

THE SAFETY CULTURE IN TEXTILE INDUSTRY COMPANIES IN POLAND

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Purpose: The aim of this article is to analyse the safety culture in selected Polish textile enterprises and to understand employees' perception of occupational safety.

Methodology: The study was conducted in two Polish textile companies using three data collection methods: (1) employee surveys, (2) interviews with management and safety specialists, and (3) observations of working conditions on the production floor. The survey consisted of 50 questions, including a demographic section and questions on safety culture, assessed on a five-point Likert scale.

Findings: Data analysis revealed significant correlations between demographic variables and perceptions of safety. It was found that length of service affects awareness of hazards and compliance with safety rules. Employees' involvement in safety-related activities was strongly related to their perception of the level of safety in the workplace. Surprisingly, the level of education did not show a significant correlation with the perception of safety culture. Additionally, a relatively low sense of safety was noted among employees, which may be due to insufficient actions on the part of management or lack of access to appropriate personal protective equipment.

Originality/value: The article contributes to the development of safety culture theory by analyzing its aspects in the context of the Polish textile industry. It provides practical guidelines for companies striving to improve their safety performance, which in the long term can contribute to building a safer and more responsible work environment in this industry.

Keywords: safety culture, textile industry, work safety, occupational health and safety (OHS), safety management.

Category of the paper: Research paper.

1. Introduction

The Polish textile and clothing (T/C) industry is one of the key sectors of the national economy, providing employment to approximately 150,000 workers, mainly in small and medium-sized enterprises (SMEs). It operates under highly competitive market conditions, the consequences of which affect not only the structure of the sector but also working conditions and occupational risk. According to data from Statistics Poland (GUS) (<https://stat.gov.pl/>), around 1,200 companies operate in the T/C sector in Poland. Data from the Polish Agency for Enterprise Development (PARP) (<https://en.parp.gov.pl/>) indicate that in 2022 the fashion and modern textiles markets comprised more than 36,000 business entities. The value of the apparel market reached PLN 53.3 billion, of which 78.3% was generated through brick-and-mortar sales. In 2019, Poland was the fifteenth largest exporter of clothing and textiles worldwide, and its market is considered one of the most attractive in Central and Eastern Europe.

The structure of this sector, dominated by micro, small and medium-sized enterprises (SMEs), translates into specific characteristics of occupational safety management. Studies on the Polish T/C industry indicate that this branch is strongly integrated into international supply chains, where planning, sourcing, production, and distribution processes play a key role. The cost pressure often results in the relocation of production processes to countries with lower occupational and environmental safety standards.

T/C enterprises account for approximately 8% of companies classified within manufacturing (Section C - Manufacturing) according to the Polish Classification of Activities (PKD), which is aligned with the European NACE Rev. 2 classification system and applied by Statistics Poland. Employment in these industries represents around 7% of total employment in Section C. Women constitute the dominant group of employees, accounting for approximately 76% of the workforce. The demographic employment structure, combined with repetitive work tasks, high productivity intensity, and exposure to physical and chemical agents, highlights the importance of a systemic approach to occupational health and safety (OHS) management.

Approximately 60% of production facilities in the T/C sector are concentrated in five locations in Poland: Łódź, Poznań, Wrocław, Katowice, and the Kuyavian-Pomeranian Voivodeship. Such strong geographical concentration enables the development of specialized industrial clusters, but it may also contribute to the consolidation of specific organizational patterns and safety practices, making the analysis of safety culture in this sector particularly relevant from a systemic perspective (Jabłońska et al., 2022).

The Polish T/C industry, with its long-standing traditions and significant contribution to the economy, is currently undergoing dynamic transformation. It must adapt to contemporary challenges and market trends, including rapidly changing consumer expectations, compliance with environmental standards, technological progress, occupational safety requirements, and the development of safety culture. Digital transformation, the implementation of process

innovations, and the development of information and communication technologies (ICT) affect not only operational efficiency but also the nature of occupational hazards and the ways in which they are perceived by employees.

