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# ASSESSING THE MATURITY OF A SAFETY CULTURE IN A MANUFACTURING COMPANY – A CASE STUDY

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**Purpose:** The aim of this article is to verify the maturity level of the safety culture in a manufacturing company, which has evolved as a result of the implementation of a safety improvement program in the years 2021-2024.
**Design/methodology/approach**: The study used a case study method, enabling an in-depth analysis of the process of implementing solutions to improve safety. For the purposes of mapping the safety culture carried out in 2021-2024, an analysis of key organisational documents and behavioural observation (BBS) was conducted, focused on identifying behaviours conducive to undesirable events and shaping safe attitudes among employees. The diagnosis was based on a proprietary tool built on the Bradley Curve and the Safety Culture Mapping matrix. Twelve safety dimensions were assessed, covering the areas of leadership, organisation, and processes and activities (including policy and strategy, requirements and standards, performance management, structure and roles, resources, awareness and motivation, attitudes, communication, incident investigation, observations and audits, learning and development).
**Findings:** The results of the study show that in 2021, the maturity of the safety system was low, with relatively strong incident investigation and audit practices, but significant deficits in the areas of policy, strategy and planning, performance management, communication and employee motivation. In response to the low results, an integrated improvement programme based on the CLEAR strategy and Operation Compass was implemented, which strengthened the consistency of actions by formalising policies, clarifying roles, incorporating safety objectives into bonus and promotion mechanisms, and multi-channel communication. Behavioural observations became a key operational intervention. As a result, by 2024, a significant increase in maturity was recorded in most of the dimensions examined. A decrease in accidents has been confirmed, which, together with the standardisation of accident investigations and improved reporting, indicates that integrated, data-driven safety management characterises the organisation as a learning organisation that strengthens the safety culture and reduces risk and operating costs.
**Research limitations/implications**: Due to the case study nature of the research, the research tools have not been validated, which is recommended when applying them to another company. The tools presented can serve as an example for the implementation, evaluation, and use of similar instruments in manufacturing and service companies.

**Practical implications:** The tools presented can be used for benchmarking analysis in the context of measuring safety culture.
**Social implications:** The research indicates a strengthening of proactive attitudes among employees, leading to a reduction in accidents and the development of a culture of trust and learning within the company.
**Originality/value:** The originality of the research lies in the presentation of a combination of various tools, thanks to which a company can take steps to improve its safety culture.
**Keywords:** safety, safety culture, Safety Culture Mapping, Behaviour Based Safety.
**Category of the paper:** Case study, Research paper.

## 1. Introduction

Contemporary organisations operate in conditions of highly complex processes, cost and technological pressure, and constantly growing stakeholder expectations, which means that safety culture is no longer just a component of the health and safety system, but has become a prerequisite for operational resilience and management quality. In cultural terms, safety is not just a set of procedures, but a set of assumptions, values and patterns of behaviour that guide everyday decisions and practices, determining how employees perceive risk and how they respond to it (Schein, E.H., Schein, P.A., 2017). Understood in this way, culture serves as a cognitive and normative guide for organisations (Guldenmund, 2000). The importance of safety culture is particularly evident when examining accident rates. This area is greatly influenced by the quality of leadership practices, consistency of communication and operational discipline, as well as modelled and reinforced behaviours at work (Zohar, 1980).

Safety culture cannot be implemented without adapting to legal regulations, both mandatory and non-mandatory (e.g. ISO 45001 standards). Initiatives to institutionalise a safety culture are becoming increasingly common, and in high-risk companies, systemic compliance is combined with the development of soft learning and communication mechanisms. As a result, organisations are expected not only to comply formally, but also to be capable of continuous improvement, learning from events and transparent reporting of progress. Against this background, the implementation of a safety culture should be understood as a process of improvement involving the linking of policies, structures and roles with operational practices (Hudson, 2007; Cooper, 2000). Maturity assessment — conducted in a multidimensional manner and using triangulation of different methods — allows for the diagnosis of gaps and the conscious allocation of development efforts to areas that need it most.

This work is set in the reality of a manufacturing company and responds to the practical need to verify whether and to what extent an integrated safety culture improvement programme is effective. In this context, the aim of the research is to assess the maturity of the safety culture in the company and to identify the effects of the improvement programme implemented in

2021-2024. This objective justifies addressing the issue, as the combines regulatory and market requirements with the internal need to reduce risk and build a learning organisation.

