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INVESTIGATION INTO SAFETY CULTURE AND ITS ROLE IN INDUSTRIAL WORKPLACES

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ABSTRACT

This study investigated the significance of safety culture in industrial organizations, focusing on the attitudes, beliefs, and behaviors that support a safe working environment. The research aimed to assess employee perceptions of safety culture within an industrial company operating in the environmental and waste management sector in Western Slovakia. A questionnaire survey and calibration interviews were used to collect data on key aspects such as personal responsibility, communication, leadership, decision-making, and ongoing safety education. The analysis of survey responses revealed that while employees recognized the importance of safety, significant gaps remained in areas like communication between management and staff and the effectiveness of training programs. Statistical evaluation showed inconsistencies in how safety protocols were perceived and applied across different job roles, indicating the need for more targeted communication and engaging training methods. Insights from the calibration interviews confirmed that fostering open dialogue and providing regular feedback were crucial for improving the overall safety climate. The study concluded that investing in a strong safety culture is essential not only for minimizing risks and accidents but also for enhancing employee satisfaction and organizational performance.

Key words: safety culture; information; survey; decision making; statistical methods; data analysis

INTRODUCTION

Managing an organization demands thoughtful decisions at every level, relying on accurate and relevant data. Effective information management supports decision-making, planning, and operational efficiency, ultimately offering a competitive edge and fostering organizational success. Building a strong safety culture enhances employee well-being while lowering risks of accidents. To understand and improve safety culture, companies can conduct employee surveys to gain insight into the attitudes and behaviours shaping this culture. Systematic analysis of these responses helps identify strengths and areas for improvement, guiding organizations toward better safety practices and resilient work environments. This

article examines safety culture's role, survey implementation, and methods for analysing collected data.

LITERATURE REVIEW

Global definition of safety culture: 'Safety culture is the enduring value and priority that everyone in every group at every level of an organization places on the safety of workers and the public. It refers to the extent to which individuals and groups commit to personal responsibility for safety, will act to protect, reinforce and communicate safety concerns, seek to actively learn, adapt and modify (individual and organizational) behaviour based on lessons learned from mistakes, and be rewarded in a manner consistent with these values' (Wiegmann 2002; Project D16/2005).

Safety culture "encompasses the core values and behaviours resulting from the shared commitment of leaders and individuals to emphasize safety over other goals to ensure the protection of people and the environment. Sproch defines safety culture as *"a complex of sub-cultures in relation to both the individual and the organization. Personal attitudes (personnel) and rules applied by the organization can prevent or promote the occurrence of unsafe phenomena, conditions that are precursors to accidents/incidents. The culture within an organisation is as important as any other investment in safety. It cannot be achieved overnight; it is a process of shared learning that takes time"*(Kim 2022).

As stated in *Project Report D16/2005 CULTURE OF SAFETY IN FLIGHT MANAGEMENT*, the concept of a culture of safety has its origins in the social and behavioural psychology of the 1950s and 1960s, which came to the fore in organisational psychology, organisational behaviour and management literature in the 1980s. The term safety culture received its first official use in the initial report on the Chernobyl nuclear power plant accident in Ukraine (IAEA 1986). The IAEA report (1986) introduced the concept to explain organizational defects and operator violations that created the conditions for the disaster. Polling reports since then have suggested a poor safety culture in operating companies as a determinant of several significant accidents, such as the King's Cross tube station fire (Fennell 1998); the sinking of the passenger ferry Herald of Free Enterprise (Sheen 1987) and the Clapham Junction passenger train collision (Hidden 1989). The importance of safety culture to safe operations is not disputed (Cox 1998). Organizations with a positive safety culture are characterized by communication based on mutual trust, a shared perception of the importance of safety, and confidence in the effectiveness of preventive measures." (HSC 1993, 23).

Guldenmund (2000) explores the foundational theories of safety culture, emphasizing its role in preventing accidents through shared organizational values and behaviours, particularly in high-risk industries. Morrow, Koves, & Barnes (2014) analyse the connection between safety culture and performance in U. S. nuclear power, identifying trust and communication as critical factors. Haghighi (2017) present a case study on an oil refinery, using models to implement safety culture interventions that significantly improved safety compliance. Kalteh (2020) developed a safety culture assessment tool within a gas refinery, integrating sociotechnical and ergonomic factors. Murata (2021) examines cultural failings in crisis management during the Fukushima disaster, underlining the importance of organizational alignment in safety practices. A company where safety is embedded in daily practices gains a strategic advantage, as prioritizing safety lowers accident risks, protects employee health, and minimizes costly operational disruptions. This proactive safety culture also boosts morale and productivity, enhancing the company's reputation and appeal to talent and clients who value responsible practices. Open communication, regular safety training (nowadays more and more often with the use of virtual and augmented reality), and active management support are essential for

fostering such a culture. A structured survey can further assess the company's safety climate, informing strategic decisions, action plans, and improvement efforts.