The specificity of T/C production processes - spinning, weaving, dyeing, and finishing - creates a complex work environment in which risk is multifactorial and cumulative. Textile workers are exposed to numerous hazards, including (Farhan et al., 2025):

1. Physical hazards, such as excessive noise, inadequate lighting, poor ventilation, exposure to high temperatures, cluttered and disorganized workstations, blocked emergency exits (especially in the event of fire), and inadequate sanitary conditions, including limited access to clean drinking water and separate sanitary or social facilities;
2. Chemical hazards, such as long-term exposure to cotton dust, toxic emissions from dyes, inhalation of textile dust and machine-generated particles, and contact with hazardous chemicals (liquids, solids, dusts, vapors, gases);
3. Biological hazards, including exposure to bacteria, viruses, infectious waste, or infestations;
4. Psychosocial hazards, such as psychological stress and mental health imbalance.

Research indicates that the most common occupational diseases in the textile sector include respiratory illnesses, followed by reproductive disorders, noise-induced hearing loss, cardiovascular and visual problems, neurotoxicity, various dermatological conditions, and psychological stress (Edwards et al., 2013). This underscores the need to integrate technical, organizational, and behavioural measures to effectively reduce occupational risk.

Numerous studies on safety culture have been published, including theoretical reviews and conceptual analyses (Uttal, 1983; Schein, 1985; Turner et al., 1989; Pidgeon, 1991; Cox, Cox, 1991; Ostrom et al., 1993; Geller, 1994; Berends, 1996; Studenski, 2000; Mearns et al., 2003; Von Thaden, Gibbons, 2008; Kocaj, 2024; Kucińska-Król et al., 2024). Safety culture - understood as a set of values, beliefs, norms, and practices shaping employees' attitudes, behaviors, and decisions in the face of occupational hazards - plays a crucial role in improving working conditions and reducing accident rates (Al-Wardi, 2017; Ben-Saed, Pilbeam, 2022). The primary objective of safety management is not merely compliance with procedures, but the development of an organizational culture in which safety becomes embedded in everyday practice and employee engagement is treated as an integral component of organizational functioning (Chan, Li, 2022; Kwon, 2020).

Particularly in the context of the Polish T/C sector, which is currently adapting to environmental standards and technological advancement, an effective safety culture is essential to ensure the protection of employees' health and lives, as well as the long-term efficiency and competitiveness of enterprises. Studies published in Safety Science indicate that safety culture influences safety outcomes both directly - by shaping safe behaviours - and indirectly, through safety climate, leadership, and organizational communication, thereby affecting safety performance (Mearns et al., 2003; Arzahan et al., 2022).

In the scientific literature, safety culture is identified as a dynamic set of beliefs, attitudes, and behaviours that shape employees' perception of workplace hazards and occupational risk. According to Guldenmund (2000), safety culture encompasses both technical and social aspects, aiming to minimize risk and actively involve employees in safety-related decision-making processes. Several theoretical models explain the mechanisms underlying safety culture formation, including the model developed by the Health and Safety Executive (HSE) (Nicholson, Roebuck, 1995; Blanc, 2022). This model emphasizes that genuine safety culture cannot be developed without organization-wide engagement in occupational safety issues and highlights the need to integrate safety culture into overall corporate strategy.

According to Truong and Lee (2025), companies seeking improved OHS performance should invest in employee competence development and awareness while fostering a culture of openness and communication regarding hazards. In the context of changes in the T/C industry, safety management should not be limited to the implementation of procedures but should focus on building a culture that supports employees and actively engages them in safety-related processes. Conceptualizing safety culture as a continuous improvement process that adapts to evolving organizational needs, technological change, and employee attitudes is therefore essential. In this context, employee education and training - combining theoretical knowledge about hazards with practical skills enabling rapid and effective responses - play a central role.

It should be noted that most empirical studies have focused on high-risk sectors such as energy, aviation, construction, and the chemical industry, whereas traditional manufacturing sectors, including T/C, remain relatively underrepresented in international research.

In studies of the Polish T/C sector, economic analyses, enterprise structure, innovation levels, and participation in global supply chains have predominated (Sadowski et al., 2021). Only few studies have simultaneously examined organizational determinants of safety culture and individual risk perception within the context of SME dominance and strong cost pressure resulting from global competition (Jurek, 2024; Zysiński, Krysiuk, 2018).