## 2. Safety culture as a component of organisational culture

Organisational culture is defined in the literature as a system of shared and learned assumptions, values, norms and patterns of behaviour that guide the interpretation of situations, the assessment of what is appropriate, and the selection of actions in everyday practice (Schein, E.H., Schein, P.A., 2017). It includes both formal elements — enshrined in statutes, codes or procedures — and informal, i.e. unwritten rules, symbols, language and rituals that often subconsciously and habitually organise human interaction. In this sense, culture serves as a cognitive and normative signpost indicating ways of acting, while also stabilising expectations and behaviours, building internal cohesion and the uniqueness of an organisation in relation to its environment (Deal, Kennedy, 2000; Ravasi, Schultz, 2006). One of the most well-known approaches is the concept developed by E.H. Schein (2010), according to which culture is a pattern of shared basic assumptions developed by a group in the process of solving problems of adaptation to the environment and internal integration, recognised as sufficiently effective to be passed on to new members as an appropriate way of perceiving, thinking and feeling. The author emphasises the layered structure of culture: from visible artefacts (language, symbols, rituals, modes of communication and control) to declared values. Other authors emphasise the operational side of organisational culture. T.E. Deal and A.A. Kennedy (2000) define organisational culture as the way things get done in an organisation, emphasising its role in everyday decision-making and problem-solving. In turn, D. Ravasi and M. Schultz (2006) describe culture as a set of shared assumptions that determine what behaviours are considered appropriate in different situations and how they are implemented and passed on to new members. G. Hofstede (2010), on the other hand, points out that culture, including organisational culture, is differentiating in nature, allowing members of one community to be distinguished from another. To summarise the meaning of the selected definitions of organisational culture, it should be emphasised that the phenomenon of organisational culture is not a set of static declarations, but a dynamic result of processes of continuous improvement of the organisation's activities.

An important component of organisational culture, often analysed separately, is safety culture (Clarke, 1999; Cooper, 2000). This issue gained significance after the Chernobyl nuclear disaster, where it turned out that the organisation's poor safety culture contributed to a tragedy that could have been prevented (International Atomic Energy Agency, 1986). A highly developed organisational culture and, consequently, safety culture is reflected in the positive behaviour and attitudes of employees, as they are the primary source of errors and

dangerous behaviours that result in accidents at work and occupational diseases. In the classic regulatory approach (ACSNI, 1993), safety culture is a product of individual and group values, attitudes, perceptions, competencies and behaviour patterns that determine the level of commitment and the style and effectiveness of occupational safety and health management (Guldenmund, 2000). J. Reason (2016) develops this approach, pointing out that a mature safety culture is based on the coexistence of a culture of information and reporting, learning from mistakes, fair treatment and organisational flexibility. In practice, this may mean emphasising the value of life and health, systematically minimising risk and the ability to continuously improve the safety system. It has been found that there are a number of organisational factors that influence the health and safety culture in an organisation, the most important of which are: effective communication, committed resources, transparent management, high-quality training, comfortable workplaces, and a focus on health and safety and continuous improvement in this area (ACSNI, 1993).

## 3. Selected tools for measuring safety culture

The level of safety culture is most often inferred indirectly by measuring the safety climate**.** According to D. Zohar (1980), the safety climate is determined by employees' perceptions of how health and safety policies, procedures and practices actually work in the organisation. He emphasises that an important element of the safety climate is the perception by the organisation's employees of the relative importance of safe behaviour in their daily activities. According to A. Neal and M.A. Griffin (2002), the climate influences motivation and knowledge in the field of safety, and through them – behaviour consistent with the rules and behaviour that supports safety. In turn, M. Flin and co-authors (2000) propose that climate be identified by characteristics that are specific to safety culture and recognisable in the attitudes and assessments of employees at a given point in time. The authors of a tool dedicated to climate diagnosis defined it as the shared perceptions of team members regarding safety policies, procedures and practices on the part of management and working groups, which enables a comparable, quantitative measurement between departments and organisations (Kines et al., 2011). In summary, in light of the above definitions: safety climate is a measurable, situational dimension of how safety issues are perceived and addressed in an organisation, refers to deeper, relatively permanent assumptions and values.