QUESTIONNAIRE SURVEY CARRIED OUT IN THE MUNICIPAL ENTERPRISE IN THE WESTERN SLOVAKIA REGION

The questionnaire survey was conducted in a company, referred to here as the Municipal Enterprise in the Western Slovakia Region (operating in environmental and waste management), which preferred to remain anonymous. This survey aimed to gather insights into the safety culture within this organization. Data collection involved employee questionnaires, supplemented by calibration interviews, to thoroughly assess current safety practices and perceptions. The collected data were then analysed to propose targeted measures for improving the organization's safety culture.

The procedure for conducting the questionnaire survey was as follows (Figure 1):

- **Formulation of individual questions** - based on the safety culture points set by the occupational health and safety culture expert,
- **Setting up the questionnaire** - digitisation, setting up communication to respondents and subsequent distribution of the questionnaire,
- **Data collection** - was implemented in the period from 01.03.2024 to 31.03.2024,
- **Processing of the collected data** - digitization of responses from paper questionnaires, data processing, evaluation of critical areas - preparation for calibration interviews,
- **Calibration interviews** - 25.04.2024 -26.04.2024 calibration interviews with 20 randomly selected employees.



Figure 1: The procedure for conducting the questionnaire survey (own elaboration)

The questionnaire's questions were designed to be clear and concise, with careful attention to their construction and sequence. Each question avoided sensitive topics to ensure respondent comfort, as inappropriate or poorly phrased questions could compromise the survey's effectiveness. Following these principles was crucial to maintaining the survey's reliability and integrity (Kreislóvá 2008).

The questionnaire was constructed according to each of the safety culture characteristics (<https://itoz.sk>):

1. Questions for statistical purposes of the company.
2. Personal responsibility - questions 1-3.
3. Questioning attitude - questions 4-5.
4. Effective communication - questions 6-9.
5. Leadership - Questions 10-12.
6. Decision making - questions 13-15.
7. Respectful working environment - questions 16-19.

8. Continuing Education - Issues 20-21.
9. Identifying and solving problems - questions 22-24.
10. Safety culture, understanding the issues - questions 25-30.

The safety culture climate survey questions are the intellectual property of the survey company with whom we conducted the survey, so we do not present them in full.

Data collection

As mentioned above, the questionnaire survey was carried out from 01.03.2024 to 31.03.2024. In order to collect as much data as possible, the questionnaire was distributed to the employees electronically, in paper form or they could use the QR code (Quick response code) of the questionnaire questions, using a mobile phone/tablet.

Questionnaires were completed by **157 respondents** of which 157 were returned :

- **Electronically 45 %** (71 questionnaires)
- **Paper form 55 %** (86 questionnaires)

The term 'sample' refers to the part of the population that allows us to draw conclusions about the population, and it is therefore important that the sample size is sufficient to allow meaningful conclusions to be drawn. In other words, it is the minimum size that is necessary to estimate the true proportion of the population with the required level of error and confidence. Therefore, determining the appropriate sample size is one of the recurrent problems in statistical analysis. Its equation (1) can be derived using the population size, the critical value of the normal distribution, the sample proportion, and the margin of error (<https://fmk.sk/vzorka/>).

$$n = \frac{(z^2 \times p \times (1 - p)) + e^2}{e^2 + z^2 \times p \times \frac{(1 - p)}{N}} \quad (1)$$

Where:

e - permissible margin of error in %

p - variance in %

z - confidence level in %

N - population size

Calculating the confidence level in the questionnaire:

- Total number of **554 employees**
- Number of participants **157 (28 %)**
- Accessible error margin **5 %**
- Final reliability level **87 %**

Calibration interviews

Calibration interviews (20 employees) were conducted in a one-on-one format with twenty employees with different job roles in the company. Conduct of the interviews is supportive in gaining a deeper understanding of the employee's perspectives and identifying areas of for improvement. Despite the face-to-face interviews, similar to the questionnaire method, the anonymity of the respondents was maintained, due to the desire for the most truthful and honest answers trust in the data/information gathering process was indicated. In selecting respondents, emphasis was placed on job position and variability in the nature of the work performed.