Based on the literature review, the following gaps concerns three interrelated areas were identified: (1) the insufficient number of studies on safety culture in the textile sector in Central and Eastern Europe, (2) the lack of analyses linking the organizational level (management, leadership, formal OHS systems) with the individual level (risk perception, attitudes, behaviors), and (3) the limited application of mixed-methods approaches in safety research within traditional industrial sectors.

Based on these premises, the following research questions (RQs) were formulated:

RQ1: How is the perceived managerial commitment to safety associated with the level of safety culture in the enterprise?

RQ2: What is the relationship between the level of safety culture and employees' perception of occupational risk?

RQ3: Does risk perception mediate the relationship between organizational determinants of safety culture and employees' self-reported safe behaviours?

RQ4: Do structural characteristics of the enterprise (such as size, level of procedural formalization, and degree of integration into the global supply chain) moderate the relationship between safety culture and employees' safe behaviours?

Based on these premises, the aim of this article is to conduct a detailed analysis of safety culture in selected Polish T/C enterprises and to understand how employees perceive occupational safety issues. By means of a mixed-methods design that combines quantitative survey analysis with qualitative examination of the organizational context, the study provides an in-depth exploration of the mechanisms shaping occupational safety in the T/C sector characterized by relatively low technological intensity and substantial exposure to physical and chemical hazards.

The findings are significant both theoretically - by expanding the body of knowledge on safety culture in the textile and clothing (T/C) sector, and practically, as they offer evidence-based recommendations for enterprises.

2. Methodology

2.1. Research Design

The study was conducted using a mixed-methods research approach, integrating quantitative and qualitative components. This design enabled the identification of determinants shaping safety culture at the organizational level, as well as individual risk perception and self-reported safety behaviours among employees. The study had a cross-sectional design.

To enhance the robustness and credibility of the findings, methodological triangulation was applied, including: (1) an employee survey, (2) semi-structured interviews with managers and occupational health and safety (OHS) specialists, and (3) systematic workplace observations conducted on the production floor. This approach enabled data triangulation and cross-validation of findings derived from multiple sources, thereby strengthening the interpretative depth of the analysis.

2.2. Sampling and Research Procedure

An invitation to participate in the study was sent to 21 textile and clothing (T/C) enterprises in Poland using purposive sampling, ensuring variation in company size and type of economic activity. In the end, only two enterprises agreed to participate in the study.

Surveys were administered directly at the workplace under conditions ensuring full anonymity and confidentiality. Supervisors were not involved in the administration process, thereby minimizing potential response bias and social desirability effects.

Semi-structured interviews were conducted with members of top management and OHS specialists to obtain an in-depth understanding of the existing safety management systems and to identify organizational barriers affecting safety performance.

Observational research was conducted in a non-participatory manner and focused primarily on workstation organization, use of personal protective equipment (PPE), compliance with OHS procedures, and adherence to safety signage and regulations.

2.3. Research Instruments

The quantitative component was based on a structured questionnaire consisting of two sections: (1) control variables - demographic and occupational characteristics (gender, age, level of formal education, job position, length of service); (2) main variables - 50 statements measuring dimensions of safety culture, including perceived management commitment to safety, compliance with OHS procedures, hazard communication, employee involvement in safety-related activities, and subjective sense of workplace safety.

Respondents evaluated each statement using a five-point Likert scale:

- 1 - strongly disagree,
- 2 - rather disagree,
- 3 - neutral / no opinion.
- 4 - rather agree,
- 5 - strongly agree.

For the purposes of this article, eight items (V1-V8) were selected from the original 50-item pool to operationalize key components of safety culture and safety perception (see Table 1).

Table 1.
Question database

Symbol	Question
V1	In our workplace, everyone places great importance on continuously improving health and safety standards.
V2	In our workplace, safety and hygiene are just as important as production and quality.
V3	Employees and supervisors have the necessary knowledge to work safely.
V4	Employees are always actively involved in decision-making regarding their health and safety.
V5	I receive timely information about work-related hazards.
V6	I feel safe as an employee.
V7	I participate in activities aimed at improving safety, such as serving on committees, analyzing accidents, or developing safety rules and occupational health and safety training.
V8	My workplace is safe.