In light of the recommendations of the relevant EU bodies (Brück, 2011), three complementary approaches to safety culture diagnosis are distinguished: academic, analytical and pragmatic**,** recommending a holistic approach (triangulation) rather than a single research technique. This means combining quantitative data (e.g. from safety climate surveys) with qualitative data (interviews, observations, review of artefacts and documents) and discussions

with management and employees. The most common quantitative method is to measure safety climate using standardised surveys, e.g. the NOSACQ-50 questionnaire, which is tool-verified and used in multiple languages and across industries. It captures the climate as the shared perception of safety policies, procedures and practices by team members. The second category consists of simple review tools that facilitate a preliminary assessment of culture maturity. An example is the Score Your Safety Culture Checklist, consisting of 20 dichotomously rated statements. A tool can also be used for assessment, in which the development of safety culture is mapped along a "Culture Ladder" characterised by the following levels: pathological, reactive, calculative, proactive and generative. Its purpose is to identify a path that will lead the organisation to achieve world-class occupational health and safety and environmental protection. An example of triangulation is the LSCAT (Loughborough Safety Climate Assessment Toolkit). It combines surveys with individual interviews, focus groups, document analysis and records. This allows for the assessment of various aspects of culture and the comparison of qualitative and quantitative results (Brück, 2011).

Another tool for measuring the maturity level of safety culture is the Bradley curve. Its purpose is to present safety culture as a continuum of maturity, on which organisations move from reactive to interdependent behaviours, and the accompanying internalisation of safety norms translates into a systematic decrease in injury rates (Bernard, 2018). In a theoretical sense, the model provides a normative framework for maturity, emphasising a shift in the sources of agency: from external control and conformity (dependent level) through individual responsibility (independent) to collective responsibility (interdependent). At the operational level, the curve is sometimes combined with safety climate surveys, which facilitate the mapping of organisational units into four levels of maturity and internal benchmarking (Siuta et al., 2022). Although the model has great communicative and developmental value, its psychometric validation is limited, which is why triangulation with reliable climate measurements, behaviour audits and leading indicators is recommended (Goncalves Filho, Pinto, Waterson, 2018).

According to Hudson (2007), safety culture maturity is typologically classified from pathological cultures (ignoring safety) through bureaucratic cultures (dominance of compliance and metrics) to generative cultures (safety is integral to the mission and learning). Unlike Bradley's approach, which primarily focuses on motivation and agency, Hudson's typology emphasises the quality of information flow and learning (e.g. a culture of reporting, fair treatment, flexibility), which is strongly linked to the concept of a "learning organisation". For this reason, this framework is a frequent reference point for the design of reporting, learning and fair accountability systems.

The literature shows that safety culture is intensively studied in most high-risk sectors, such as construction (Chinda, Mohamed, 2008), maritime environments (Cox, Cheyne, 2000), healthcare (Halligan, Zecevic, 2011), aviation (O'Connor et al., 2011), shipping (Havold, 2005) and railways (Clarke, 1998).

In Poland, there is a clear institutionalisation of practices aimed at diagnosing and strengthening safety culture in large companies in the infrastructure and high-risk sectors. This is particularly evident in the railway sector, where numerous companies – as signatories to the "Declaration on the Development of Safety Culture" – include regular reviews, measurements and development activities in their management systems, and their experiences are aggregated and disseminated by the Railway Transport Office (Deklaracja w sprawie rozwoju kultury bezpieczeństwa w transporcie kolejowym, 2023). In coal and non-ferrous metal mining, safety culture is described and communicated as a strategic value, and interventions are both systemic and behavioural in nature. Jastrzębska Spółka Węglowa S.A. emphasises the priority of safety culture by launching regular campaigns addressing specific occupational risk profiles and reinforcing beliefs that promote responsible operational behaviour („Bo mam do kogo wracać" – nietypowa akcja dla pracowników KGHM, 2025). KGHM Polska Miedź S.A. strengthens cultural components, including a sense of personal responsibility and shared responsibility, through actions and continuous monitoring of accident rates and improvement initiatives, reported in accordance with ESG standards. ORLEN consistently combines process safety discipline with the development of a safety culture. Integrated reports highlight both formal elements (ISO 45001, audit standards, PSM (Price Sensitivity Meter) indicators) and soft elements (education, behaviour observation, learning from events) (Bezpieczeństwo procesowe – Raport zintegrowany, 2022). The energy company Veolia describes its activities as safety culture building programmes implemented in dispersed locations and reinforced by a health and safety policy that establishes the development of a safe working culture as one of its systemic objectives (Bezpieczeństwo i ochrona zdrowia pracowników, n.d.). In civil aviation, an example of a company that operationalises the Just Culture paradigm in its management practices is LS Airport Services S.A. (Oświadczenie dotyczące Polityki Bezpieczeństwa, 2023) The company links safety culture to the quality of reporting and communication, which results from its adopted policies and participation in industry safety workshops coordinated by the aviation authority. The above cases indicate that the largest Polish companies in high-risk industries treat safety culture as a strategic variable, and its assessment is both quantitative (accident metrics, process indicators, audits) and qualitative (campaigns, training, behaviour analysis, contractor involvement).

