et al., 2013). [22][24]

Despite prior studies on general workplace safety and multiculturalism, there is limited research on how workers from different cultural backgrounds perceive and respond to workplace risks in Danish organizations. [27] Additionally, little is known about the primary barriers to effective safety communication and compliance in culturally diverse workplaces or the effectiveness of strategies that companies implement to address cultural differences in safety perceptions.[28] [29] These gaps underscore the need for further investigation into the intersection of cultural

diversity and workplace safety, particularly in Denmark, where the workforce is becoming increasingly multicultural. [30] The knowledge of differences in the perception of safety between cultural groups is fundamental to advancing the effectiveness of compliance to safety, the improvement of safety performance and inclusive, developed and effective safety drill and communication strategies. [31] Some of the challenges addressed include workplace safety and inclusivity, which in turn benefits all of the company's employees.

1.3.1. Research Objectives

This study aims to:

1. Explore how cultural backgrounds effect safety perceptions and behaviors in Danish workplaces.
2. Identify key challenges to effective safety communication and compliance in multicultural settings.
3. Assess the effectiveness of workplace safety strategies in addressing cultural differences.
4. Provide recommendations for improving workplace safety management in multicultural organizations.

1.3.2. Research Questions

Initial Research Question

- How do workers from different cultural backgrounds perceive and respond to workplace risks and safety measures in Danish companies?

Sub-Questions

1. What are the primary barriers to effective safety communication and compliance in culturally diverse workplaces in Denmark?
2. What strategies do companies implement to address cultural differences in safety perceptions, and how effective are these strategies from the workers' perspective?

1.4 Outline of the Report

The purpose of this thesis was to investigate safety perceptions in multicultural organizations in Denmark and to examine to contribution of cultural background to safety attitudes and behaviors at work. The investigation is structured in different chapter where each sends an essential component to form the research

Chapter 1: Introduction- This chapter presents primarily the concept of psychological safety, risk perception, and multiculturalism challenges in occupational safety are highlighted in diverse background. In the subchapters, motivation behind this study is mentioned. On the other hand, state of art entails a thorough examination of existing research related to safety perception, organizational multiculturalism, and the psychological and social notions of workplace safety. Various journal is applied to some of current theoretical frameworks of safety including Hofstede's (2001) work on Cultural Dimensions and Zohar (2000) and Zohar and Hofman (2012) work on Safety Climate Theory, Ricci's (2021) work on cultural attitude towards safety on highlighting influencing factors on perception of safety such as language barriers, management practices and cultural mentalities. It also reviews methodological technique employed to similar studies, laying theoretical and empirical groundwork for the current study. The problem formulation along with its objective and research questions strengthen the groundwork by mentioning research gaps based on theoretical and practical relevance.

Chapter 2: Contextual background contains three subchapters referring to Danish occupational health and safety legislation, the existing Danish model and labor market and organizational selection and multicultural context. This chapter highlights legislative frameworks in Denmark that is considered as context background in the research study.

Chapter 3: Methodology: This chapter presents the research design used and presents quantitative research, using surveys providing the means for collecting quantitative data. It outlines fieldwork, data collection procedures, participant recruitment, survey questionnaire and distribution procedure. Thus, the methodological tools, including cross-tabulations, chi-square tests, frequencies, trends and charts, are described to allow for transferability and the reporting of findings. The methodological decisions are explained in terms of the research goals and the multicultural nature of the study.

Chapter 4: Results: Information resulting from the survey is reported in the results section, specifically in the statistical summaries and interpretive considerations. It includes participant demographics, the extent to which participants are citizens, participant safety communication preferences and core safety attitudes and behaviors. Graphs and tables are combined with qualitative responses to provide a deeper insight into communication problems and cultural influence.

Chapter 5: Risk analysis tools like Risk Matrix and FMEA are also treated in the chapter in order to provide background to the hazard identification in safety perception. Also, quantifying the risk with RPN (Risk Priority Number) for developing mitigation strategies.

Chapter 6: Discussion: This chapter highlights the findings relevant to the study questions and existing literature. It discusses the effect of culture in exposing the gaps between what is done now and what's good for the employee in terms of safety. The risk assessment tool is consequently associated with the risk analysis tools' results, to suggest practical implications on safety improvement within a multicultural context.

Chapter 7 and 8: Implications and Recommendations and Conclusion: The chapter brings together the main empirical results and implications for theory along with practical implications. It provides practical recommendation for organizations who are trying to improve the health and safety of their workers in a culturally diverse environment.

Therefore, the final overview of the whole study, its key findings, and the lessons learned during the entire research process are all included in the conclusion chapter.

Chapter 9and 10: Scopes and Delimitations and Future research: The chapter outlines the scope and delimitations, explaining the geographical, cultural and methodological focus of the study. Recommendations for future research are also presented, indicating where research may inform wide-ranging safety initiatives.

Chapter 11 and 12: Reference and Appendix: All the cited sources has been illustrated as a list of reference by using IEEE citation style (Institute of Electrical and Electronics Engineering). The references include; publications and reports, books, journals, podcast and websites.

Additionally, the survey questionnaire that served as the basis for the whole data collection process is included in appendix A.

2. Contextual Framework

2.1 Danish Occupational Health and Safety Legislation:

Denmark has a long history of worker protection dating back to 1873 when the Danish Working Environment Authority (*Arbejdstilsynet)* was established to supervise compliance with worker protection laws. [13] The current Danish Working Environment Act, passed in 2010, functions as a framework legislation that establishes the general objectives and requirements for workplace safety and health. [13]

This Act aims to create "a safe and healthy physical and psychosocial working environment which is at all times in accordance with the technical and social development of society". It also provides the basis for the initiatives to independently handle health and safety, in cooperation with the employer and employee organizations and under supervision by the Working Environment Authority. [14]

And it can even be carried through that the foreign workers are not to be worse off than the Danish workers because Danish workers and foreign workers are both covered by the national legal rules within the Regulatory Framework of the Danish model. The Working Environment Authority also point out that-As a foreign worker in Denmark a person has the right to a safe and healthy working environment as all other Danish workers. Such is the same principle of equality in all other respects which is the good management of labor protection of workers regardless of origin. [15]

2.2 The Danish Model of the Labor Market

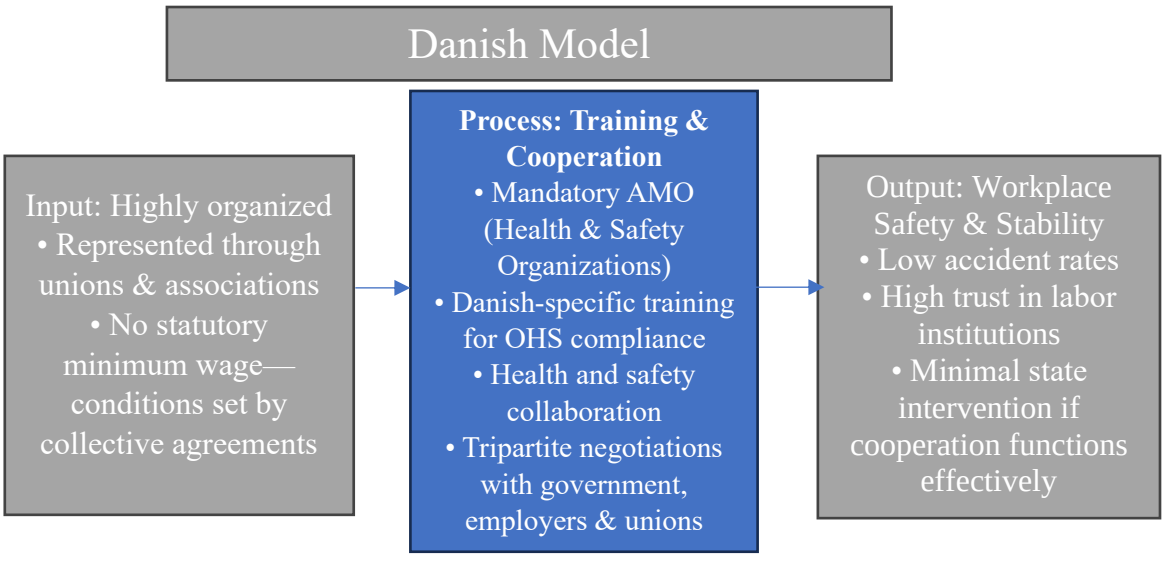

Fig 1: The Danish Model of the Labor Market

The description of in-between roles between the state and the social assosiates of businesses and employees is the basis of a particular "Danish Model" of the labor market. [16] Danish workers and employers, who are part of powerful unions and organizations that negotiate the conditions of work for them, input into this system. Denmark is, remarkably, without a minimum wage, the setting of pay and conditions being mainly a matter of collective negotiating or individual agreement with a significant level of cooperation and organization involved. [16]

The system's central function includes structured training, safety communication, and cooperation mechanisms. For example, all businesses must involve employees in workplace health and safety activities, and companies above a certain size are required to establish formal Health and Safety Organizations (AMO). [15]

Moreover, people who have had instruction in foreign anti-accident techniques must undergo additional training in Denmark and receive a Danish certificate of competence, illustrating the significance of culturally and contextually sensitive safety education. [15] This system is helped by cooperation between three parties: the government, the trade unions, and the employer organizations in job-placement, work-environmental maintenance, and unemployment insurance.[17] The primary outputs of this system are enhanced workplace safety and overall labor market stability. Because the model is designed to be largely self-regulating, government intervention is minimal as long as employers and employee organizations are able to resolve issues responsibly through established mechanisms. [15]

2.3 Organizational Selection and Multicultural Context

The organizations were all known to be multicultural workplaces in Denmark, selected due to the diverse employee orientation and the relevance for the research theme on safety perceptions across cultural groups. The criterion for selection was based on a presence of Danish and non-Danish employees, observed use of English as a language in workplace communication, and possibility for survey handing out. These was a relevant setting in which to examine how culture may influence perceptions of safety, communication and compliance in real life settings.

3.Methodology

The purpose of the methodology chapter is to outline the research design, data collection procedures, and analytical methods used to investigate how cultural backgrounds influence safety perceptions and behaviors within Danish multicultural organizations. The section ensures transparency and replicability by detailing the systematic steps taken to answer the study's research questions and meet its objectives.

