

TAMARA RAĐENOVIĆ¹
SNEŽANA ŽIVKOVIĆ²
MILIŠA TODOROVIĆ³

^{1,2}University of Niš,
Faculty of Occupational Safety, Serbia

³University of Zenica, Faculty of
Metallurgy, Bosnia and Herzegovina

¹tamara.radjenovic@znrfak.ni.ac.rs

²snezana.zivkovic@znrfak.ni.ac.rs

³milisa.todorovic@unze.ba

INVESTIGATING THE OCCUPATIONAL HEALTH AND SAFETY PRACTICES IN SERBIA

Abstract: Occupational health and safety (OHS) represents a key aspect of decent work, as recognized in the UN 2030 Agenda for Sustainable Development, particularly SDG 8 – decent work and economic growth, and especially set in the 8.8 target. Health and safety workplace is not only a fundamental labour right, but also a crucial factor in promoting sustainable economic growth, ensuring full employment, and supporting decent work for everyone. Although substantial advancements have been made in OHS over the years, many workers still experience work-related injuries and illnesses, and some tragically lose their lives due to exposure to various occupational hazards and risks. Therefore, the main aim of the paper is to assess the OHS practices in Serbia. For this purpose, a questionnaire was designed covering 7 aspects of OHS culture in organisations: vision, credibility, collaboration, feedback and recognition, responsibility, communication, and action orientation. The analysis of the obtained results revealed areas for improvement in the existing OHS practices, thus enabling the strengthening of OHS in organizations and enhancing the well-being of workers.

Keywords: Occupational Health and Safety (OHS), Culture, Serbia

ORCID iDs: Tamara Rađenović
Snežana Živković
Miliša Todorović

<https://orcid.org/0000-0003-1632-7772>

<https://orcid.org/0000-0002-7931-9334>

<https://orcid.org/0000-0001-6239-4285>

INTRODUCTION

According to the latest ILO estimates, more than 2.93 million workers around the world die per year as a result of work-related factors, whereas some 395 million non-fatal work-related injuries take place (ILO, 2023), and economic consequences of poor OHS practices are estimated at almost 3.9 percent of global GDP each year (EU-OSHA, 2021). These statistics point to the fact that joint action is needed to provide maximum health and safety at work.

Despite decades of international effort and the integration of OHS into global development agendas, including the United Nations Sustainable Development Goals (particularly Target 8.8), the reality in many countries reveals a persistent gap between policy and practice. Serbia, like many transition economies, has aligned its legal and institutional frameworks with international standards, yet effective implementation and continuous improvement in workplace safety culture remain challenging. Fragmented oversight, limited resources in small and medium enterprises (SMEs), and insufficient engagement of workers in safety processes are just a few of the critical issues impeding progress.

While existing national statistics provide a quantitative picture of work-related injuries and occupational diseases, they often fail to capture the cultural and organizational dynamics underlying safety outcomes.

In 2021 alone, the European Union recorded approximately 2.88 million non-fatal workplace accidents resulting in absences of four or more days, alongside 3,347 fatal incidents – a ratio of roughly 860 serious injuries for every death (Rađenović, 2023). Although there has been a moderate decrease in these figures compared to previous years, the persistence of high accident rates, particularly in sectors like construction, manufacturing, and transportation, underscores ongoing vulnerabilities. These incidents not only impact individual well-being but also generate substantial economic losses, with EU-wide costs of work-related accidents and illnesses estimated at €476 billion, or 3.3% of the region's GDP (EU-OSHA, 2021; Rađenović, 2023).

This issue is particularly important for countries such as Serbia, where evolving labor markets, regulatory reforms, and industrial restructuring present both opportunities and challenges in ensuring safe and healthy working environments. National-level statistics often emphasize injury counts and compliance metrics, but they provide little insight into how workers perceive safety values, leadership, and communication practices within their organizations (Živković, Rađenović, 2025).

To address this need, the present study focuses on the cultural dimensions of OHS within Serbian

organizations. Grounded in the understanding that safety culture is not just a consequence of mandated rules but a dynamic element of organizational behavior, this research delves into how safety is practically implemented at the workplace level, ultimately offering evidence-based recommendations for enhancing OHS practices in Serbia (Mixafenti et al., 2025). Safety culture plays an important role in every organization, and by changing it, fostering internal acceptance, and ensuring external alignment, better and safer working conditions can be achieved (Todorović et al., 2012). By analyzing employee responses across seven cultural dimensions – vision, credibility, collaboration, feedback and recognition, responsibility, communication, and action orientation, the paper aims to identify areas of strength and aspects requiring targeted improvement.