In a comparative perspective, two dominant logics of institutionalising safety culture can be observed outside Poland: the European one, in which the sectoral regulator co-creates model frameworks and self-assessment tools (Safety culture, n.d.), and the Anglo-Saxon, where the emphasis is on safety management systems (SMS), a culture of fair treatment and organisational maturity measured by standardised indicators (AHRQ Hospital Survey 2.0: User's Guide, 2021).

## 4. Research objectives and methodology

Safety is a key value for organisations, and a high level of safety reflects a company's commitment to operational excellence and an increase in the level of organisational culture. The aim of the study is to assess the level of implementation of safety culture in company X. The company in question designs and manufactures vertical windows and patio doors and has been operating on the Polish market since 1990. The organisational structure of the production area consists of five production halls, where various types of windows, doors and non-standard shaped elements are manufactured, as well as a warehouse and a powder coating plant.

A case study was used as the research method, enabling a detailed description of the process of implementing solutions to improve safety. As part of the research, safety culture mapping was carried out in 2021 and 2024 using an analysis of key documents relating to organisation and safety management, as well as behavioural observation.

Safety culture mapping involves diagnosing and analysing attitudes, values, behaviours and practices related to safety in an organisation (Future Sky Safety, n.d.). This is related to changes in the organisation that lead to organisational improvement (Drucker, 2024). Behavioural observation (BBS - Behaviour Based Safety) is an activity that involves monitoring and analysing the behaviour of employees in their everyday workplace, in the most natural conditions possible. Such research is designed to help identify actions, tools or procedures that may contribute to the occurrence of accidents or near misses, and to observe the environment (Szczygielska, 2015). The aim of BBS is to increase employee awareness, build safe habits and implement rules and procedures to minimise risky situations. Feedback is a very important element. The response to a potentially dangerous behaviour should be immediate. It should consist of immediately stopping the employee from continuing the behaviour, expressing concern and conducting a conversation aimed at identifying the hazard and possible remedies. Promoting the idea of BBS helps to minimise the number of injuries and accidents at work, and using this procedure reinforces safe behaviour among employees not only during their work but also in their everyday lives, as they pay more attention to safe behaviour (Behavior Based Safety – What it is and how it works, n.d.).

**Table 1.**
*Safety dimensions in company X*

| | |
|---|---|
| **Leadership** | leadership commitment |
| | safety policy, strategy, plan |
| | requirements, procedures, standards |
| | performance management – KPIs, reviews, PDCA, change management |
| **Organisation** | structure, assigned roles, responsibilities |
| | resources and potential |
| | awareness and motivation |
| | beliefs and attitudes - operational discipline, focus on task completion and goal achievement |

Cont. table 1.

| | |
|---|---|
| **Processes and activities** | communication |
| | investigation of incidents (accidents, near misses) |
| | observations, audits, inspections |
| | learning and development |

Source: Company X's own materials.