3.1 Research Design

A survey research design was employed to deal with the complexity and the multidimensional nature of safety perception in multicultural contexts. It offers a variation of assessment techniques as some of which can provide insights that a qualitative approach alone cannot be used to analyze.

While the nature of the questions was closed-ended, interpretation of response patterns and cross-tabulations made it possible to extract themes and insights, taking into account generalizable trends and statistical relationships, the qualitative component questions that had multiple format responses being used to gain further insight in the individual experiences and perspectives.

In this study, the survey research design seems to be suitable for many reasons. First, safety perception is informed by both observable actions and subjective perceptions of those actions and these concepts need two different types of data to be robustly examined. Second, the cultural factors at work in safety communication and compliance cannot be easily measured without a narrative context as well. By combining qualitative data with narrative stories, the research not only captures what participants think and do, but why—lending it a degree of depth.

The questionnaire was designed with SurveyXact - an online tool for programming surveys with assisting features for structuring and multi-format questions. The data was subsequently imported to SurveyXact and further statistical processing was performed in Microsoft Excel, R-studio including generation of tables, charts and the production of summary statistics.

3.2 Data Collection Procedure

The selection of participants was based on their availability and willingness to participate, which was essential given the study's limited resources and organizational agreement. Around twenty-three to thirty-three participants finished the survey.
Participants worked in a variety of roles inside the organizations, including staff, technical emplo yees, supervisors or administrators, project managers, and researchers.
This diversity made sure that the voices gathered covered a broad range of opinions regarding str uctures and safety in an evolving culture.

A quantitative online questionnaire designed to gather information on the safety perceptions, wor kplace experiences, and cultural backgrounds of workers in Danish multicultural industries serve d as the research method for this study. There were three sections to the survey. For instance, Section 1: Questions about Demographics:
These inquiries focused on important background demographic data, including age and nationalit y, years of employment in Denmark, job duties, and preferred language for receiving safety instr uctions.
The respondents were categorized into pertinent subgroups for comparison in this section (e.g., D anish respondents vs. non-Danish respondents).
Using standard Likert scales, participants were asked to rate their agreement or confidence in a n umber of safety-related items.
The objective was to determine whether cultural background will have an impact on behavior rep orting, attitude toward safety communication, and safety communication. Multiple-Response Questions for More Depth: While some traditional open-ended questions were not part of the survey, there were several items that permitted more than one response to better capture the complexity of safety communication difficulties. These questions allowed for the elicitation of views, such as types of communication barriers or the utility of safety measures.

3.2.1 Participant Selection The selection of the participants was determined based on availability, as well as their desire to participate, which was a pre-condition in the background of limited resources for the study and the organizational acceptance. A total of 33 individuals took part, of whom 23 respondents completed the survey. Participants had diverse positions in the companies, such as staff, technical job-holders, administrative or managerial, project managers, and researchers. This variety ensured the voices collected addressed a wide array of views on safety in a diverse world.

3.2.2 Distribution Method The survey was disseminated digitally in a protected anonymous online format as a combination of direct email invitations and direct digital links, to unique groups of stakeholders and organizations. Respondents were advised and reassured about confidentiality according to ethical guidelines for research.

Although attempts were made to engage more organizations at the outset, time was an issue. Yet the responses we have collected provide valuable and insightful information on safety perception in a multicultural workforce.

3.3 Data Analysis

3.3.1 Quantitative Analysis:
The survey data was primarily analyzed quantitatively, with an emphasis on statistical trends, cor relations, and patterns in the responses.
The impact of cultural backgrounds on safety perceptions in multinational corporations was exa mined using a variety of approaches. To find out if there were any correlations between the categorical variables (like language choice and communication comfort), the Chi-square test of independence was performed.
Additionally, this helped to shed light on the potential connections between demographic traits a nd views on safety through cross tabulation. Additionally, the statistical test, descriptive analysis was also shedding light on the general behavior of the data. This involved the application of

percentages and frequencies to present responses. Pie charts and bar charts for graphical representation of distribution and comparison. Cross-tabulations to analyze the responses of different subgroups, thus offering insight into how culture may influence perceptions of safety.

3.3.2 Qualitative Analysis

The qualitative standpoints were derived from multiple- response question analysis. These questions enabled the respondents to choose multiple answers to more accurately capture complex experiences, such as recognizing barriers of communication or successful safety strategies. These responses were analyzed as follows: Frequency counts to get the frequency of each item. Pie and bar graphs are used to identify important themes and patterns in the responds from the participants. The approach gave an operational method to derive rational information from organized survey data.

3.4 Risk Assessment Tools Used

Risk Matrix: A 5×5 risk matrix was used to categorize identified hazards built on two axis: severity ranging from insignificant to severe and likelihood ranging from rare to almost certain. The values were allocated according to participant feedback and survey data. The matrix visually represented the level of risk associated with each factor, such as time and workload pressure or training gaps, supporting strategic decision-making for risk mitigation. [60]

FMEA (Failure Modes and Effects Analysis) An FMEA model is used to determine the risk of failure for stages involved in a process by identifying possible points at which failures could occur, and then weight these with due consideration of severity, occurrence and detection. [57] In this study, FMEA was utilized in this study to evaluate safety communication problems in multicultural organizations. It helped identify critical risks such as language barriers, unclear instructions, and hesitation to speak up. Each issue was scored to calculate a Risk Priority Number (RPN), which enabled prioritization of the most vital areas for improvement. [58] [59]

4. Result

The chapter is an analysis of the data gathering process for the multicultural organization perceptions of safety study. It captures the nature of the data, the analytical approaches employed, and the interpretation of the results.

The observed data for the study are collected from a survey of employees in culturally mixed Danish organizations. The survey had been developed to establish a variety of views about safety at work such as attitudes, behaviors, and perceived obstacles and aids in the field of culturally sensitive safety.

A questionnaire was applied with a survey approach. Some of the questions were categorical and numeric, so that a quantitative estimation such as- chi-square test, descriptive statistics can be used to establish significance, inclinations, and relations in the survey answers. Moreover, the questionnaire was essentially designed with multiple-response questions and was used for analysis and interpretation, thus identifying in greater depth how cultural background affects safety perceptions. This methodological pattern provides quantifiable outcomes as well as an explanation of participants' experiences.

4.1. Participant Demographics

The section offers a profile of the survey participants, who are described in terms of nationality and cultural background, years working in Denmark, role in the organisation, and language skills and preferences in terms of safety communication.

4.2. Nationalities and Cultural Backgrounds

The participant group represented a diverse range of nationalities and cultural backgrounds. Among the 33 respondents, 12 identified as Danish citizens and 21 as non-Danish citizens. When they are being asked whether their cultural background aligns more with their citizenship, country of birth, or both, the majority (78.8%) indicated that both equally influence their cultural identity, while 12.1% aligned more with their citizenship and 9.1% with their country of birth.

Table 1. Cultural Background Alignment of Participants

Alignment	Percentage	Number of Respondents
Citizenship	12.1%	4
Origin of birth	9.1%	3
Both equally	78.8%	26
Total	100%	33