Internal consistency reliability was assessed using Cronbach's alpha, which reached 0.87, indicating high internal consistency. Additionally, the correlational structure of the items was examined to confirm their alignment with the assumed theoretical framework and the adequacy of construct operationalization.

Semi-structured interviews followed a predefined interview guide covering: (1) organization of the safety management system, (2) the role of leadership in shaping safety culture, (3) challenges related to compliance with OHS regulations, (4) preventive and training activities.

Complementary workplace observations were conducted on the production floor to identify potential hazards related to work organization and compliance with safety procedures. Observations enabled the identification of safety issues that may not have been fully captured through survey responses or interviews but have a direct impact on employee safety.

2.4. Research Model

The study employed a multilevel conceptual model (Fig. 1), enabling analysis of relationships between variables at both the organizational (company) and individual (employee) levels.

Organizational level (company): (1) safety culture - perceived safety values and norms within the enterprise; (2) management commitment - active managerial support for OHS initiatives; (3) safety communication - effectiveness of information flow regarding hazards, procedures, and incidents. Organizational-level outcomes include safety results, such as the number of incidents and procedural violations.

Individual level (employee): (1) safety perception - perceived protection and risk at the workplace; (2) safety behaviour - self-reported and observed OHS-related behaviours.

The final outcome variable is safety performance, encompassing both individual safety behaviours and objective safety indicators at the organizational level. This multilevel framework allows for the examination of direct and indirect relationships between organizational determinants and employee-level outcomes, supporting the subsequent testing of mediation and moderation effects within a structural modelling approach.

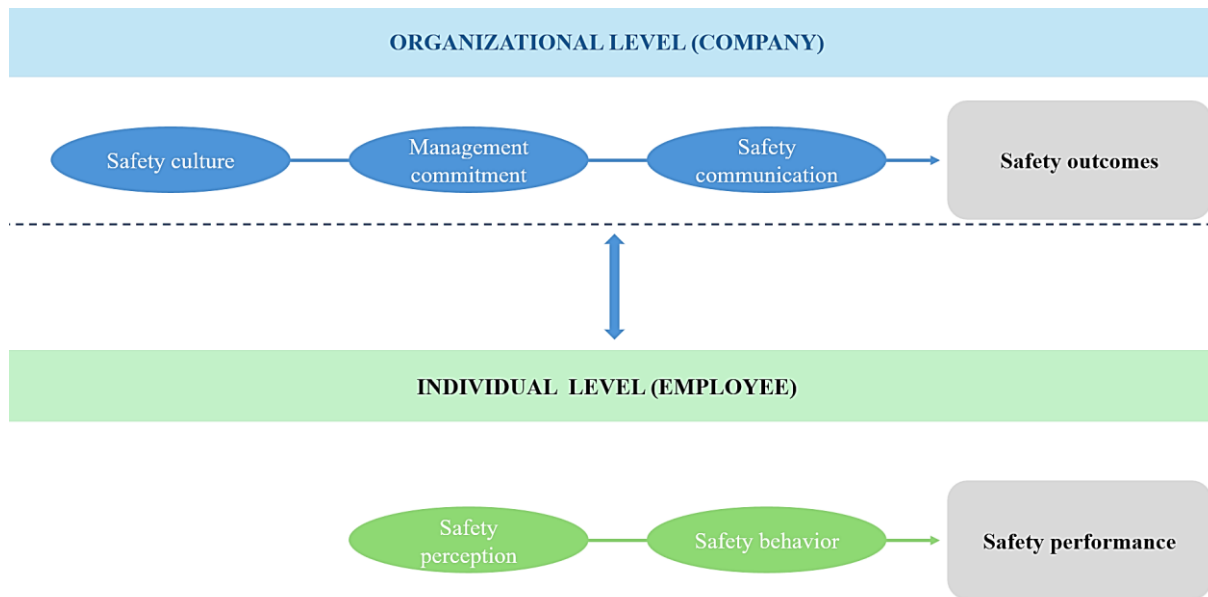


Figure 1.1 Hierarchical model of occupational safety.