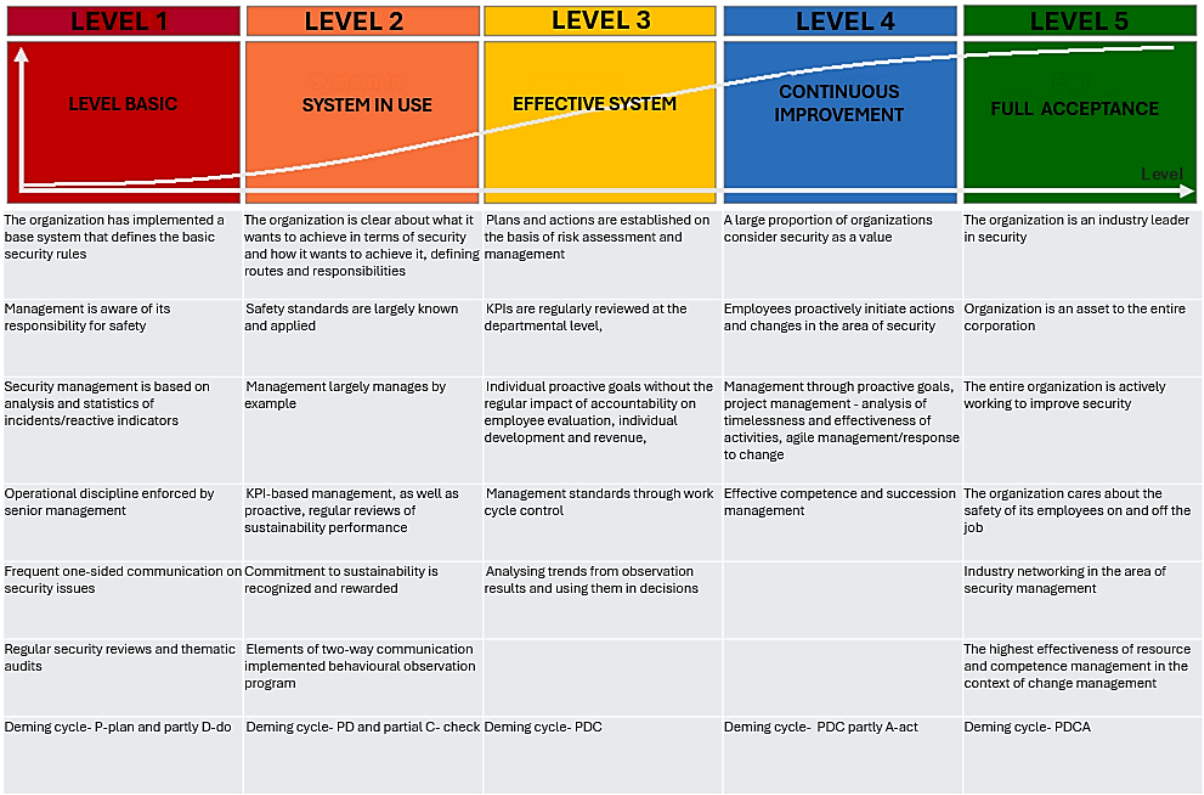


**Figure 1.** Safety Culture Mapping.

Source: Company X's own materials.

A proprietary tool based on the Bradley Curve was used to diagnose the state of the safety culture. Twelve safety dimensions were identified (Table 1), which were assessed using Safety Culture Mapping (Fig. 1) on a scale from 1 to 5, where 1 meant "completely disagree" and 5 meant "completely agree".

## 5. Implementation of activities related to building a safety culture

The decision to launch a safety improvement programme in the surveyed company in 2021 was made taking into account several key safety elements. The most important was to ensure the protection of the life and health of employees, as creating a safe working environment has a significant impact on the comfort of performing duties, promotes a sense of peace and positive attitudes towards work. Another factor taken into account was the reduction in the number of accidents, which also translates into a reduction in direct and indirect costs, including medical

expenses, compensation, implementation and training of replacements, and production downtime costs. A high level of safety culture also strengthens staff motivation and loyalty. In light of the above, the management team formulated a plan to improve working conditions, precisely defining the objectives and strategy for their implementation.

An analysis of key documents for the study showed that the strategy in the company is based on five pillars (CLEAR): customer focus (C), leadership (L), efficiency (E), accountability (A) and reliability (R). The first of these is a customer-oriented approach, in which all decisions are made from the perspective of the customer's needs and expectations. This includes concern for product quality, safety and reliability, as well as stakeholder relations and a sustainable approach to production, reflected in the selection of certified suppliers, the reduction of the negative impact of processes on the environment and the support of pro-environmental initiatives in local communities. Joint leadership is based on partnership, exchange of experience and mutual support, and its goal is to build a unified and strong organisation capable of achieving a leading position in the industry. Efficiency means effective decision-making and operations based on the optimal use of material resources, minimising waste and maximising added value, while investing in the development of employee skills, sharing knowledge and supporting innovation. Responsibility refers to the involvement of all stakeholders in decision-making processes, clear communication of goals and values, and the implementation of common, long-term priorities that include not only growth and profits, but also sustainable development and social initiatives. Reliability, on the other hand, is the foundation for building customer trust and loyalty, and by consistently meeting their needs and striving for continuous improvement, the organisation maintains its brand among the most reliable and valued on the market.

On this basis, it can be concluded that the company's goal is to create a safe and development-friendly working environment through investments in modern technologies, training and a culture of mutual respect, which promotes employee commitment and loyalty. Building relationships with customers based on high-quality products, timely order fulfilment, professional service and loyalty programmes is also of key importance. An important element is cooperation with suppliers, based on mutual trust, timeliness and high quality of materials, while taking into account the principles of sustainable development. Thanks to this, the organisation strengthens its position on the market, providing customers with safe, durable products that are in line with social and environmental values.

An analysis of risk assessment documentation has shown that four main risk groups have been defined in the company under review: mechanical (including injuries during machine operation, falls, injuries from glass and aluminium), chemical (flammable and toxic substances requiring strict compliance with safety rules), physical (wood dust, noise) and ergonomic (incorrect posture, heavy lifting). The identification of these factors enables the assessment of occupational risks and the development of preventive measures, such as procedures, technical safeguards and personal protective equipment.