Furthermore, the exploration of safety culture provides organizations with a pathway to improve their competitive standing (Bautista-Bernal et al., 2023). This approach recognizes that organizational designs, safety management practices, and leadership effectiveness are all intertwined with the national culture in which an organization operates (Yorio et al., 2019).

METHODOLOGY

To assess the state of OHS culture in Serbian organizations, a quantitative survey-based approach was employed. The research instrument was a structured questionnaire consisting of statements grouped into seven key dimensions that reflect the elements of safety culture within organizations: vision, credibility, collaboration, feedback and recognition, responsibility, communication, and action orientation. Each statement was rated using a 3-point Likert scale, ranging from "Never" through "Sometimes" to "Always", enabling respondents to express how frequently they engage in or observe particular OHS-related behaviors in their organizational environment.

The survey was distributed electronically to professionals working in various sectors in Serbia, and 93 responses were collected. The sample included respondents from manufacturing, services, construction, information and communication, public administration, and other sectors.

To better understand the sample profile, several demographic variables were collected and analyzed:

- Gender distribution was nearly balanced: 49% male, 49% female, and 1% preferred not to disclose.
- Age groups were concentrated in the following range: 34% were aged 50-60, followed by 27% in both the 30-40 and 40-50 age groups, while 8% were aged 20-30, and 4% were over 60.
- In terms of educational background, the vast majority (84%) held a university degree, while smaller proportions had higher (9%) or secondary education (1%), or were vocationally trained (1%).

- Work experience levels showed that 33% of respondents had between 10 and 20 years of service, 32% had 20-30 years, 28% had 1-10 years, and 6% had more than 30 years of experience.

These figures indicate that the majority of the respondents are mid-career professionals with substantial experience and higher education, which enhances the reliability of the insights provided on workplace safety culture.

Due to the ordinal nature of the response scale, the analysis was conducted using descriptive statistics, specifically the distribution of responses across the three categories. This approach allowed the identification of patterns in how frequently certain OHS-related behaviors were observed or enacted, and made it possible to highlight which dimensions of safety culture are more or less embedded in practice.

RESULTS AND DISCUSSION

The analysis of the seven dimensions of safety culture provides valuable insights into how OHS is perceived and practiced in Serbian organizations. The data reveals both valuable strengths and notable areas for development.

The responses in the *Vision dimension* (Figure 1) suggest that employees broadly recognize and embody personal standards related to OHS. A large majority consistently affirm that they demonstrate high OHS standards and help others consider their own, indicating a strong foundation of awareness and personal responsibility. However, a slightly lower score on the statement about defining frameworks for future actions suggests opportunities for improved leadership communication and strategic clarity regarding OHS goals.

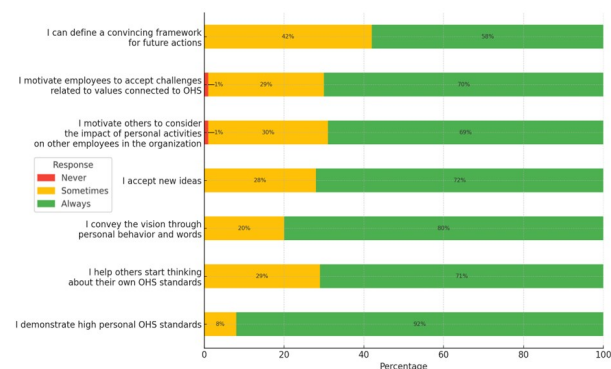


Figure 1. *Vision dimension*

In the *Credibility dimension* (Figure 2), high percentages of "Always" responses for standing up for others reflect a trustworthy interpersonal climate in many organizations. However, lower scores on riskier or career-sensitive behaviors – such as taking on unpopular solutions that benefit employee safety or admitting mistakes in front of others – suggest that systemic or cultural barriers may inhibit full transparency and advocacy. This may indicate that while individual integrity is recognized, institutional support for courageous safety leadership is still evolving.