Source: Own study.

2.5. Data Analysis

Quantitative data were subjected to statistical analysis using STATISTICA 13 software and included: (1) descriptive statistics - mean and standard deviation, (2) correlation analysis between variables, and (3) multilevel modelling - examining relationships between variables at the organizational and individual levels.

Qualitative data (interviews and observations) were analysed using content and thematic analysis, which enabled the identification of recurring patterns and a more in-depth interpretation of the results.

The integration of quantitative and qualitative data was carried out at the interpretation stage, allowing for a more comprehensive understanding of the relationships identified within the studied enterprises.

2.6. Ethical Considerations

Each participant was informed about the anonymous nature of the study, the confidentiality of their responses, and the fact that the collected data would be used exclusively for scientific purposes.

3. Results

The study involved 110 people, and the participants were only women, which means that in Poland, the textile industry is mainly staffed by women. The analysis of demographic data have indicated that the majority of respondents were middle-aged. The largest proportion belonged to the 46-50 age group (51.8%), followed by those aged 41-45 (46.4%). In contrast, only 1.8% of participants were between 31 and 35 years old. The vast majority of the survey participants have professional experience in the textile industry. Half of the respondents have been working in the company for over 14 years, 47.3% of the respondents have 12 to 14 years of experience. Only 1.8% of people have 3 to 5 years of experience, and 0.9% - 6 to 8 years. Based on the analysis, it results that the textile industry in Poland is dominated by employees with long service

In terms of education, the majority of the study participants have completed primary school (60.9%), vocational school (34.5%), secondary school (3.6%) and higher education (0.9%), which may indicate the practical nature of work in the textile industry and a lower demand for higher education in this industry. The demographic profile of the respondents is presented in Table 2.

Table 2.
Demographic characteristics of the respondents

Demographic factor	Demographic relationships			
Gender	Male 0	Female 110 (100 %)		
Age	31-35 2 (1.8 %)	41-45 51 (46.4 %)	46-50 57 (51.8 %)	
Professional experience	3-5 2 (1.8 %)	6-8 1 (0.9 %)	12 -14 52 (47.3 %)	14 and more 55 (50%)
Education level	Primary education 38 (34.5 %)	Vocational education 67 (60.9 %)	High School 4 (3.6 %)	Bachelor/ Master and above 1 (0.9 %)

Then, due to the qualitative data obtained from the conducted survey questionnaire, the values of Spearman's rank correlation coefficients were estimated along with the p coefficient value defining the significance of the obtained results ($p < 0.05$). At the beginning, however, the data were ranked and then calculations were performed using STATISTICA 13 software. The following designations were adopted: AR - age range, LoE - level of education, PE - professional experience. The remaining variable designations (V1-V8) denote the statements from Table 1. For example, V1 denotes the first statement: *In our workplace, everyone attaches great importance to the continuous improvement of occupational health and safety standards*. The results of all correlations are presented in Table 3, while Table 4 has been limited to selected categories.

Table 3.
Spearman's Rank Order Correlation

Variable	AR	LoE	PE	V1	V2	V3	V4	V5	V6	V7	V8
AR	1	-0.034	0.038	-0.113	-0.014	-0.112	-0.130	-0.095	-0.107	0.022	0.037
LoE	-0.034	1	0.028	0.080	0.092	-0.150	0.014	-0.231	-0.18	-0.139	-0.097
PE	0.038	0.028	1	0.055	-0.029	-0.154	-0.072	-0.039	-0.112	0.130	0.203
V1	-0.113	0.08	0.055	1	0.307	0.290	0.222	0.170	0.143	0.138	0.120
V2	-0.014	0.092	-0.029	0.307	1	0.047	-0.107	0.056	0.037	-0.089	0.013
V3	-0.112	-0.150	-0.154	0.290	0.047	1	0.377	0.308	0.347	0.013	0.084
V4	-0.130	0.014	-0.072	0.222	-0.107	0.377	1	0.441	0.425	0.285	0.183
V5	-0.095	-0.231	-0.039	0.17	0.056	0.308	0.441	1	0.481	0.079	0.02
V6	-0.107	-0.180	-0.112	0.143	0.037	0.347	0.425	0.481	1	0.084	-0.026
V7	0.022	-0.139	0.130	0.138	-0.089	0.013	0.285	0.079	0.084	1	0.350
V8	0.037	-0.097	0.203	0.120	0.013	0.084	0.183	0.02	-0.026	0.350	1