The moderated calibration interview was conducted within the circuits:

- Understanding survey responses.
- Positive aspects.
- Areas for improvement.
- Leadership and communication.
- Suggestions for improvement.

Evaluation of the survey

One of the basic objectives in using a questionnaire on a selected issue is to obtain data that we then work with. In the end, we obtained a final dataset with responses from 157 respondents, which preserves the data and facts on which we build. After cleaning the dataset, we can note the individual frequencies of variables that are used for statistical purposes of the company such as information about the gender of the respondents, age category, the "location" where the respondent works, the number of years of experience, how many years he has been working in the company, and the job position. We give two examples of frequency evaluation in Figure 2 and Figure 3.

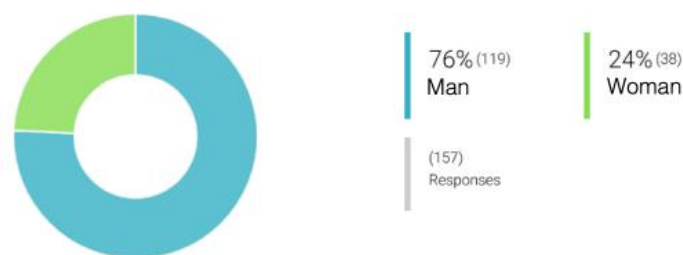


Figure 2: Gender distribution of the survey respondents (own elaboration)

Figure 2 shows that in our dataset to work with, there are 38 women, accounting for 24% of the responses, and 119 men, accounting for 76% of the responses. Figure 3 shows the responses to the question "How many years have you worked in the company?", with the largest representation being the response of 2 to 5 years, which is 29% of the responses.

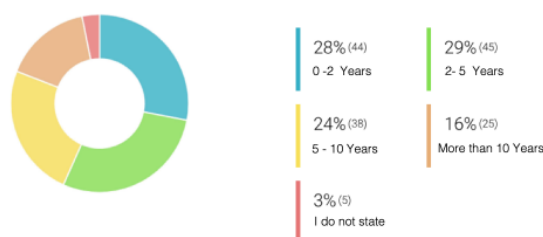


Figure 3: Evaluation of the question: How many years have you worked in the company? (own processing)

Evaluation of the questionnaire by heading of questions

The purpose of the survey was to assess attitudes, beliefs, behaviors related to safety culture across the organization. Based on this purpose, survey questions were developed under the headings of the core characteristics of Safety Culture. After collecting data from the respondents, the responses were evaluated and compared with subject matter experts. The article contains only an evaluation of the first set of questions.

We work with 30 questions in the survey, Survey questions were developed under the headings of the core characteristics of Safety Culture. Characteristics are made up of 10 areas.

Table 1: Characteristics of the culture of safety - superior areas of questions (own processing)

1	Personal responsibility - 1 - 3 Questions
2	Questioning attitude 4 - 5 Questions
3	Effective communication 6 - 9 Questions
4	Leadership 10 - 12 Questions
5	Decision making 13 - 15 Questions
6	Respectful working environment 16 - 19 Questions
7	Continuing Education 20 - 21 Questions
8	Identifying and solving problems 22 - 24 Questions
9	Safety culture understanding of the issues 25 - 29 Questions
10	My main motivation in following the safety rules is mainly: 30. Question

Evaluation

One of the basic goals when using a questionnaire for a selected issue is to obtain data with which we subsequently work. After collecting data from the respondents, the responses were evaluated and compared with subject matter experts, we used statistical methods and graphs for the evaluation. In evaluation we obtained average value of the given answer. The value is measured from one to ten, where closer to ten is the strongest value.

In the following Figure3, the individual questions listed in Table 1 are evaluated.

Each question was evaluated statistically and with the help of a graph, we had a total of thirty answered questions. For demonstration and example, we present one graph, evaluation of question 3. This question belongs to the first group of questions from tab.1.