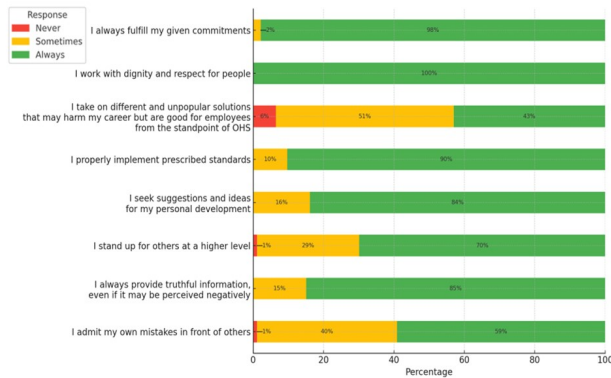


Figure 2. Credibility dimension

The *Collaboration* (Figure 3) results show a very positive trend in some statements. Particularly high values for “being ready to listen” and “helping others” highlight a collaborative mindset. Nonetheless, the slightly reduced responses for gaining consensus before implementing innovations may point to hierarchical communication gaps or decision-making structures that limit inclusive engagement. While the overall results for the Collaboration dimension show relatively positive engagement in teamwork and support for OHS practices, the notably low percentage (26%) of respondents who report always trusting others reveals a critical weakness in the underlying social dynamics of OHS collaboration.

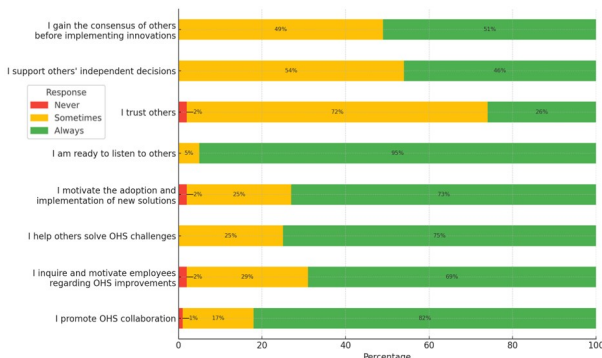


Figure 3. Collaboration dimension

Trust is a cornerstone of effective safety culture, particularly in high-risk work environments where reliance on colleagues' competence, communication, and ethical behavior is essential. The finding that nearly three-quarters of respondents (74%) either only *sometimes* trust others or *never* do so indicates a climate where:

- Interpersonal relationships may be cautious or guarded, especially when dealing with responsibilities tied to safety, compliance, or reporting incidents.
- Employees might hesitate to delegate or accept safety-related advice, out of fear that others may not act responsibly or consistently.
- There is potentially low psychological safety, meaning workers are reluctant to speak up, share near misses, or challenge unsafe behavior due to fear of being blamed, ignored, or misunderstood.

This deficiency in trust not only undermines the effectiveness of collaboration itself but also has broader implications, as it: can reduce team learning and the sharing of best practices; may lead to duplication of effort, lack of coordination, or reluctance to innovate in OHS procedures; and contributes to an atmosphere of risk aversion and siloed behavior, where individuals prioritize their own protection over collective safety improvement.

This issue may stem from several systemic or cultural factors in Serbian organizations: 1) Hierarchical structures where top-down authority prevails, leaving little room for horizontal peer confidence; 2) Previous negative experiences with blame or accountability systems that discourage openness; 3) Lack of team-building interventions or trust-oriented leadership behaviors in OHS implementation.

The *Feedback and Recognition* dimension (Figure 4) shows generally strong engagement from respondents. Most employees report that they always recognize contributions (87%), provide immediate acknowledgment (87%), and give positive feedback tied to successfully implemented safety measures (86%). These high scores reflect a culture where positive reinforcement is a visible and routine part of OHS practices. However, the data also reveals that slightly fewer respondents always celebrate successes (55%) or motivate others consistently (62%), suggesting that while feedback is often delivered in the moment, the broader celebration and institutionalization of recognition may be underutilized. Still, the overall results in this dimension point to a supportive and appreciative safety environment.