Table 4.
Spearman's Rank Order Correlation

Variable	AR	LoE	PE	V1	V2	V3	V4	V5	V6	V7	V8
AR	1.000	-0.034 (0.725)	0.038 (0.697)	-0.113 (0.239)	-0.014 (0.884)	-0.112 (0.243)	-0.130 (0.176)	-0.095 (0.322)	-0.107 (0.267)	0.022 (0.817)	0.037 (0.704)
LoE	-0.034 (0.725)	1.000	0.028 (0.772)	0.080 (0.405)	0.092 (0.337)	-0.150 (0.119)	0.014 (0.886)	-0.231 (0.015)	-0.180 (0.060)	-0.139 (0.147)	-0.097 (0.316)
PE	0.038 (0.697)	0.028 (0.772)	1.000	0.055 (0.568)	-0.029 (0.763)	-0.154 (0.107)	-0.072 (0.455)	-0.039 (0.682)	-0.112 (0.246)	0.130 (0.177)	0.203 (0.034)
V1	-0.113 (0.239)	0.080 (0.405)	0.055 (0.568)	1.000	0.307 (0.001)	0.290 (0.002)	0.222 (0.020)	0.170 (0.077)	0.143 (0.135)	0.138 (0.150)	0.120 (0.213)
V2	-0.014 (0.884)	0.092 (0.337)	-0.029 (0.763)	0.307 (0.001)	1.000	0.047 (0.624)	-0.107 (0.266)	0.056 (0.563)	0.037 (0.700)	-0.089 (0.357)	0.013 (0.893)
V3	-0.112 (0.243)	-0.150 (0.119)	-0.154 (0.107)	0.290 (0.002)	0.047 (0.624)	1.000	0.377 (0.000)	0.308 (0.001)	0.347 (0.000)	0.013 (0.896)	0.084 (0.382)
V4	-0.130 (0.176)	0.014 (0.886)	-0.072 (0.455)	0.222 (0.020)	-0.107 (0.266)	0.377 (0.000)	1.000	0.441 (0.000)	0.425 (0.000)	0.285 (0.003)	0.183 (0.055)
V5	-0.095 (0.322)	-0.231 (0.015)	-0.039 (0.682)	0.170 (0.077)	0.056 (0.563)	0.308 (0.001)	0.441 (0.000)	1.000	0.481 (0.000)	0.079 (0.412)	0.020 (0.836)
V6	-0.107 (0.267)	-0.180 (0.060)	-0.112 (0.246)	0.143 (0.135)	0.037 (0.700)	0.347 (0.000)	0.425 (0.000)	0.481 (0.000)	1.000	0.084 (0.381)	-0.026 (0.784)
V7	0.022 (0.817)	-0.139 (0.147)	0.130 (0.177)	0.138 (0.150)	-0.089 (0.357)	0.013 (0.896)	0.285 (0.003)	0.079 (0.412)	0.084 (0.381)	1.000	0.350 (0.000)
V8	0.037 (0.704)	-0.097 (0.316)	0.203 (0.034)	0.120 (0.213)	0.013 (0.893)	0.084 (0.382)	0.183 (0.055)	0.020 (0.836)	-0.026 (0.784)	0.350 (0.000)	1.000

There are only a few statistically significant correlations between the traits, among them a negative correlation ($r_s = -0.231$, $p = 0.015$) between the level of education and the answer to the statement (V5) "I receive information on work-related hazards in a timely manner". The result suggests that a higher level of education (LoE) may be associated with lower agreement with this opinion (V5). In turn, a positive correlation ($r_s = 0.203$, $p = 0.034$) occurred between work experience and the answer to the question (V8) "My workplace is safe". It follows that the greater the employee's experience (PE), the greater the perceived safety at work (V8).