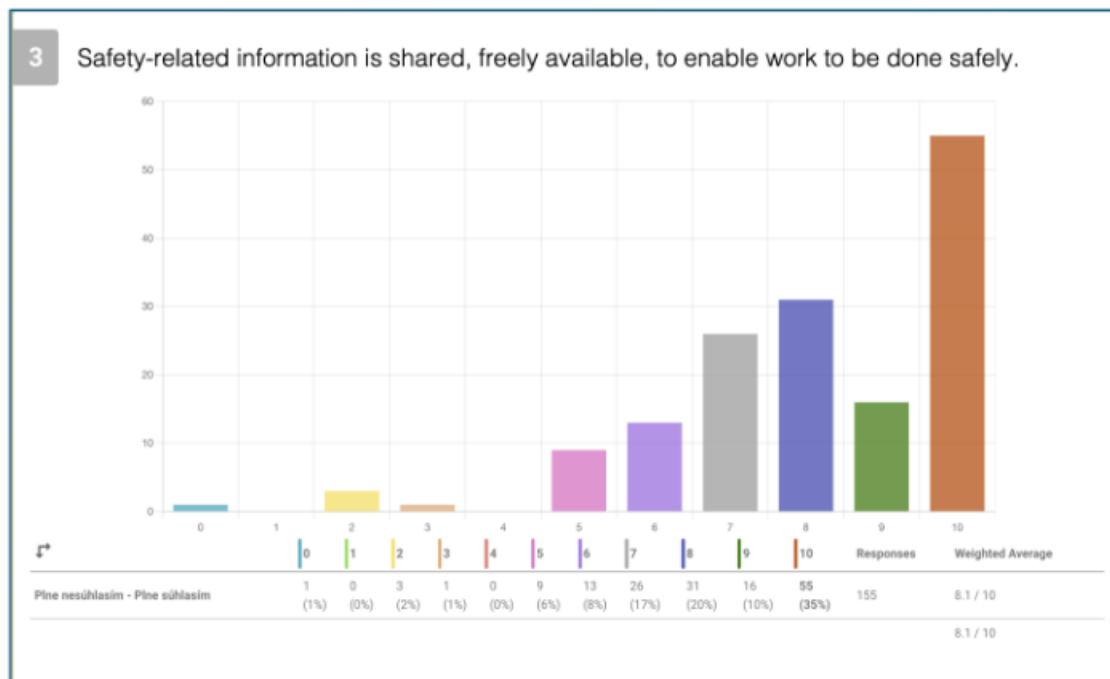


Figure 6: Evaluation of the response to question 3 (own elaboration)

Average response of 8.1 for question 3 'Safety-related information is shared, freely available to enable work to be carried out safely'. The availability of information regarding safety is fine. Thanks to the calibration interviews, it was clarified that the variance in negative responses is mainly related to the employee's lack of understanding of the information (question 2).

The most common reason employees gave for not completing the questionnaire was time stress, too many responsibilities, and not considering it a priority to deal with. In the following we present the summarised results of the questionnaire survey.

Despite the fact that, as a result, more than 50% of employees understand the processes and overwhelmingly agree with the settings in the company, the results show a "negative tendency of answers" on the topic of leadership, communication towards employees and overall trust. Employee dissatisfaction with communication and trust in leadership can lead to a negative safety culture where employees may feel pressure to ignore their own safety in order to achieve work goals or bonuses. Such an environment can increase the risk of workplace accidents and incidents.

The results of the survey and calibration interviews revealed:

- Employees perceive safety as a strong partner, company emphasises on compliance with rules.
- They perceive shortcomings in the way OSH (Occupational health and safety) training is conducted by managers.
- Supervisors must accept responsibility for subordinates and constantly remind them to observe safety at work. (They see training as a burden on top of other job duties)

A safety culture in the workplace is a key element for safety but also for the satisfaction of all groups of employees. An analysis of the current situation is the starting point for the establishment of specific recommendations with the aim of creating a positive and safe working environment.

Establishing **effective communication channels** is essential. Regular and structured meetings where employees can talk openly about their concerns are essential. It is important that management is open to feedback and actively seeks to improve communication processes. Specific suggestions:

- Occupational health and safety- Managers: collaborating on effective training for staff.
- Improve awareness of the working professions- use and update of monitors, information boards, posters.
- Improving the flow of information between departments (shared drives, biannual meetings).

Management should be transparent in its decisions and policies. Communication from management should be direct; employees expect feedback on why certain actions are happening in the organisation. According to employees, OSH communication has improved over the last period, in terms of regular information, OSH should do more marketing in terms of attracting the employee.