Table 1. Cultural Background Alignment of Participants

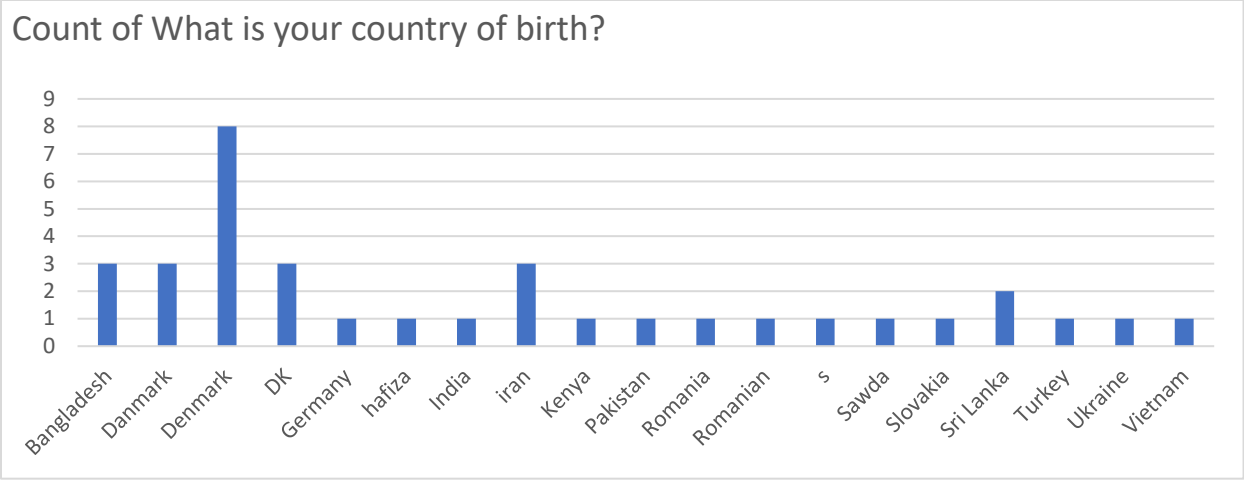

Figure 2: *Bar Chart Showing Respondents' Countries of Birth*

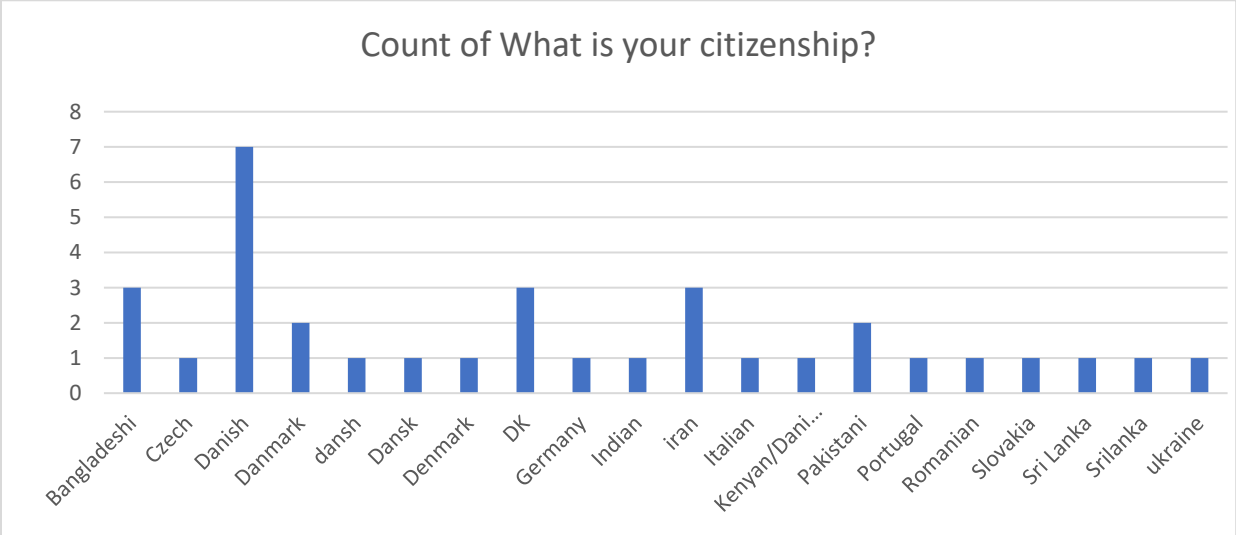

Figure 3: Bar Chart Showing Respondents' Citizenship

4.3. Years of Experience in Denmark

Participants were differentiated by their length of work experience in Denmark. Of the 31 respondents to this question, over half (54.8%) had worked in Denmark for more than five

Table 2: Years of experience in Denmark

Table 2. Years of Experience in Denmark

Experience Duration	Percentage	Number of Respondents
Less than 6 months	0%	0
6 months – 1 year	3.2%	1
1 – 3 years	32.3%	10
3 – 5 years	9.7%	3
More than 5 years	54.8%	17
Total	100%	31

years, 32.3% for one to three years, 9.7% for three to five years, and only 3.2% for six months to one year. No respondents had worked in Denmark for less than six months.

4.4. Job Roles

The survey captured a range of job roles within the participating organizations. Among 23 respondents, 34.8% identified as staff, 17.4% as technical staff, 8.7% as administrative employees, 8.7% as managers, 4.3% as project leaders, and 26.1% selected "other," which included roles such as Trainee, Ph.d. Student, Academic, Researcher and Student assistant

Job Role	Percentage	Number of Respondents
Staff	34.8%	8
Technical staff	17.4%	4
Administrative	8.7%	2
Manager	8.7%	2
Project Leader	4.3%	1
Other	26.1%	6
Total	100%	23

Table 3: Job Roles of Participants

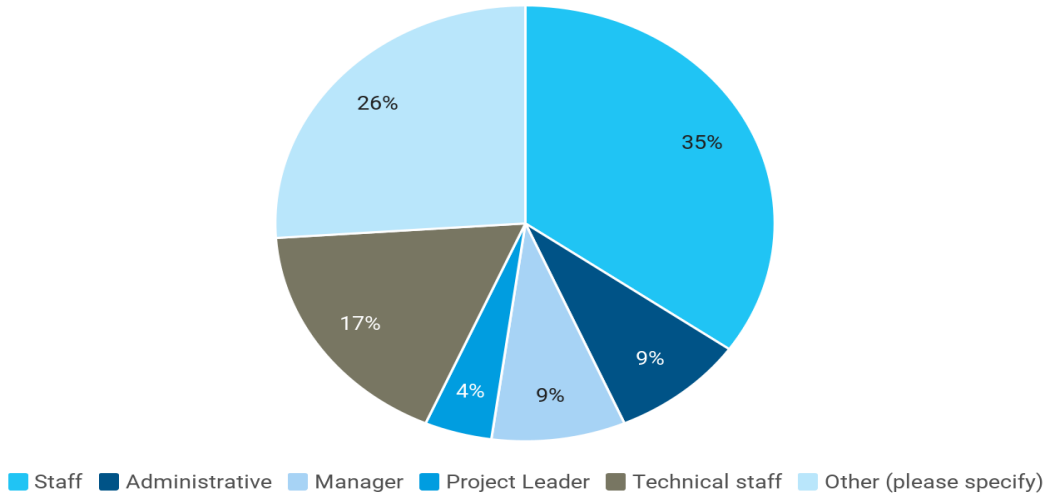

Figure 4: Pie Chart Showing Job Roles in Denmark

4.5 Language Proficiency and Preference

Language preference were also part of the assessment and a significant factor. Among 23 respondents, 78.3% reported feeling most comfortable and confident receiving safety instructions in English, 4.3% in Danish, and 17.4% selected "other," often specifying both English and Danish. No respondents preferred their native language exclusively for safety communication.

Preferred Language for Safety Instructions

Language	**Percentage**	**Number of Respondents**
English	78.3%	18
Danish	4.3%	1
Other (e.g., both)	17.4%	4
Total	100%	23

Table 4: Preferred Language for Safety Instructions

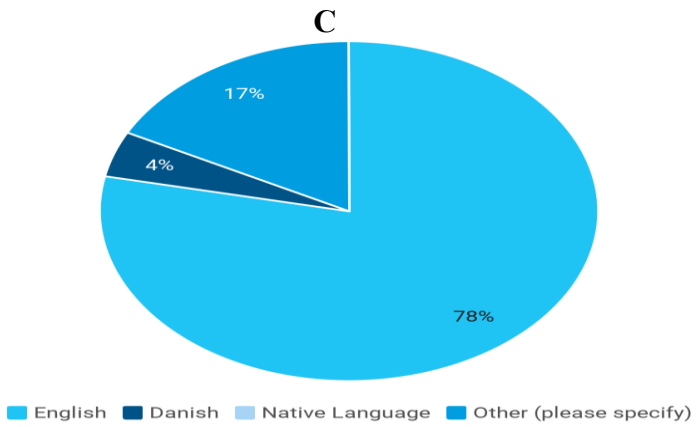

Figure 5: Pie Chart demonstrating Preferred Language for Safety Instructions

Therefore, the participant group in this study was culturally diverse, with a majority having significant work experience in Denmark and occupying a variety of roles within their organizations. In addition, English was the dominant language preference for safety communication, reflecting the multicultural and international nature of the workforce.

4.6. Perception of Safety

One of the key focuses of the survey was to evaluate participants' confidence in reporting safety concerns at work. A considerable majority (69.6%, n=16) stated feeling "very confident," where an additional 21.7% (n=5) indicated they were "somewhat confident." Only 8.7% (n=2) expressed a "neutral" standpoint. Notably, no participants reported feeling "not very confident" or "not confident at all." These findings suggest a generally strong sense of confidence regarding safety communication within the surveyed organizations.

Confidence Level	Percentage	Number of Respondents
Very confident	69.6%	16
Somewhat confident	21.7%	5
Neutral	8.7%	2
Not very confident	0%	0
Not confident at all	0%	0

Table 5: Confidence in Reporting Safety Concerns

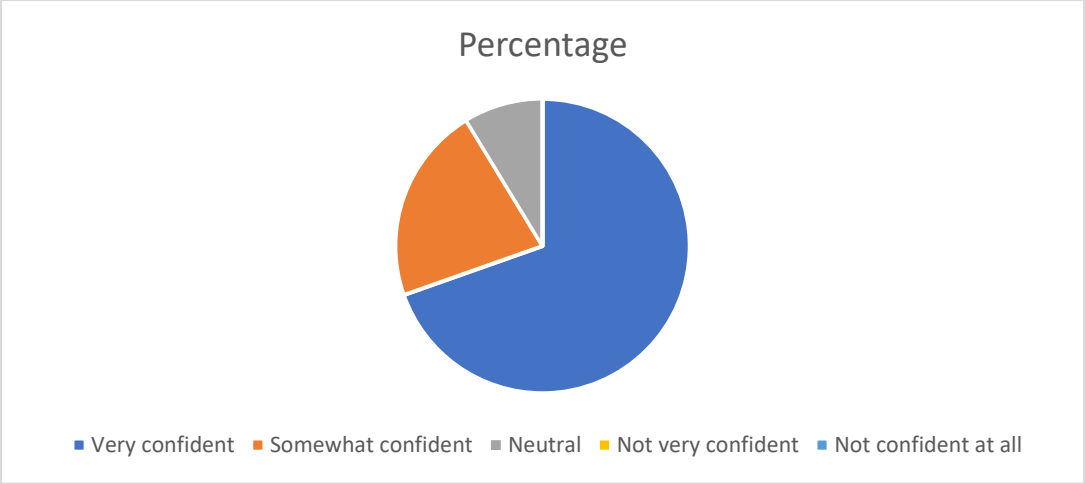

Figure 6: Pie Chart demonstrating Confidence in Reporting Safety Concerns

4.6.1. Differences by Nationality and Years in Denmark

To explore whether confidence levels differed according to nationality or duration of dwelling in Denmark, cross-tabulations were conducted.

Nationality: Among Danish citizens (n=12), the majority reported being "very confident," reflecting the overall pattern. Among non-Danish citizens (n=21), confidence levels were similarly high, with no significant differences observed between the two groups.

Confidence Level	**Danish Citizens (n=12)**	**Non-Danish Citizens (n=21)**
Very confident	9	7
Somewhat confident	2	3
Neutral	1	2
Not very confident	0	0
Not confident at all	0	0
Total	12	12

Table 6: Cross-tabulation of Confidence Level with Nationality

Years Worked in Denmark: Participants with more than five years of experience in Denmark (n=17) overwhelmingly reported high confidence. Those with one to three years (n=10) and three to five years (n=3) of experience also indicated strong confidence, with no respondents in any group selecting the lowest confidence categories. The single respondent with six months to one year of experience reported being "somewhat confident."