As well as significant and positive correlations are observed between the answers to the questions in Table 1:

- V1 vs. V2 ($r_s = 0.307$, $p < 0.001$) - the higher the agreement with the opinion that everyone attaches great importance to continuous improvement of occupational health and safety standards, the greater the agreement with the opinion that health and safety are as important as production and quality.
- V1 vs. V3 ($r_s = 0.290$, $p = 0.002$) - the higher the agreement with the opinion that everyone attaches great importance to continuous improvement of occupational health and safety standards, the greater the agreement with the opinion that employees and supervisors have the necessary knowledge to work safely.
- V1 vs. V4 ($r_s = 0.222$, $p = 0.020$) - the higher the agreement with the opinion that everyone attaches great importance to the continuous improvement of occupational health and safety standards, the greater the agreement with the opinion that employees are always actively involved in making decisions concerning their health and safety.

In addition, significant and positive correlations are observed between the statements:

- V3 vs. V4 ($r_s = 0.377$, $p < 0,001$).
- V3 vs. V5 ($r_s = 0.308$, $p < 0,001$).
- V3 vs. V6 ($r_s = 0.347$, $p < 0,001$).
- V4 vs. V5 ($r_s = 0.441$, $p < 0,001$).
- V4 vs. V6 ($r_s = 0.425$, $p < 0,001$).
- V4 vs. V7 ($r_s = 0.285$, $p = 0,003$).
- V5 vs. V6 ($r_s = 0.481$, $p < 0,001$).
- V7 vs. V8 ($r_s = 0.350$, $p < 0,001$).

The highest correlation coefficient value concerns opinions V5 vs. V6 ($r_s = 0.481$, $p < 0.001$), which suggests that opinions that respondents receive timely information about work-related hazards and feel safe as employees are correlated.

It should be noted, however, that correlation does not mean causality, therefore the analyzed factors may be non-causally correlated with respect to a third variable, e.g. a common cause or mediator.

4. Discussion

Based on the results of the survey research on safety culture in Polish T/C sector enterprises, several aspects can be identified that significantly influence the shaping of working conditions and employees' perception of safety. The findings should be interpreted in relation to the four research questions (RQ1-RQ4) presented in the introduction, which were grounded in the assumption that the relationships between organizational determinants, risk, and employees' safe behaviours are complex and multilevel in nature. This approach is consistent with

multilevel models of safety culture and safety climate developed in the Safety Science literature (Mearns et al., 2003; Arzahan et al., 2022).

With regard to RQ1, which concerns the relationship between perceived managerial commitment to safety and the level of safety culture within the enterprise, the analysis revealed significant and positive correlations between variables related to the prioritization of safety (V1), the balance between safety and production (V2), and competence in safe work practices (V3). These relationships form a coherent pattern. In this context, employees' perceptions of organizational norms appear internally consistent and mutually reinforcing, indicating a meaningful association between managerial commitment and the overall level of safety culture.

The above results are consistent with models presented in the literature, which indicate that safety leadership and visible managerial commitment constitute the foundation of safety culture (Mearns et al., 2003; Neal, Griffin, 2006; Dothang Truong, Lee, 2025; Pratama, Caponecchia, 2025; Smolarek, Sułkowski, 2020). In T/C enterprises, managerial commitment appears to play a norm-setting role, shaping the perception that safety is an organizational value rather than merely a formal requirement.

These findings suggest that safety culture does not function solely as an abstract organizational construct; rather, it translates into the way employees interpret workplace hazards. The results therefore indicate that specific components of safety culture, particularly communication and participation, are significantly associated with the subjective assessment of workplace safety.

From a theoretical perspective, this may be interpreted as confirmation that safety climate functions as a cognitive framework through which employees evaluate the level of risk (Neal, Griffin, 2006; Pidgeon, 1991). This is consistent with Guldenmund's (2000) proposition that safety culture encompasses both technical and social aspects. Similar conclusions were drawn by Mearns et al. (2003), who demonstrated that safety climate influences individual risk assessments and safe behaviours.