Employees should be involved in processes related to security policies and rules. This not only increases their involvement but also strengthens their confidence in the system. There is also a growing importance of non-financial employee appreciation and the opportunity to bring suggestions for improvements in the company by improving the relationship between management and employees, providing employee benefits, and process optimization. Many employees have specified as a huge benefit, receiving feedback from the supervisor. They appreciate the informal conversations from the supervisor/management, it creates a sense of interest and a better culture which is reflected in their willingness to follow the rules and listen more to "lessons learned".

RESULTS OF OTHER STUDIES ON COMPARISON AND ISO 45001 STANDARD ISO- THE INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

It is possible to find and compare many surveys in the field of safety culture. Here are four studies that analyse safety culture assessments in industrial settings, examining how these assessments impact safety outcomes and organizational improvements:

1. Study on Measuring Safety Climate: Research conducted by the Health and Safety Laboratory (HSL) in the UK developed a Safety Climate Tool to measure safety culture within various industries, including construction and manufacturing. This tool, based on employee perceptions, helps identify areas for safety improvements and establishes benchmarks against industry standards. It has been particularly successful in industries with high safety demands, such as railways and large construction projects like the Olympic Park. The findings emphasize the importance of continuous monitoring and the role of management in fostering a safety-oriented culture to reduce accidents (books.hse.gov.uk).
2. Case Study on Safety Culture Transformation: In a manufacturing company (referred to as Company X), a focused effort to change safety culture led to significant improvements in safety performance. Key strategies included leadership commitment, employee involvement, and regular safety assessments. Through safety committees and a comprehensive training program, the company encouraged proactive safety behaviour. By creating a recognition system for safety contributions, Company X was able to enhance its safety culture and decrease incident rates, demonstrating the tangible benefits of a structured safety culture approach in industrial environments (sheilds.org).
3. BP Grangemouth Refinery Investigation: Following multiple incidents, BP's Grangemouth refinery underwent a detailed safety culture assessment as part of an investigation. The assessment revealed critical cultural and management flaws impacting safety. As a result, the

refinery implemented significant safety reforms, focusing on leadership, safety protocols, and employee engagement. This case highlighted the direct connection between safety culture and operational safety, underscoring the necessity of cultural assessments in high-risk industries (books.hse.gov.uk).

4. **Comparative Safety Culture Assessments in Manufacturing:** A broader industry study compared safety culture assessment practices across various manufacturing companies. It found that effective safety cultures were often marked by strong communication, clear safety policies, and active management involvement. Companies using structured assessment tools saw better safety records and higher employee engagement in safety initiatives. The study also suggested that companies with a positive safety culture were more resilient to operational risks and better prepared for emergencies (general industry research).

The ISO standard that specifically addresses safety culture within the context of organizational safety management is ISO 45001: Occupational Health and Safety Management Systems — Requirements with Guidance for Use. Although ISO 45001 does not focus exclusively on safety culture, it places significant emphasis on fostering a strong safety culture as part of an organization's health and safety management practices.

Key Points about ISO 45001 and Safety Culture:

1. **Leadership and Commitment:** ISO 45001 highlights the role of top management in cultivating a culture that prioritizes occupational health and safety. Leaders are encouraged to model safety values and support safe behaviour across all levels of the organization.
2. **Worker Participation:** The standard promotes active involvement of employees in safety practices, which is a foundational aspect of a positive safety culture. Encouraging feedback and open communication on safety matters helps to develop trust and reinforces a safety-oriented mind-set.
3. **Continuous Improvement:** ISO 45001 requires organizations to regularly assess and improve their safety processes, which includes addressing attitudes, perceptions, and behaviours that contribute to the overall safety culture.

CONCLUSION

The collection of information, its evaluation and presentation are now the basis for accurate management decision-making in organizations. Through questionnaire surveys, calibration interviews and subsequent statistical analysis of the data, a company has information about the current state of their particular Safety Culture, insights from employees and their suggestions for improvement, while the questionnaire data itself is the basis for developing systematic procedures for improving the Safety Culture in the company.

The safety culture in the industry can be as follows:

- **Safety initiatives:** in industries such as manufacturing, safety culture focuses on securing the production process and protecting employees from chemical, physical and biological threats.
- **Best practice:** the implementation of systems such as Lean Manufacturing and Six Sigma contribute to streamlining processes and reducing unsafe situations. Also, regular testing and maintenance of equipment is key to preventing accidents.
- **Identification of best practices and approaches:**
- **Open communication:** a culture based on trust, where employees can openly report problems and suggest improvements without fear of negative consequences.
- **Education and Training:** Regular training for employees is key to ensure up-to-date knowledge of safety practices and compliance.