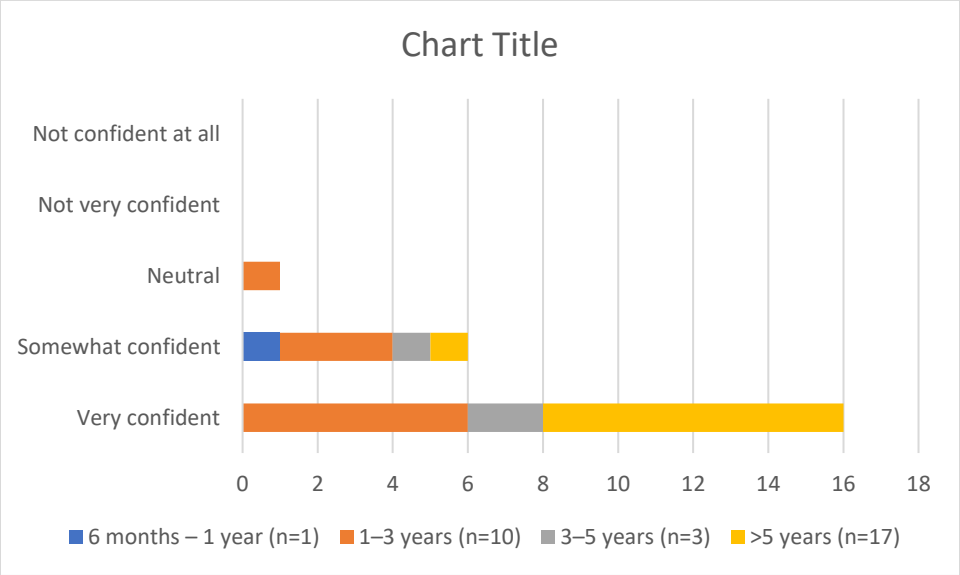

Figure 7: Clustered bar chart comparing confidence levels by years of experience in Denmark.

As a result, most participants had high confidence in raising safety concerns, regardless of their country or duration of stay in Denmark. According to qualitative comments, the positive culture is facilitated by inclusive training, multilingual communication, and supportive management. Minor uncertainties were noted among recent arrivals, indicating the value of ongoing orientation and support for new employees.

4.7. Communication and Compliance Barriers

This section explores the potential relationship between employees' preferred language for receiving safety instructions (Question 8) and their comfort level in asking questions about safety (Question 12). The aim is to investigate whether language preference influences an employee's willingness to engage in safety communication.

Null Hypothesis (H_0): There is no significant relationship between preferred language and comfort level in asking safety questions.
Alternative Hypothesis (H_1): There is a significant relationship between preferred language and comfort level in asking safety questions.

To test this relationship, a Chi-Square Test of Independence was performed using data collected from the survey. To compare responses with different language groups and levels of comfort, a contingency table was created.

>print(table_data)

	Always	Never	Often
Danish	0	0	1
English	13	1	4
Other	1	0	0

> print(chi_result)

Pearson's Chi-squared test

data: table_data

X-squared = 3.5079, df = 4, p-value = 0.4767

The results of the Chi-Square Test showed a test statistic of $X^2 = 3.5079$ with 4 degrees of freedom and a p-value of 0.4767. Since the p-value> 0.05, we accept the null hypothesis.

This result indicates that there is no statistically significant association between preferred language and comfort in asking safety questions. However, further research with a larger and more balanced sample could help clarify whether more refined patterns exist.

The survey also sheds light on the communication challenges and compliance issues faced by a multicultural workforce, particularly when it comes to safety communication. A focused analysis of Question 13 highlights key obstacles that may hinder the effectiveness of safety communication and overall workplace compliance.

Question 13 asked respondents to identify the biggest barriers to effective safety communication. The most frequently cited barrier was ***Time and workload pressure*** responded by 17 people, indicating that operational demands may limit employees' capacity to fully engage with safety communications. This was followed by ***Hesitation to speak up about safety concerns*** (13 responds), a potential indicator of psychological safety issues or hierarchical communication gaps within organizations.

Other prominent barriers are ***Unclear and confusing instructions*** *(*12 responds*)*, ***Difficult technical words*** (12 responds*)*, ***Language barriers*** (11 responds)

These findings point to a substantial challenge in the clarity and accessibility of safety-related communication. Linguistic complexity and the use of highly technical language can alienate non-native speakers or those without advanced training. Additionally, ***training gaps*** (9 responds), differences in ***education level*** (5 responds), and ***cultural differences in safety perceptions*** (5

responds) further exacerbate these issues, suggesting the need for culturally sensitive and linguistically simplified materials.

The analysis shows that communication and compliance challenges are complex — they go beyond language and include factors like workload, education levels, and cultural differences. Improving safety communication and compliance means addressing all of these areas together.

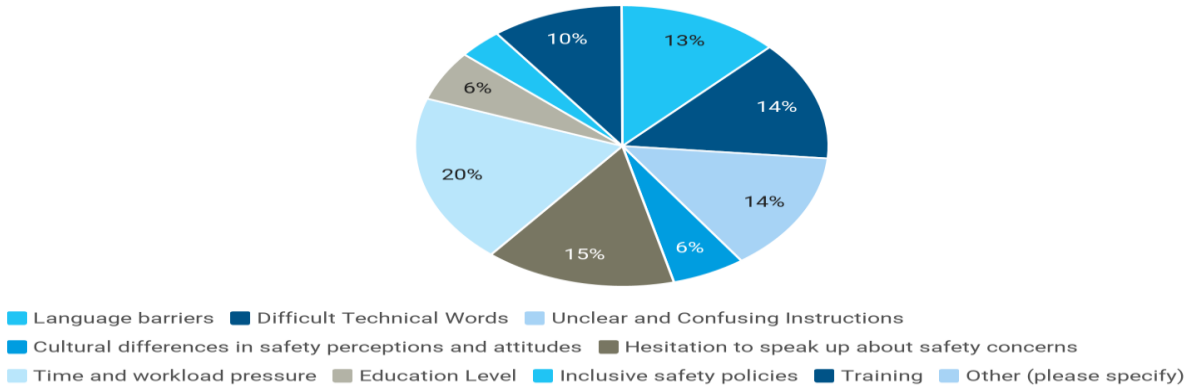

Figure: 8: Pie Chart showing the biggest barriers to effective safety communication

4.8. Effectiveness of Strategies

Question 10 of the survey aimed to identify the primary methods through which safety information is communicated within the workplace. Respondents were allowed to select multiple methods, reflecting the diverse strategies organizations use to convey safety-related messages.

The data revealed that the most commonly used communication methods included:

Verbal instructions, Written documents, Safety training sessions, Signs and posters, Online courses

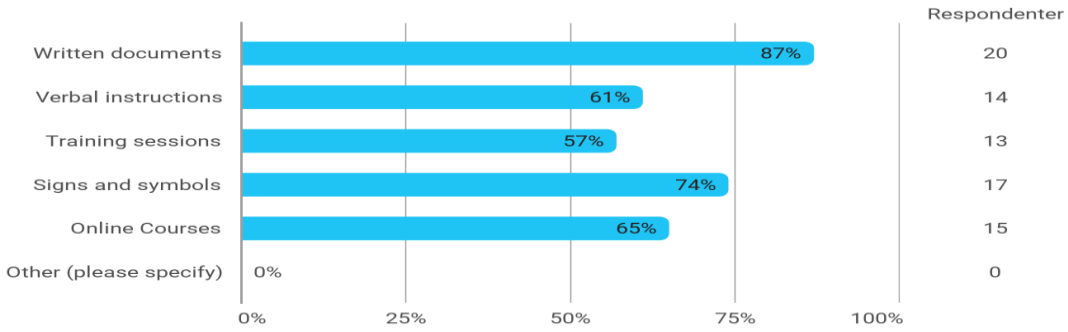

Figure 9: Bar Chart for commonly Used Methods for Safety Information in the Workplace

This distribution suggests that employers are utilizing a multimodal communication approach to reach workers with varying learning preferences and language abilities.

With giving the consideration of existing safety communication method, question 16 invited participants to suggest or identify strategies that can effectively address communication and compliance challenges in multicultural and multilingual work environments. A wide variety of approaches were mentioned, indicating that respondents recognize the complexity of these issues.

The most frequently cited strategy was:

Using digital platforms and mobile apps with a translation function, which was mentioned multiple times. This suggests that respondents see technology as a practical and scalable tool to deliver multilingual safety information.

Other strategies Safety training in multiple languages, Using images and symbols, encouraging peer support (coworkers helping each other), Translating safety documents, Giving culturally relevant examples

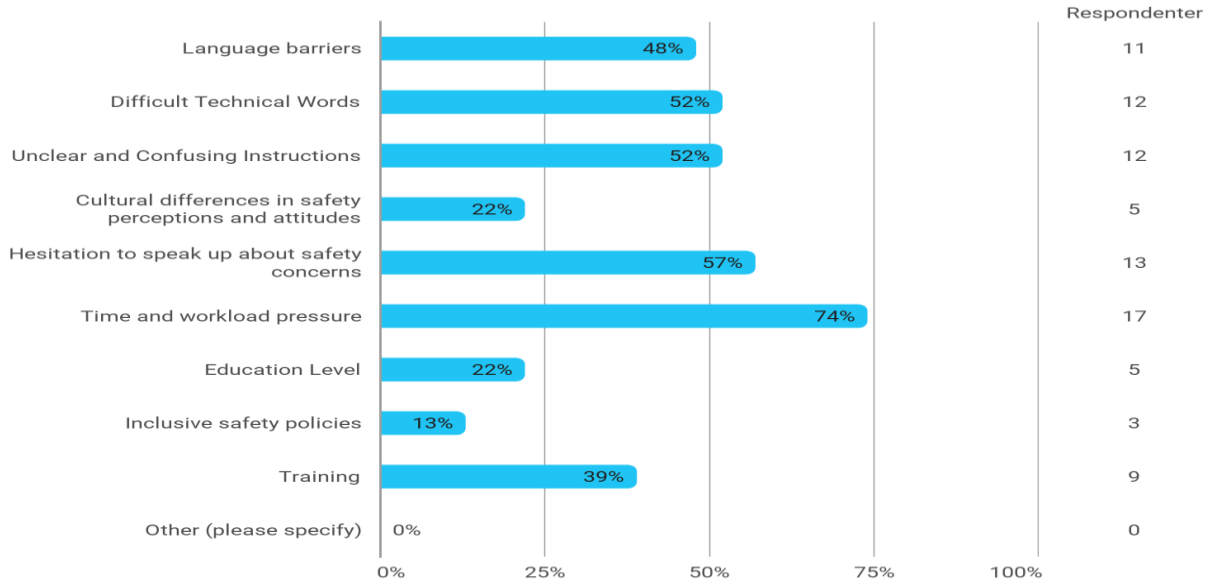

Figure 10: Bar Chart for strategies implemented to improve safety communication for a diverse workforce

This diversity shows that workers and possibly managers are aware that no single method is sufficient, and that an inclusive, multimodal communication system is necessary. The responses reflect a need for both technological innovation and human-centered communication, like peer mentoring and culturally sensitive training content.