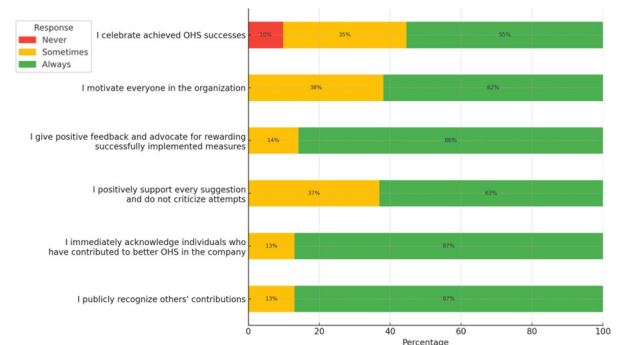


Figure 4. Feedback and Recognition dimension

The *Responsibility* dimension (Figure 5) reveals a generally high degree of commitment to defining and enforcing OHS-related responsibilities. Respondents overwhelmingly state that they *always* promote individual accountability (87%), demand responsibility for assigned tasks (85%), and define roles transparently (78%). However, there is a clear decline in “Always” responses for more process-oriented items: only 57% *always* analyze results based on benchmarks, and just 46% *always* implement changes. This suggests that while responsibilities are clearly articulated and assigned, systematic follow-up and change implementation are less consistently practiced,

highlighting a need for stronger mechanisms for continuous evaluation and adaptation in safety practices.

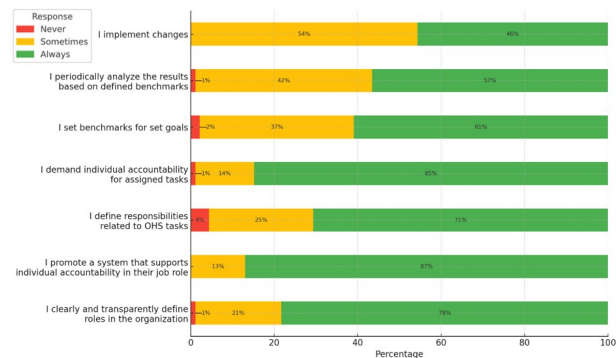


Figure 5. Responsibility dimension

The results in the *Communication dimension* (Figure 6) indicate a generally high level of openness and dialogue within organizations, but with important variation across specific practices. The vast majority of respondents report that they *always* listen carefully (92%) and inform others about OHS events (86%), showing strong tendencies toward respectful and informative interaction. High percentages also support statements like *frequent communication* (73%) and *sharing personal experiences* (78%). These results are supported by other research findings which show that frequent communication and information sharing between employers, employees, and OHS professionals significantly improves the effectiveness of safety measures (Cecaro, Isolani, 2013). However, the relatively lower “Always” responses for *creating an atmosphere for open expression* (68%) and *asking for others’ opinions* (66%) suggest that while communication is active, it may still lean toward one-directional or leadership-centered patterns. This indicates a need to strengthen mutual dialogue and create more psychologically safe environments for open expression and employee-initiated input on OHS issues.

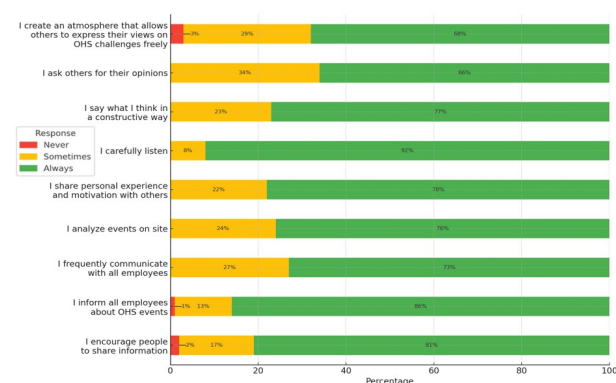


Figure 6. Communication dimension

The *Action Orientation dimension* (Figure 7) reveals a proactive and committed safety culture in most organizations. High percentages of respondents reported that they *always* seize opportunities to improve OHS solutions (84%), set reasonable priorities

(83%), and actively support the resolution of safety challenges (82%). These figures reflect a strong inclination toward engaged and purposeful behaviour in managing workplace risks. However, slightly lower scores for being relentless in solving challenges (59%) and innovative in problem-solving (62%) suggest that while employees are action-oriented, they may face constraints in persistence or creative autonomy, possibly due to procedural rigidity or resource limitations. Strengthening innovation and resilience in response to OHS problems could further enhance this otherwise solid dimension.