The company under review places particular emphasis on clear and reliable communication, including communication regarding safety rules. One of the main tools is the Moja XXX mobile app, which is used to quickly report accidents, procedures and training. For production employees, additional workshops and on-the-job training, posters and information boards, daily and periodic team meetings enabling the exchange of information and the reporting of initiatives within employee programmes, as well as job instructions ensuring knowledge of safe working practices are provided. In addition, newsletters are sent out and information is posted in dedicated areas, such as canteens.

As part of the preparations for implementing a safety culture in the company, an audit was conducted in 2021 with the participation of an external consultant. Based on this, a diagnosis of the initial state was made and recommendations for actions to improve the existing situation were developed.

An analysis of the results obtained in 2021 (Table 2) indicates a relatively low level of organisational maturity in the area of safety management. The highest scores were achieved in the areas of leadership commitment and processes related to incident investigation and audits and inspections, which suggests that the organisation is somewhat focused on identifying risks and monitoring their occurrence. However, other elements, such as security policy, strategy and planning, as well as systemic performance management, were rated significantly lower, which may indicate a lack of a consistent and long-term concept for activities in this area. In the organisational sphere, there is a deficit in employee awareness and motivation, which limits the effectiveness of the measures implemented. Slightly higher ratings in the area of beliefs and attitudes also indicate a need to develop a safety culture based on operational discipline and goal orientation. Operational processes, such as communication and learning and development activities, also scored below average, suggesting insufficient mechanisms to support continuous improvement and knowledge sharing. Overall, the average rating of 1.6 (between levels 1 and 2 – see Fig. 1) confirms that the safety management system in the analysed period was characterised by low maturity, requiring reinforcement at both the strategic and operational levels.

Taking into account the results obtained during the safety culture audit in 2021, it was decided to implement measures in the company to improve this result and, above all, to increase safety. As part of the corporate governance overhaul, it was decided to clarify leadership roles in this area, standardise incident investigation and incorporate safety into the bonus system and promotion process. In 2023, the company conducted a media campaign on safety among employees and emphasised the importance of feedback from production employees. Operational activities were more focused on visualising and automating reporting and improving systems. The management of post-incident recommendations was standardised and the effectiveness of communication channels was improved. The year 2024 was characterised by the implementation and improvement of activities related to the implementation of safe practices and responsibility for safety at all levels of the company.

**Table 2.**
*Security dimensions in company X*

| Dimension group | Safety dimensions | Years | |
|---|---|---|---|
| | | 2001 | 2004 |
| Leadership | leadership engagement | 2.5 | 2.4 |
| | security policy, strategy, plan | 1 | 2 |
| | requirements, procedures, standards | 2 | 2.4 |
| | performance management – KPIs, reviews, PDCA, change management | 1.5 | 2 |
| Organisation | structure, assigned roles, responsibilities | 1.5 | 3 |
| | resources and potential | 1.5 | 2.3 |
| | awareness and motivation | 1.3 | 2 |
| | beliefs and attitudes – operational discipline, focus on task completion and goal achievement | 1.5 | 2 |
| Processes and activities | communication | 1.5 | 2 |
| | incident investigation (accidents, near misses) | 2 | 3 |
| | observations, audits, inspections | 2 | 3.2 |
| | learning and development | 1 | 1 |

Source: Company X's own materials.

The CLEAR strategy was expanded in 2024 with the announcement of Operation Compass, which unites the entire operational organisation into a single team and guides it on the path to excellence based on employee engagement, effective leadership and continuous process improvement. Employee commitment is expressed in a positive attitude, openness to new ideas, identification with the organisation's goals, cooperation based on respect and a willingness to go beyond the call of duty. Effective leadership is understood as influence that does not result from coercion, but includes setting an example, making decisions based on reliable data, strengthening the team and inspiring others to work together towards the organisation's goals. The third element is the systematic improvement of processes, focused on customer satisfaction, strengthening the company's position, implementing best practices and using tools that support the achievement of the desired results. According to the Operation Compass strategy, these activities lead to effective management. An example of this is the Code of Conduct in place in the organisation, which is based on simple and transparent principles that support open communication, clear definition of goals, roles and responsibilities, and standardisation of processes to ensure consistent quality.