To the expansion, Question 17 focused more directly on how to make safety information more accessible for workers with different language needs. Several overlapping themes emerged, reinforcing the findings from Question 16.

Frequent responses included Using simple language in safety materials, More visual aids (e.g., diagrams, videos, pictograms), More training in multiple languages, Interactive workshops and leadership engagement

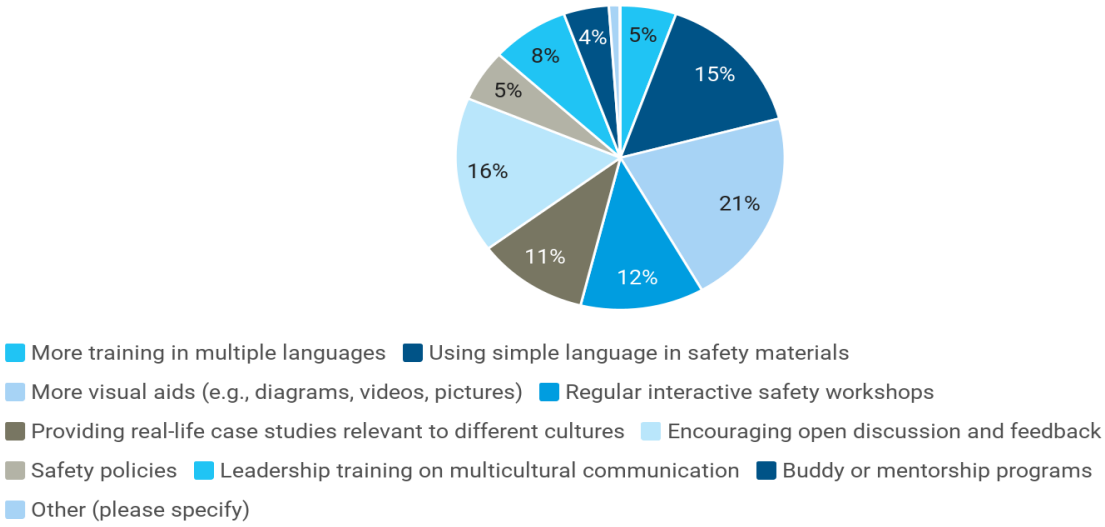

Figure 11: Pie Chart illustrating additional strategies to enhance workplace safety communication

An emphasis on plain language signals a recognition that translation itself is insufficient, that materials must be written in a more understandable manner, based on plain language principles. Visual aids were also cited numerous times, reflecting a mutual agreement that images and videos are very often a better way of communicating than text, particularly across language barriers.

A few answers made mention of leadership participation and interactive education, which means trust and engagement are also elements to successful safety communication.

4.9. Cultural Influence

- Danish vs Non-Danish overviews of response on Question 9 ("Do you think that your cultural background affects how you think about safety at work?):

Citizenship	Yes	No	Not sure	Total
Danish	3	1	1	5
Non-Danish	10	2	6	18

Table 8: Citizenship vs. Cultural Background Influences

Of the non-Danish citizens, a majority (55.6%) thought that their cultural background affects their perception of what is safe at work, 33.3% unsure, and 11.1% disagreed. Danish population was a bit more affirmative, with 60% of the population answering "Yes," and 20% answering "No", and 20% being unsure.

So, both groups predominantly believe cultural background influences safety perceptions, but non-Danish citizens show greater uncertainty (33.3% "Not sure" vs. 20% for Danish). The higher "Yes" rate among Danish citizens (60%) might reflect awareness of cultural differences in a multicultural workplace, despite their majority status in Denmark.

These results suggest that both groups largely recognize the impact of cultural background on safety perceptions. However, non-Danish citizens showed more uncertainty, possibly reflecting diverging experiences or level of adaptation in the Danish work environment. Interestingly, the relatively high agreement among Danish citizens may indicate an awareness of cultural diversity and its influence within a multicultural workplace, even though they represent the majority population in Denmark.

Statistical significancy:

Ho: There is no influence of citizenship (Danish vs. Non-Danish) with cultural background.

H1: There are influence of citizenship with Cultural Background.

Chi-square statistic (χ^2):

- **Expected Frequency Calculation**: For each cell in the table, the expected frequency is calculated using the formula:

$$E=\frac{(\text{RowTotal})\times(\text{ColumnTotal})}{\text{GrandTotalE}}$$

- **Chi-square Statistic Calculation**: The Chi-square statistic is calculated as:
  - $\chi 2=\sum(O-E)2/\ E=0.48$
  - **Degrees of freedom (df):** $df=(r-1)\times(\ c-1)=2$
  - **p-value:** 0.787
  - **Expected frequencies:**
    - Danish: [2.83, 0.65, 1.52]
    - Non-Danish: [10.17, 2.35, 5.48]

  Since the p-value is much greater than 0.05, There is no influence of citizenship (Danish vs. Non-Danish) with cultural background.

5.Risk Assessment

Risk assessment is the science-based component of risk analysis that addresses questions about risks that require management [61]
There are four fundamental phases of the basic risk assessment approach that are-Risk characterization, likelihood assessment, consequence assessment, and hazard/opportunity identification. [61] By contrasting the categories of likelihood and consequence, are [61] By comparing the likelihood category to the consequence category, an organization may use this structured technique to assess the amount of risk.
Definition of Risk
The "effect of uncertainty on objectives" is the definition of risk given by ISO 31000 [62]. This idea represents a shift from conventional definitions that are event-oriented to ones that are goal-oriented. [62]
In our context, risk figure outs the uncertainty surrounding how cultural diversity influences safety perceptions within the organization.

Based on the emergent safety-perception issues identified in our research, we can treat each as a potential 'hazard' in our organizational context. Meaning A danger is an area where people, the environment, or organizations might be harmed. [63]
In multicultural organizations, communication barriers, cultural differences, and varying safety perceptions constitute distinctive hazards that require systematic assessment to mitigate potential negative outcomes. These safety perception issues present unique challenges that necessitate a structured approach to risk management. [27]

5.1. Risk Matrix

Risk Matrix denotes a visualization tool used for risk assessment and risk scale by color-coding the risks. This is carried out by comparing the consequence severity category with the likelihood category. [60]
This straightforward process increases risk visibility and facilitates management decision-making. The matrix typically categorizes into severity as insignificant, minor, significant, major, or severe, while likelihood is categorized as rare, unlikely, moderate, likely, or almost certain. [60]
Based on the data analysis, a 5*5 risk matrix has been constructed that categorizes identified safety perception hazards according to: *Severity (1-5 scale)* on X-axis and *Likelihood (1-5 scale):* on Y-axis. We categorized risk by mentioning the levels by- Very Low, Low, Moderate, High, Very High, and Extreme
The analysis has been exposed to several key risk factors present in multicultural organizational settings, including language barriers, time and workload pressure, hesitation to speak up, training gaps, and difficult technical terminology. These were allocated within the matrix based on their assessed severity and likelihood.

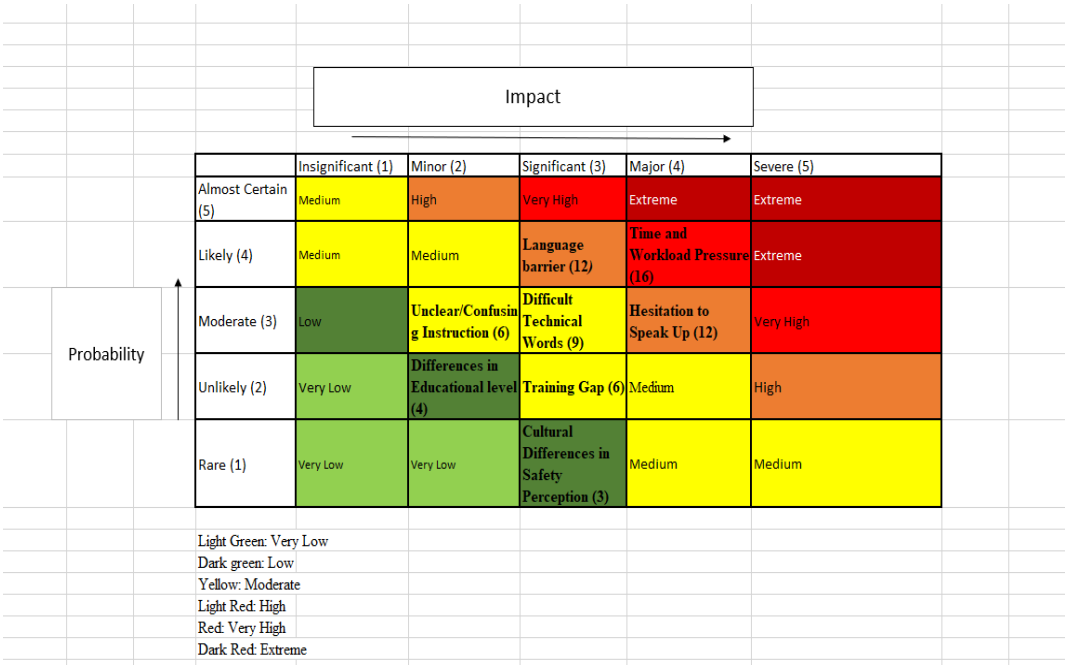

Figure 12: Risk Matrix

The represented 5×5 graphical qualitative risk matrix (Figure) is intended to provide a systematic outlook of potential threats regarding the perception of safety in multicultural environments and is developed using two axis: the by the vertical Y-axis plot the probability of occurrence, which varies from "Rare (1)" to "Almost Certain (5)" whilst by the horizontal X-axis illustrate the level of intensity impact, which ranges from "Insignificant (1)" to "Severe (5)." Every cell in the matrix-box is a production of these two factors with a color to enhance visibility and assist in making decisions management.