With reference to RQ3, which addressed the potential mediating role of perceived risk between organizational determinants of OHS culture and employees' self-reported safe behaviours, the observed pattern of correlations suggests the possible existence of a chain of relationships. Although confirmation of mediation effects requires more than correlation analysis alone, the results indicate that hazard communication (V5) may influence perceived safety (B6), which in turn may affect engagement in OHS activities (V7), ultimately influencing the assessment of workplace safety (V8).

In this case, a significant relationship was observed between V7 and V8, suggesting that engagement in OHS-related activities may be associated with an improved level of safety. These findings point to a potential mediating mechanism consistent with the logic of RQ3. However, its verification would require the application of Structural Equation Modelling (SEM), within which the proposed mediational pathways could be formally tested, in line with

established research approaches in safety climate studies. The results also confirm previous findings regarding the influence of organizational support and safety climate on the development of safe behaviours through cognitive and motivational processes (Neal, Griffin, 2006).

With regard to RQ4, which concerns the role of structural characteristics of the enterprise as moderators of the relationship between safety culture and safe behaviours, empirical verification was limited due to the small number of analyzed entities, only two T/C enterprises were included in the study. Nevertheless, qualitative findings suggest that factors such as the level of procedural formalization and management style may differentiate the ways in which hazards are communicated and employees are engaged.

These observations indicate that structural characteristics may influence the manner in which safety culture affects employee behaviour. To adequately assess the assumptions of RQ4, a comparative analysis of a larger number of companies representing diverse structural profiles would be required.

In the T/C sector, where SMEs operate under strong cost pressure, structural constraints may limit the potential for investment in systematic safety management, thereby influencing the extent to which safety culture affects employee behaviour.

The results also indicate that certain demographic characteristics are associated with the level of perceived safety. Metaphorically speaking, the longer an individual works in a particular workplace, the more strongly they perceive a certain level of safety. This may suggest that employees “mature” within a specific work environment, developing their own coping strategies and experiential knowledge. The lack of a clear relationship between formal education and the level of safety culture perception may indicate that, in the T/C sector, practical experience and everyday learning play a more significant role than formally acquired knowledge.

Overall, the study provides partial support for the proposed theoretical model and indicates the existence of a multilevel safety culture mechanism in the T/C sector linking organizational norms, risk perception, and employee behaviour.

From a theoretical perspective, the study addresses a research gap by empirically linking organizational and individual level determinants in the T/C sector, which remains underrepresented in international research.

From a practical perspective, the findings confirm the assumption that an effective strategy for enhancing safety levels in T/C enterprises should integrate four key elements: visible managerial commitment, open and transparent hazard communication, employee engagement, and the development of safety-related competencies. At the same time, the cross-sectional nature of the study limits the possibility of drawing causal inferences.

Future research should focus on longitudinal study designs and the application of Structural Equation Modelling. In particular, it would be valuable to examine the mediating and moderating mechanisms described in RQ3 and RQ4.

The conclusions emphasize that the development of safety culture in the Polish textile industry requires a multidimensional approach, encompassing both education and training as well as the active involvement of employees and management in the continuous improvement of working conditions. Further research should also consider the impact of technological changes and environmental requirements on occupational safety in this sector, which may contribute to a more comprehensive approach to improving employment conditions.

5. Conclusion

The results of the study on safety culture in the textile industry confirm a clear relationship between demographic characteristics and the perception of safety culture. The findings indicate that longer job tenure is associated with greater hazard awareness and better compliance with occupational health and safety regulations. Participation in training and practical engagement in safety-related activities also have a positive impact. An interesting result is that the level of formal education does not show a significant correlation with the perception of safety culture, suggesting that practical experience may be more important than formal qualifications. However, the relatively low sense of safety reported by employees points to the need for improved communication and stronger managerial commitment. The study's conclusions highlight the necessity of a multidimensional approach to enhancing safety culture, encompassing education as well as the active involvement of both employees and managers in occupational safety processes.

In conclusion, the findings emphasize that the development of safety culture in the Polish textile industry requires a multidimensional approach encompassing education and training, as well as active involvement of both employees and managers in the continuous improvement of working conditions.

Future research should focus on the impact of technological and environmental changes on occupational safety in the textile industry in order to fully understand and improve working conditions in this sector.

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