The most important operational measure to improve the safety culture was the implementation of behavioural observation. This was a process that involved all production foremen and production area managers. During the observation, a trained observer reacted to behaviours that were classified as unsafe. The second step was to talk to the observed employee in order to encourage reflection on the hazard and a commitment to correct behaviour in the future, without passing judgement. The final stage was anonymous reporting of non-compliance in the system for the purpose of analysing trends across the company. Approximately 1100 observations were recorded each month (see Fig. 2) and analysed. Examples (original spelling) included:

– The operator removed a rack with windows for repair during transport; the window fell out of the rack – the glass did not break. The reason was that the large window was in a short rack and had not been screwed to the rack.
– While picking up a pallet with a forklift, an employee hit another tall pallet, which almost fell over.
– The operator was transporting tall and narrow items in a rack in an upright position, posing a risk of the items falling over.

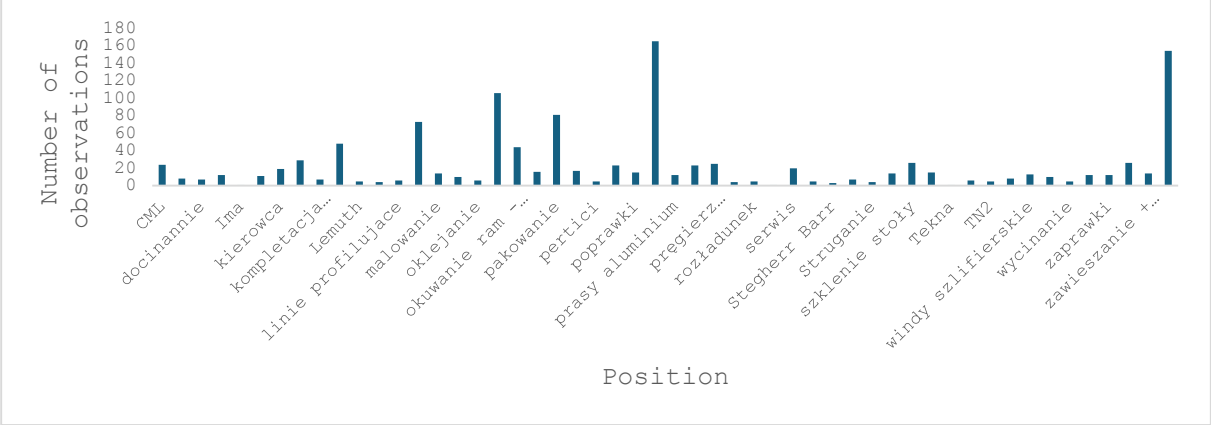


**Figure 2.** Number of behavioural observations per workstation – week 18.

Source: Company X's own materials.

The interventions implemented in the surveyed company resulted in a significant improvement in the values of most safety culture indicators in 2024 (Table 2). With the exception of the "leadership commitment" area, increases were recorded in all other areas. The greatest improvement was recorded in the leadership ($\Delta = 1.8$), which is reflected in the formalisation of guidelines. In the organisational area, the greatest progress was made in structure, roles and responsibilities related to the systematic conduct of mandatory behavioural observations. In the process area, incident investigation was significantly improved and observations, audits, inspections. At the same time, communication was improved, which increased risk awareness, transparency of actions and understanding of the interventions implemented among employees. The 2024 measurement yielded an absolute value = 2.28, it places the company between the second and third levels (see Figure 1), which is a consequence of targeted development activities and confirms the strengthening of organizational learning mechanisms in the area of occupational health and safety. The improvement in the actions of the company's employees has too translated into a measurable reduction in the accident rate (Fig. 3).