Green cells represent very low to low risks and are primarily located in the lower-left quadrant; yellow cells denote medium risks across the matrix's midsection; orange highlights high risks in the upper-middle and right-hand areas; and red cells mark very high to extreme risks concentrated in the upper-right quadrant. The diagram creates a clear prioritization of mitigation efforts based on risk severity.

Eight key hazards were assessed and categorized accordingly. In the high-risk category, "Time and Workload Pressure" emerged as the most critical, scoring 16 and positioned in the "Likely" and "Major" intersection. Similarly, "Hesitation to Speak Up" and "Language Barriers" also presented substantial risks, with both scoring 12. In the medium-risk tier, hazards such as "Difficult Technical Words" (score: 9), "Unclear or Confusing Instructions" (6), and "Training Gaps" (6) were identified. Lower risk issues included "Differences in Educational Level" (score: 4) and "Cultural Differences in Safety Perception" (score: 3). Overall, the matrix provides a valuable tool for visualizing and managing cultural and communication-based safety risks in diverse organizational settings.

The numerical values in brackets represent the calculated risk scores which is calculated by multiplying the probability rating and the impact rating (P × I) [64] The distribution of hazards

across the matrix reveals that issues particularly time and workload pressure and hesitation to voice concerns represent the most significant safety perception risks in multicultural organizational settings.

Risk Matrix effectively assists risk management through hazard identification and categorization [64], providing a strategic framework for allocating resources toward mitigating the most critical barrier in multicultural work environments.

5.2. FMEA

FMEA, or Failure Modes and Effects Analysis, is a proactive, methodical approach to analysing a system or process to determine where and how it may fail and to evaluate the related [65]. Theprimary objective of FMEA is to prioritize potential failure modes based on their severity, likelihood of occurrence, and detectability, enabling organizations to implement targeted actions to mitigate the most critical risks. FMEA is widely used in safety-critical industries and organizational risk management to promote continuous improvement and enhance operational reliability[65] [59]

The comprehensive FMEA report analyzes potential safety communication failures in multicultural work environments based on the provided risk matrix, survey questions, and analysis documents. The analysis identifies critical points of failure, prioritizes risks, and recommends targeted interventions to enhance workplace safety communication.

FMEA(Failure Modes and Effect Analysis)

Safety Perceptions in Multicultural Organizations

Prepared By: Samiha Amin

FMEA Date (Orig.): 8.05.2025

Potential Failure Mode	Potential Failure Effects	SEVERITY (1 - 5)	Potential Causes	OCCURRENCE (1 - 5)	Current Controls	DETECTION (1 - 5)	RPN	Action Recommended	SEVERITY (1 - 5)	OCCURRENCE (1 - 5)	DETECTION (1 - 5)	RPN
In what ways could the step, change or feature go wrong?	What is the impact on the customer if this failure is not prevented or corrected?		What causes the step, change or feature to go wrong? (how could it occur?)		What controls exist that either prevent or detect the failure?			What are the recommended actions for reducing the occurrence of the cause or improving detection?				
Unclear/Confusing Instructions	Misunderstanding of safety procedures leading to improper implementation	3	Complex documentation, technical jargon, limited user testing	2	Limited multilingual documentation	3	18	Implement user testing with diverse participants; create simple, clear instructions with visual aids; use plain language guidelines()	1	1	3	3
Difficult Technical Words	Inability to comprehend essential safety information	3	Industry-specific terminology, assumption of technical knowledge	3	Some simplified documentation	3	27	Create glossaries of technical terms; replace complex language with simpler alternatives;	2	1	3	6
Training Gap	Inconsistent knowledge and application of safety procedures	3	Non-customized training approaches, lack of needs assessment	2	Standard training sessions	2	12	Implement tailored training based on cultural and educational backgrounds; offer refresher courses; use interactive training methods with comprehension checks	2	1	1	2
Language Barrier	Critical safety information not effectively transmitted or understood	3	Limited multilingual support, reliance on technical language	4	Some translated materials, primarily English communications	3	36	Implement multilingual communications; use visual aids and symbols; develop language assistance programs; create buddy systems for language support	2	2	2	8
Time and Workload Pressure	Rushing through safety procedures, skipping steps, insufficient attention to safety	4	Production deadlines, understaffing, efficiency pressures	4	Some scheduling allowances for safety briefings	3	48	Schedule dedicated safety time; adjust production expectations; ensure adequate staffing levels; integrate safety checks into regular workflows	2	2	1	4
Hesitation to Speak Up	Unreported hazards and near-misses, missed improvement opportunities	4	Cultural differences in authority perception, fear of consequences	4	Anonymous reporting options in some areas	3	48	Create psychologically safe environment; implement anonymous reporting systems; recognize and reward safety reporting; provide cultural awareness training for managers	2	1	2	4

Figure 13: Failure Mode and Effect Analysis
Source: Integris, "FMEA Template," Integris Performance Advisors, https://integrispa.com/resource/fmea-template/ (accessed May 8, 2025).

The Failure Modes and Effects Analysis (FMEA) conducted in the research study which systematically evaluates safety perception risks in multicultural organizations by identifying potential failure modes, their associated effects, root causes, current controls, and recommended actions. [65] [59]

The analysis reveals several specific failure modes that can challenge safety communication and compliance, such as unclear or confusing instructions, difficult technical language, training gaps, language barriers, time and workload pressure, and hesitation to speak up. Each of these failure modes is linked to potential effects, including misinterpretation of safety procedures, inability to understand critical information, inconsistent application of safety protocols, neglect of safety due to operational pressures, and underreporting of hazards. These failures are typically caused by reasons such as complex documentation, dependance on technical jargon, limited language support, production deadlines, and cultural attitudes toward authority.

Despite the fact that, existing controls like basic multilingual documentation, standard training sessions, and anonymous reporting options offer some mitigation, they are often considered insufficient in addressing the complexity of multicultural safety dynamics. The FMEA applies a 1–5 scoring scale for severity (S), occurrence (O), and detection (D), allowing calculation of a Risk Priority Number (RPN) for each failure mode. [65] [59] For instance, critical factors such as time and workload pressure, hesitation to speak up and language barrier were calculated of RPNs 48 and 36 respectively, suggesting the necessity for involvement.

To mitigate these threats, the report suggests action elements like testing safety materials on diverse people, simplifying language and terms, customizing instruction for cultural considerations, providing better multimedia and visual assets, allotting time for safety protocol, and creating a psychological safe space for open dialogue. This methodological approach enables organizations to focus on priorities, improving safety communication, and inclusiveness to support safety in multicultural workplaces.

Based on the high-risk areas identified through FMEA, dedicated interdisciplinary teams should be formed for each critical issue. These teams should assign with clearly defined objectives and quantifiable improvement targets. To ensure successful implementation, both proper managerial support and distributing the necessary resources are essential. During the implementation phase, trial programs should be conducted in the high-risk parts, with active feedback collected from a diverse range of employees. Strategies should be adjusted accordingly to this feedback and the practical effectiveness of the interventions. In the monitoring phase, regular tracking methods should be be established, and systemic reassessment of Risk Priority Numbers (RPNs) should be carried out. All improvements, along with the lessons learned throughout the process, should be thoroughly documented to support continuous improvement [65] [59]

6.Discussion

The chapter aims to discuss the empirical research findings in relation to a survey comparing how cultural background differences are associated with safety perceptions and behaviour in Danish multicultural worksites. The chapter reviews the research questions, which allows to fit the findings within the wider literature about occupational safety, language difficulties and multicultural interactions. It also discusses the significance of major results, alternative explanations. Second, the chapter synthesizes implications from the risk analysis and FMEA to theorize how perceived risks to safety intersect with prioritized attend status in multicultural institutions. The conversation ultimately aims to facilitate a better understanding of how diversity influences safety practices and provides suggestions for the development of more inclusive and culturally responsive safety management approaches.

Demography: Attendees showed a considerable cultural diversity. In between Danish and non-Danish citizen, a strong majority (78.8%) reported that both their country of birth and citizenship equally shaped their cultural identity, indicating complex and blended cultural backgrounds within the workforce.

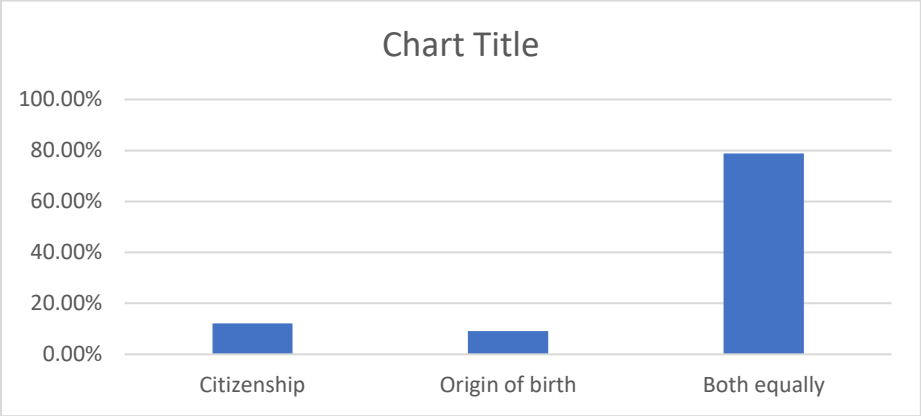

Figure 14: Bar Chart showing Cultural Background Alignment of Participants

Furthermore, In response to the question of time period at the time of the research, the majority (54.8%) of the respondents had worked in Denmark over five years. This indicates that a large part of the sample were long-term exposed to Danish workplace norms and safety work, that may have affected their integration and how safe they felt. In addition, 32.3% of the participants also had been working in Denmark for 1–3 years. This is a relatively new, but not altogether new, group in the working population, which may be adjusting to Danish safety culture. The answers offer intriguing perspectives on transitional events and the formation of early senses of security in diverse settings.