- Evaluate and improve: continuously evaluate security protocols and implement new practices based on feedback and incident analysis.
- Employee Involvement: involving employees in decision-making processes related to their safety, thereby increasing their commitment and accountability for safety compliance.
- A safety culture across all sectors should have a common goal - reducing risk, protecting employees and ensuring quality and safe products or services. Each industry has its own specificities, but best practices and approaches can be adopted and adapted to improve safety standards everywhere.

Future research on safety culture in industrial environments could focus on several key areas to deepen understanding and effectiveness:

- Measurement Tools and Validity: While many companies use surveys and questionnaires to assess safety culture, there is a need for validated, industry-specific tools that accurately measure safety culture's multidimensional aspects. Future research could develop and test these tools for consistency, reliability, and sensitivity to cultural differences.
- Linking Safety Culture to Performance Metrics: Studies could explore the correlation between strong safety cultures and tangible performance outcomes, such as reduced accident rates, operational efficiency, and employee well-being. This research would support business cases for investing in safety culture initiatives by quantifying their benefits.
- Impact of Leadership Styles on Safety Culture: Research could examine how different leadership styles influence safety attitudes and behaviours. This might include exploring how transformational, participative, or servant leadership impacts safety outcomes, potentially identifying which leadership approaches are most effective in fostering a positive safety culture.
- Employee Engagement and Reporting Behaviour: Investigating factors that encourage employees to actively participate in safety programs and report near-misses or unsafe conditions could improve proactive safety measures. Understanding the psychological and organizational barriers to reporting could help in designing systems that encourage open communication and continuous improvement.
- Influence of National and Organizational Culture: Cultural differences play a significant role in how safety is perceived and practiced. Research could examine how national, regional, and organizational cultures affect safety practices, helping multinational companies tailor their safety programs to various cultural contexts.
- Technology Integration in Safety Practices: With advancements in digital tools like IoT, AI, and data analytics, research could focus on how these technologies can enhance safety monitoring, incident tracking, and real-time feedback to support safety culture. This could include studying the impact of wearable technology on safety behaviours or the role of AI in predicting safety risks.
- Sustainability of Safety Culture Initiatives: Finally, research could assess the long-term sustainability of safety culture improvements. Studies could explore what factors contribute to lasting safety culture changes, how often training and reinforcement are needed, and what practices are most effective for maintaining high safety standards over time.

By addressing these areas, future research can provide valuable insights that help industrial companies develop more effective, culturally aware, and technologically integrated approaches to safety culture.