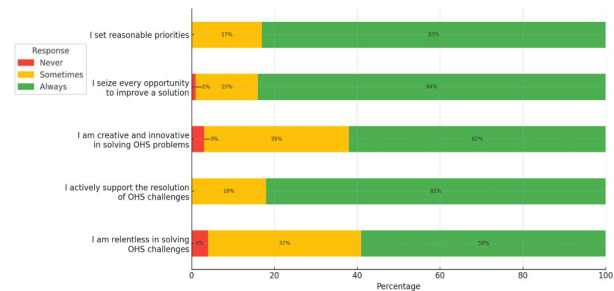


Figure 7. Action Orientation dimension

CONCLUSION

The analysis of safety culture across seven key dimensions – vision, credibility, collaboration, feedback and recognition, responsibility, communication, and action orientation – reveals that Serbian organizations demonstrate strong individual commitment to OHS. Many employees take initiative, support their colleagues, and recognize good safety practices. There is clear evidence of action-oriented behavior, open communication, and appreciation for safety achievements. These are important strengths that reflect a positive safety culture at the personal level.

However, several challenges persist. A significant concern is the low level of interpersonal trust, which undermines the potential for genuine collaboration and shared accountability. In addition, although responsibilities are often clearly defined, there are weaknesses in implementing follow-up mechanisms, such as benchmark-based evaluations or feedback loops. The findings also suggest that communication, while generally active, can still be top-down rather than participatory, limiting employee input in shaping safety initiatives. Finally, innovation and sustained action in OHS may be constrained by procedural rigidity or lack of empowerment.

To improve these areas, organizations may need to move beyond a focus only on individual behavior. Instead, they should work toward more integrated and inclusive approaches to managing safety. This means involving employees in decision-making, encouraging open and honest discussions, and creating a work environment where everyone feels safe to speak up. Clear leadership, shared responsibility, and regular evaluation of safety efforts are key to building a stronger, more sustainable safety culture. By making these changes, organizations can close the gap between good intentions and lasting improvement.

ACKNOWLEDGEMENTS

This paper is part of the research done within the Bilateral Project Slovenia-Serbia (No. 337-00-110/2023-05/52), and supported by the Ministry of Science, Technological Development and Innovation of the Republic of Serbia pursuant to the agreement No. 451-03-137/2025-03/200148, and contributes to SDG 8.

REFERENCES

- Bautista-Bernal, I., Quintana-García, C., & Marchante-Lara, M. (2024). Safety culture, safety performance and financial performance. A longitudinal study. *Safety science*, 172, 106409. <https://doi.org/10.1016/j.ssci.2023.106409>
- Cecaro, M., & Isolani, L. (2013). The Value of a Successful Communication in the Workplace Prevention. *Journal of Mass Communication and Journalism*, 2014, 1-1. <https://doi.org/10.4172/2165-7912.S1-E001>.
- EU-OSHA – European Agency for Safety and Health at Work (2021). *An international comparison of the cost of work-related accidents and illnesses*. https://osha.europa.eu/sites/default/files/2021-11/international_comparison_of_costs_work_related_accidents.pdf
- Živković, S., Rađenović, T. (2025). *Managerial and Economic Aspects of Occupational Health and Safety* [Upravljački i ekonomski aspekti bezbednosti i zdravlja na radu]. Niš: Faculty of Occupational Safety in Niš [Niš: Fakultet zaštite na radu u Nišu].
- ILO – International Labour Organization (2023). *A call for safer and healthier working environments*. https://www.ilo.org/sites/default/files/wcmsp5/groups/public/%40ed_protect/%40protrav/%40safework/documents/publication/wcms_903140.pdf
- Mixafenti, S., Moutzouri, A., Karagkouni, A., Sartzetaki, M., & Dimitriou, D. (2025). Assessment of Occupational Health and Safety Management: Implications for Corporate Performance in the Secondary Sector. *Safety*, 11(2), 44. <https://doi.org/10.3390/safety11020044>
- Rađenović, T. (2023). Analysis of the accidents at work in the European Union. *Facta Universitatis, Series: Working and Living Environmental Protection*, 20(3), 157-166. <https://doi.org/10.22190/FUWLEP2303157R>.
- Todorović, M., Živković, S., Nikolić, V., & Markič, M. (2012). The influence of organizational culture of management on occupational safety. *Technics Technologies Education Management-TTEM*, 7(4), 1760-1767.
- Yorio, P. L., Edwards, J., & Hoeneveld, D. (2019). Safety culture across cultures. *Safety science*, 120, 402-410. <https://doi.org/10.1016/j.ssci.2019.07.021>