Language findings Regarding language proficiency, patterns suggested that overall, English is the more predominant language used for safety communication and 78.3% of respondents desired instruction in English, with 17.4% selecting both languages. None of the participants, significantly, aspired to safety communication in their native language only, implying that English is key in multicultural workplaces in Denmark.

Category	Detail	Percentage
Work Experience in Denmark	Worked in Denmark for more than 5 years	54.80%
	Worked in Denmark for 1-3 years	32.30%
Job Roles	General Staff	34.80%
	Technical Staff	17.40%
	Other (e.g., Ph.D. students, researchers, trainees)	26.10%
Language Preference for Safety	Prefer English for safety instructions	78.30%
	Prefer both English and Danish	17.40%

Table 9: Overview of Work experience, Job roles, Language preference

6.1. Perception of Safety and Psychological Confidence

The survey revealed a high level of confidence among participants regarding their ability to report safety concerns. Out of 23 respondents, 69.6% felt "very confident," and 21.7% "somewhat confident," with no one indicating low confidence. A high self-reported confidence levels were consistent across Danish and non-Danish citizens, as well as across varying lengths of work experience in Denmark. This suggests that multicultural workplaces in Denmark could fostering a generally supportive environment for safety communication. Managers' support and collegial training approach were also the key contributors to the confidence in qualitative feedback. Yet, slight uncertainty among recent arrivals indicated not all the newer cohort felt totally comfortable and efforts to bring that group onboard could enhance psychological safety for.

This finding is consistent with Edmondson (1999) and the latest psychological safety research that found when employees feel supported and empowered, are more likely to report safety problems.[66] The finding is also consistent with the safety climate model (Zohar, 2010) in that a positive safety climate fosters open communication and reporting, which is particularly important in cross-cultural contexts. [67]

6.2. Language and Communication Barriers

The key barriers to effective safety communication that were mentioned were identified from Question 13: Time and work pressure (74%), Not daring to speak up (57%), Lack of clear instruction and technical language (52%), Language barriers (48%)

The results emphasized that safety communication barriers are not only language related, but they also are of organizational and psychological nature. Topics such stress, lack of time for discussion and fear of speaking up are indicative of larger issues that relate to workplace

hierarchy, inclusiveness and trust. Issues like stress, limited time for discussion, and fear of speaking up reflect deeper concerns related to workplace hierarchy, inclusion, and trust. The study is corroborated by Overgaard et al. (2023), who concluded that multilingual tools are powerful catalysts for change only when grounded on inclusive practices and strong leadership. [49] Likewise, Sael (2019) found that both language simplification and visual reinforcement are critical in multinational teams working with technical complexity. [5]

6.3. Effectiveness of Safety Communication Strategies

Survey responses from Questions 10, 16, and 17 where questions were asked about the main ways of communication, strategies and additional strategies demonstrated that organizations employ diverse strategies to communicate safety information, including: Verbal instructions, Written documents, Safety training sessions, Visual signage, Online learning.

The multimodal communication approach that accommodates many learning styles was valued by the respondents. But qualitative input highlighted gaps between current application and real demand. Respondents highlighted the need for digital platforms with translation capabilities, visuals, peer support, and culturally appropriate examples.

These observations imply that different strategies may exist, but may not be complete or comprehensive. The emphasis on interactive workshops, simplified language, and leadership engagement reflects a desire for more meaningful and adaptive learning experiences.

Our study's results aligns with findings of Ricci et al. Ricci et al. (2021) who recommend culturally sensitive safety training in diverse teams. [68] It also supports results by Gyekye & Salminen (2010) that inclusive safety communication leadership increases compliance and employee engagement. [69]

6.4. Cultural Awareness and Risk Perception

When asked whether their cultural background influences their perception of workplace safety, 60% of Danish and 55.6% of non-Danish citizens responded “yes.” While a larger share of non-Danish respondents was unsure (33.3%), the data suggest that both groups recognize the influence of culture on safety behavior.

The proposed model also reflects on Hofstede’s cultural dimensions such as uncertainty avoidance and power distance affecting how employees perceive risk and authority.[51] [4] According to Håvold (2007), cultural attitudes toward safety—such as fatalism or individualism—can significantly shape how employees engage with risk. This was also reflected in qualitative responses, where participants from different backgrounds reported differing levels of comfort with questioning authority or interpreting hazards.[51]

6.5 Integration with Risk Assessment Tools

Risk Matrix and FMEA: To strengthen the practical relevance of the findings, this section connects the core survey results to the risk assessment conducted through a 5×5 Risk Matrix(60) and Failure Modes and Effects Analysis (FMEA). [58][65]. These tools helped turn people’s personal perception and communication struggles into measurable risks the organization could actually track and address. Several key survey findings directly corresponded with high-priority hazards in the risk matrix and FMEA analysis; Time and workload pressure was identified by 74% of respondents as the most common barrier to safety communication. In the risk matrix, this issue was rated with a severity of 4 (major) and a likelihood of 4 (likely), yielding a risk score of

16, categorizing it as a high-risk factor; Hesitation to speak up, a psychological safety concern reported by 57% of participants, was also classified as a high-risk issue with a score of 12, Language barriers, cited by 48% of respondents, aligned with a similarly high-risk rating (score: 12) due to their impact on comprehension and procedural adherence.
These findings support the use of FMEA to quantify with the highest RPN (Risk Priority Number) number, focusing on cultural and communication failures that jeopardize safety compliance in multicultural teams.
Alignment of Existing Controls with Participant Suggestions: The FMEA revealed that existing controls—such as general training sessions, written documentation, and anonymous reporting—were present but often insufficient. Participant suggestions gathered through open-ended responses and Questions 16 and 17 offered more culturally and linguistically interventions, including: Use of digital platforms with multilingual and visual instructions, Peer mentoring systems, Simplified language and culturally relevant training content, Interactive workshops and leadership engagement. [70] These proposed strategies directly align with recommended corrective actions in the FMEA, such as enhancing communication modes, revising training for accessibility, and fostering a psychologically safe environment. This convergence validates that employees are aware of the control deficiencies and possess valuable insights into how they might be resolved—reinforcing the importance of participatory risk management in diverse workplaces. [70]
Identified Gaps Between Practice and Need: Despite the presence of standard controls, the study identified several key gaps between current practices and participant needs. Most training was not tailored to cultural or linguistic diversity. Over-reliance on written and verbal instructions were not always accessible to non-native speakers or employees with lower educational backgrounds. Lastly, Operational demands leave little room for proactive safety engagement or reflection.[71]

6.6 Address Biases and Limitations

Although the statistical analysis yielded important information on safety perceptions between cultures, several limitations must be considered. When the nationality was tested with the cultural perception on safety with the Chi-square test, the p-value was 0.787 which means there is no statistically significant different. Nevertheless, the result should be interpreted with caution because of the relatively small size of the subgroup's which could potentially decrease statistical power and ambiguous.
Finally, although the cross-tabulations and testing of significance through Chi-square was appropriate given the data's structure, stronger methodologies such as regression modeling or cluster analysis may have shown more robust patterns had the sample been larger.[72]

6.7 Interpret from Multiple Angles

The survey findings indicate a generally high level of confidence in reporting safety concerns among employees in multicultural Danish organizations, with no statistically significant differences by nationality or years of experience. However, this apparent uniformity could be interpreted in several ways. While the data suggest a positive safety culture, it is possible that social attraction bias or organizational norms may have influenced their confidence. Additionally, the high preference for English in safety communication may reflect the

international nature of the workforce, but it may also mask underlying discomfort or challenges among those less proficient in English, who may have felt reluctant to express difficulties in a survey format. [27]

The analysis also illustrates that both Danish and non-Danish citizens largely agree that cultural background influences safety perceptions, but non-Danish respondents display more uncertainty. This uncertainty could arise from contextual factors such as recent migration, limited integration, or unfamiliarity with Danish workplace norms, rather than inherent cultural differences. As highlighted in the literature, previous work experiences and exposure to varying safety standards in other organizations or countries can shape how employees interpret and respond to safety protocols [27] For example, a worker from a country with less stringent safety regulations may perceive Danish standards as excessive, while another may view them as a welcome improvement. [5]

Workplace Culture, such as management style, hierarchy, and communication environment, are pivotal in shaping on how employees perceive and report safety issues. [74] The survey identified time and workload pressure, hesitation to speak up, and unclear instructions as major barriers to effective safety communication. Employees feel confident, since they receive supportive management and inclusive training. Conversely, in organizations with less-integrated leadership or communication that mainly explorations from the top down, staff particularly from ethnocultural backgrounds that place an emphasis on respect for authority could more likely to feel less empowered to speak out or raise concerns. [73] [74]

Moreover, the effectiveness of diversity management and leadership commitment to safety were found to be pivotal. Organizations that strategically manage diversity and foster inclusive communication tend to see improved safety outcomes, as diverse teams bring varied perspectives and are more likely to identify potential risks. [50] The discussion also acknowledged methodological limitations and explored alternative explanations through organizational and cultural lenses. The study also provides a basis for the final conclusion and recommendations by underlining the implication of culturally engaged safety practices.

7. Implications and Recommendations

Survey data collected in Danish multicultural work places are used to explore and in particular how a multi-national work force understands and impacts upon safety at work. Organizations may benefit from these findings by formulating plans for improved safety compliance and communication. The chapter provides actionable recommendations for addressing the problems identified while preserving a diverse workgroup.