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REFERENCES

1. Advisory Committee on the Safety of Nuclear Installations (ACSNI). 1993. *ACSNI study group on human factors*. London: HM Stationery Office.
2. BP Grangemouth Refinery Investigation Report. 2020. “Lessons on Safety Culture.” *Occupational Safety Journal* 22: 88–102. UK Health and Safety Executive. Accessed at <https://books.hse.gov.uk/>.
3. Cox, S. and Rhona F. 1998. “Safety Culture: Philosopher’s Stone or Man of Straw?” *Work & Stress* 12 (3): 189–201. <https://doi.org/10.1080/02678379808256861>.
4. EUROCONTROL Experimental Centre. 2006. *Understanding safety culture in air traffic management*. EEC Note No. 11/06 Project D16/2005. Accessed at <https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=3f0b285353cc5c48dc732896e8eee6b9998ee5d2>.
5. Fennell, D. 1998. *Investigation into the King's Cross underground fire*. Department of Transport: HMSO.
6. Guldenmund, F. W. 2000. “The Nature of Safety Culture: A Review of Theory and Research.” *Safety Science* 34 (1–3): 215–257. [https://doi.org/10.1016/S0925-7535\(00\)00014-X](https://doi.org/10.1016/S0925-7535(00)00014-X).
7. Haghighi, M., Khademipour, G., Mortazavi, S. B., Hajizadeh, E., Khosravi, Y., & Gholami, A. 2017. “Safety Culture Promotion Intervention Program (SCPIP) in an Oil Refinery Factory.” *Safety Science* 93: 76–85. <https://doi.org/10.1016/j.ssci.2016.11.019>.
8. Health and Safety Laboratory (HSL). 2022. *Measuring Safety Climate in High-Risk Industries Using the Safety Climate Tool*. London: Health and Safety Executive. <https://books.hse.gov.uk/>.
9. Hidden, A. 1989. *Investigation into the Clapham Junction Railway Accident*. Department of Transport: HMSO.
10. Hsv_Admin. 2022. “Kultúra Bezpečnosti – HS Vision.” [Safety Culture – HS Vision]. HS Vision, January 31, 2022. <https://hsvision.sk/kultura-bezpecnosti/>.
11. IAEA. 1986. *Summary report on the Post-Accident Review Meeting on the Chernobyl Accident*. Vienna: International Safety Advisory Group.
12. International Organization for Standardization. 2018. *ISO 45001:2018 Occupational Health and Safety Management Systems — Requirements with Guidance for Use*. Geneva: ISO.
13. Jones, P. & R. Zhao. 2019. “Comparative Analysis of Safety Culture Assessments in the Manufacturing Industry.” *Industrial Safety Review* 29 (3): 307–320. <https://doi.org/10.5678/isr.2019.003>.
14. Kalteh, H. O., Mortazavi, S. B., Mohammadi, E., & Salesi, M. 2020. “Assessing Safety Culture in a Gas Refinery Complex: Development of a Tool Using a Sociotechnical Work Systems and Macroergonomics Approach.” *Safety Science* 132: 104969. <https://doi.org/10.1016/j.ssci.2020.104969>.
15. Kim, Ji-Myong, Kwang-Kyun Lim, Sang-Guk Yum, and Seunghyun Son. 2022. “A Deep Learning Model Development to Predict Safety Accidents for Sustainable Construction: A Case Study of Fall Accidents in South Korea.” *Sustainability* 14 (3): 1583. <https://doi.org/10.3390/su14031583>.
16. Klett, F. 2010. “The Design of a Sustainable Competency-based Human Resources Management: A Holistic Approach.” *Knowledge Management & E-Learning* 2 (3): 278–292. <https://doi.org/10.34105/j.kmel.2010.02.020>.

17. Kreislová, G. 2008. “Fakulta Aplikovaných Věd Katedra Matematiky. Bakalářská Práce. Dotazníkové šetření [Faculty of Applied Sciences Department of Mathematics. Bachelor Thesis. Questionnaire Survey].” <https://adoc.pub/fakulta-aplikovanych-vd-katedra-matematiky-bakalaska-prace-d.html>.
18. Kultúra BOZP – itoz.sk. 2021. [OSH Culture – itoz.sk], April 28, 2021. <https://itoz.sk/kultura-bozp/>.
19. Morrow, S. L., Kenneth Koves, & V. E. Barnes. 2014. “Exploring the Relationship Between Safety Culture and Safety Performance in U.S. Nuclear Power Operations.” *Safety Science* 69: 37–47. <https://doi.org/10.1016/j.ssci.2014.02.022>.
20. Murata, A. 2021. “Cultural Aspects as a Root Cause of Organizational Failure in Risk and Crisis Management in the Fukushima Daiichi Disaster.” *Safety Science* 135: 105091. <https://doi.org/10.1016/j.ssci.2020.105091>.
21. Sheen, M. J. 1987. *M.V. Herald of Free Enterprise*. London: HMSO: Department of Transport.
22. Smith, J., and A. Lee. 2021. “Transforming Safety Culture in Manufacturing: A Case Study of Company X.” *Journal of Occupational Safety and Health* 15 (4): 243–259. <https://doi.org/10.1234/josh.v15n4.001>.
23. Šproch, V. n.d. *Safety Culture*. [Kultúra bezpečnosti]. Accessed at <https://www.mindop.sk/uploads/media/c9258c4585004ea835581a61760de848284b737f.pdf>.
24. Traits of a Healthy Nuclear Safety Culture – Japanese pocketbook sized. n.d. Accessed at <https://www.wano.info/resource/traits-of-a-healthy-nuclear-safety-culture-japanese-pocketbook-sized/>.
25. University of SS. Cyril and Methodius in Trnava. n.d. *Sample Size Calculation*. <https://fmk.sk/vzorka/>.
26. Wiegmann, D. A., Zhang, H., Thaden, T., Sharma, G., & Mitchell, A. 2002. *A synthesis of safety culture and safety climate research*. Urbana, IL: University of Illinois.