Before giving any recommendations, we need to find the key points and results from our analysis. The survey revealed that 69.6% of those surveyed felt “very confident” to report safety concerns, but common barriers include time pressure and reluctance to speak up, unclear instructions and language barriers. In addition, the majority of workers (78.3%) were comfortable speaking safety in English without considering the adequacy associated with asking safety questions.
To respond to differing language requirements, institutions must provide diversity training sessions. There are numerous opportunities to discuss and reinforce safety regulations as well as develop a common understanding of issues that outdo cultural differences.[75]

Developing materials in multiple languages always giving priority to the languages more spoken amongst the workers and that add in visual demonstrations exceeds language barriers with an interim skill testing requirements for a broad range of nationalities. [75]

The use of technical jargon is a major obstacle to safety communication. Organizations should focus on simple, accessible language in all safety communications by developing safety materials in simplified language that avoids jargon and complex terminology, progressing a standardized safety vocabulary list with translations of key terms and execute "plain language" principles in all written safety content. [76]
The findings indicate a robust enthusiasm for employing digital platforms and translation technology to overcome language barriers to workplace safety communication. Mobile applications that offer immediate access to safety information in multiple languages can improve accessibility, while safety messages featured with digitized signage in rotating languages ensures ongoing visibility. [77]
Tech-based collection of safety information should be accessible through QR codes on equipment can connect workers to multilingual digital safety guidance. [78]

Clear visuals, safety slogans, and warnings posted in prominent places throughout the workplace are additional ways to reinforce safety messages in addition to electronic tools. Systems that use color coding to represent hazard levels simplify the expression of risks in a variety of cultural contexts. [78]

7.1 Building Psychological Safety

According to the report, one major obstacle is reluctance to voice concerns about safety. Creating psychological safety is therefore essential, particularly in diverse settings by trained supervisors to encourage open dialogue about safety concerns without fear of speak up, establishing anonymous reporting systems, Recognize and reward safety-focused communication across all levels. [79]

The most frequently cited barrier to effective safety communication was time and workload pressure indicating that operational demands may limit employees' capacity to fully engage with safety communications. It is recommended to incorporate safety discussions into regular workflow rather than treating them as separate activities. Set attainable production goals that take safety compliance time into consideration. Give employees the freedom to stop working when safety issues emerge without worrying about losing productivity. [79]

This chapter has explored the influence of cultural diversity on safety perceptions and communication within multicultural worksites in Denmark. While respondents reported high confidence in safety communication, but barriers such as time pressure, unclear instructions, and hesitation to speak up are still present. Risk assessment tools validated these as high-priority issues, suggesting the necessity for more specific and wide-ranging approaches.

8. Conclusion

The investigation on Safety Perceptions in Multicultural Organizations has provided valuable information on the impact of cultural diversity regarding the perspectives about safety, on the safety-related behaviors and on the communication in a workplace. A key finding was that the factors impacting how staff from different backgrounds perceive and experience safety activities are language preference, psychological safety and workload pressures. The findings further supported the importance of inclusive strategies—such as using easy-to-understand language, visual aids, peer mentoring and culturally specific training—for cultivating a common safety culture among diverse work groups.

As a master's student doing research, I gained a deeper gratitude for the densities involved in studying multicultural dynamics within occupational safety. Creating a questionnaire and implementing such tools as risk matrix and FMEA have taught me to unite qualitative and quantitative data in coherent, meaningful way. I also discovered the necessity of reflexivity — recognizing how my own cultural heritage can influence the framing of research questions and interpretation of data.

Among the most prominent findings was the magnitude of self-reported confidence throughout both Danish and non-Danish workers, which first seemed to counter the expectations that language and living in another culture would be significant barriers in safety communication. Furthermore, although language barrier was reported as a challenge, the English language was established as the auxiliary language of safety communication also among non-native speakers; a organizational standards that came with the level of openness which I was not acquainted with earlier.

The Research journey required me to enhance my analytical and project management skills, specifically in ways of managing survey design, interpreting data and risk assessment methodologies. I gained knowledge of working with SurveyXact, R programming and Microsoft excel for analysis which allowed me to enter and work with a variety of complex data. Most significantly, I gained a new perspective on inclusivity: in order to be safe, its management must be safe in terms of psychological safety, cultural identity, and communication equity in addition to compliance. Such lessons will resonate throughout my future career in risk management and organizational consulting.

In sum, the conjunction of academic exploration and personal learning throughout this study thus increased my ability to approach complex, real life safety issues critically. It will be an invaluable addition to my future endeavors both academic and professional in the field of risk and safety management.

9. Scopes And Delimitations

9.1 Scopes

The study covers the influence of cultural backgrounds on safety perceptions and behaviors in Danish workplaces, with a particular emphasis on multicultural environments

The research investigates the impact of increasing cultural diversity on workplace safety in Danish organizations, considering both migrant workers and multicultural teams also, The research has special emphasis on how workers from different cultural backgrounds perceive and respond to workplace risks and safety measures within Danish organizational contexts.

The paper also discusses barriers to successful safety communication and compliance in multicultural workplaces, such as language barriers, differences in risk tolerance, and expectations for authority and reporting between workers from different cultural backgrounds.

Therefore, the study assesses the workplace safety practices being applied to address cultural differences and create an inclusive safety culture.

9.2 Delimitations

The research study is focused on Denmark workplaces and organizations, but implications can be drawn beyond the Danish context, for the more general area of multi-cultural labor market. Even if the research aims to generate general insights, it may not address all safety aspects specific to an industry. Moreover, while this study does not distinguish between the safety practices of small and large organizations, we cannot generalize the findings to apply to all organizations.

While multicultural perspectives are present, the study does not necessarily encompass the wide-ranging varieties of cultures at the Danish workplace. Safety perceptions and practices are paramount, within the framework of occupational safety which indicates that other elements of workplace well-being are out of the scope of this study.

Moreover, certain methodological challenges appeared during data collection. A communication error put a stop to receiving separate of responses from two different organizations, and one organization ultimately declined to participate due to unavailability. As a result, the final sample size was much smaller than intended.

Participants in this study were represented from a limited number of organizations, which may limit the representativeness of the findings across the broader landscape of multicultural workplaces in Denmark. Additionally, the study relied exclusively on self-reported data, which introduces the possibility of bias, or individual clarification of survey items. Although the sample included individuals from diverse cultural backgrounds, certain regions were underrepresented.

Nevertheless, the accumulation of participants from a range of roles and backgrounds corresponding with a survey provides a meaningful foundation for understanding communication and compliance barriers in multicultural settings. The findings can inform more comprehensive safety strategies and serve as a useful starting point for future research in culturally diverse work environments.

10. Future Research

The data neither let us draw conclusions about other staff groups than those engaged in the case of accidents in the particular working sites in the present study. The small number of participants and the particular demographic profile of the study were major constraints; hence, future studies might validate the findings by using larger, more representative samples of individuals in other disciplines. A further promising avenue for further research is to study the effectiveness of different intervention strategies related to multilingual training programs, e-safety tools, peer-mentoring systems in enhancing communication and compliance in multicultural workplaces.

Additionally, the cross of leadership types, cultural values, and psychological safety is largely uncharted field. Examining how various leadership styles affect safety involvement in culturally varied work teams—especially in high hazard sectors—would be one area for future research. Finally, with the increasing significance of hybrid and remote work, future research should examine the effects that cultural and linguistic diversity may have on virtual safety communication and training effectiveness. 19 As work environments change, it would be important to revisit how a safety culture can be nurtured in and survive in digital and culturally complex environments.

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12. Appendix

Appendix A
Survey Questionnaire

Survey: Safety Perceptions in Multicultural Organizations in Denmark

Section 1: Demographic Information

1. a. What is your country of birth?

b. What is your citizenship?

c. Would you say your cultural background aligns more with-

- Origin of birth
- Citizenship
- Both equally

2. How long have you worked in Denmark?

- Less than 6 months
- 6 months – 1 year
- 1 – 3 years
- 3 – 5 years
- More than 5 years

3. What department do you work in within the organization?

4. What is your position in the company?

- Staff
- Administrative
- Manager
- Project Leader
- Technical staff
- Other (please specify)

5. When the company shares safety information, do they commonly use English?

- Yes
- No
- Other

6. Have you received formal safety training in your current workplace?

- Yes
- No

Section 2: Workplace Safety Perceptions

7. How confident do you feel in reporting safety concerns at work?

- Very confident
- Somewhat confident
- Neutral
- Not very confident
- Not confident at all

8. Which Language do you feel comfortable and confident in receiving safety instructions?

- English
- Danish
- Native Language
- Other

9. Do you think that your cultural background influences how you perceive workplace safety?

- Yes
- No
- Not sure

Section 3: Safety Communication and Compliance Barriers

10. What are the main ways safety information is communicated in your workplace?

- Written documents
- Verbal instructions

- Training sessions
- Signs and symbols
- Online Courses
- Other (please specify)

11. a. Have you ever encountered challenges understanding safety instructions?

- Very frequently
- Somewhat frequently
- Occasionally
- Rarely
- Never

11. b. If so, were they related to language or cultural background?

- Yes
- No
- Partially

12. Do you feel comfortable asking questions about safety procedures if something is unclear?

- Always
- Often
- Occasionally
- Rarely
- Never

13. What do you think are the biggest barriers to effective safety communication in a workplace?

- Language barriers
- Difficult Technical Words
- Unclear and Confusing Instructions
- Cultural differences in safety perceptions and attitudes
- Hesitation to speak up about safety concerns
- Time and workload pressure
- Education Level
- Inclusive safety policies
- Training
- Other (please specify)

Section 4: Effectiveness of Safety Strategies

14. Does your company provide safety training tailored to employees from different cultural
backgrounds?

- Yes
- No
- Not sure

15. If your company provides safety training for a diverse workforce, how effective do you think
it is? (Optional)

- Very effective
- Somewhat effective
- Neutral
- Somewhat ineffective
- Not effective at all

16. What strategies has your company implemented to improve safety communication for a diverse workforce?

- Safety training in multiple languages
- Using digital platforms and mobile apps with audio and visual safety instructions.
- Translating safety rules into different languages
- Giving safety examples that fit different cultures
- Allowing anonymous reports for safety concerns
- Conducting interactive online safety training with different learning styles
- Encouraging coworkers to help each other learn
- Regular feedback to make sure everyone understands
- Other (please specify)

17. What additional strategies could enhance workplace safety communication for multicultural
teams?

- More training in multiple languages
- Using simple language in safety materials

- More visual aids (e.g., diagrams, videos, pictures)
- Regular interactive safety workshops
- Providing real-life case studies relevant to different cultures
- Encouraging open discussion and feedback
- Safety policies
- Leadership training on multicultural communication
- Buddy or mentorship programs
- Other (please specify)