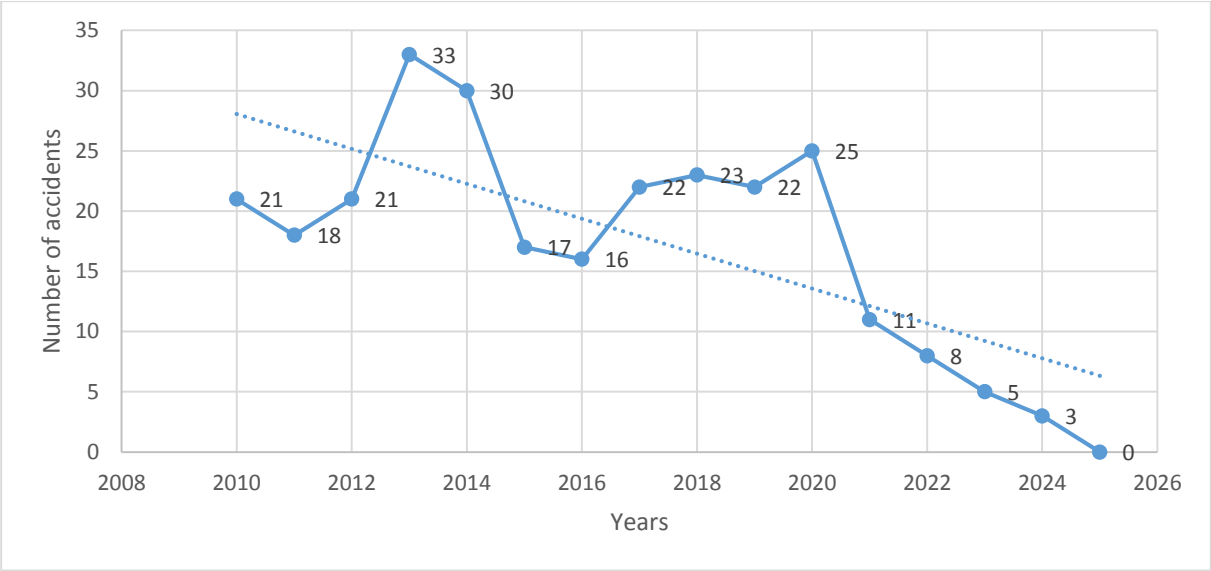


**Figure 3.** Number of accidents in the company in 2010-2025.

Source: Company X's own materials.

The company has also taken measures to strengthen the culture of safety and care for employees. These include, for example, regular meetings of leaders from all areas of the company, focused on coordinating initiatives, exchanging information and improving cooperation, with a particular focus on occupational safety, and the use of multi-channel communication to increase brand awareness and employee participation through regular messages on risk minimisation, information on incidents, and corrective and preventive measures (Facebook, LinkedIn, Daylight, dedicated internal application). Identified trends indicate that the systematic strengthening of the safety culture and employee care is reflected in employee evaluations, with further growth in indicators likely to be supported by maintaining a forum for cooperation between leaders and consistent, transparent communication of safety activities.

The research conducted has shown that the deliberate and consistent implementation of OHS management tools – from the formalisation of policies and roles, through systematic incident investigation and behavioural observation, to multi-channel communication and the integration of safety objectives with HR mechanisms – leads to a measurable increase in the maturity of the safety culture and a decrease in the accident rate. The results presented are confirmed by the literature, which consistently indicates that interventions based on behavioural observation of work and feedback (BBS) significantly reduce injuries and accidents (Tuncel et al., 2006; Krause et al., 1999). At the same time, research on the role of leadership and safety climate shows that it is the quality of everyday management practices, rather than declarations alone, that translates into the perception of safety as a priority in teams and into results in terms of compliance and participation (Christian et al., 2009; Zohar, Luria, 2010; Wu et al., 2008). The key mechanism for increasing maturity has been found to be the organisation's transition to a process of continuous improvement – a learning organisation. The literature shows that

a developed reporting system and reliable post-implementation investigations strengthen trust, communication and proactive identification of threats, and as a result reduce accident rates (Haas et al., 2020). Empirical reports also emphasise the role of communication quality and employee participation as key mechanisms for translating culture into behaviour (Naji et al., 2022), which was also highlighted in the research results.

The research showed that the complementary impact of situational factors (policies, role structures, standards), interactive factors (leadership, communication) and personal factors (attitudes, motivation) shapes the safety climate and culture, and their reinforcement – through BBS, incident learning, PDCA and integration with HR practices – translates into both safety indicators and operational results, and ultimately also financial results.

## 6. Conclusion

The literature indicates that organisations with a weak safety culture experience accidents more frequently, while those with a strong safety culture are more resilient (Clarke, 2006). As a result, safety culture measurement has become widespread as a tool for obtaining information about safety management practices and strategies in a company, enabling the identification of strengths and weaknesses as well as areas for improvement among employees and managers. The research presented in this paper has clear practical implications. Systematically raising health and safety standards not only reduces the likelihood of accidents, but also promotes job satisfaction by strengthening the sense of being noticed and appreciated by the employer and reducing stress related to health concerns. The benefits for employers are multifaceted: a high level of safety builds the organisation's reputation in the eyes of key stakeholders (customers, suppliers and employees), increases operational efficiency through greater process fluidity, which translates into productivity and product quality, and also strengthens employee commitment and loyalty. The regulatory dimension is also important: ensuring compliance with applicable regulations and standards reduces the risk of sanctions. At the same time, reducing accidents lowers direct and indirect costs, including employee absenteeism, recruitment and training of replacements, compensation payments, production downtime and damage repair costs.

The research results presented in the article should be interpreted with caution due to several limitations. Observations of behavior made by line employees may be prone to bias. In addition, the very large number of entries increases the risk of routine data entry, which may reduce the quality of the assessment. In subsequent assessment cycles, it is reasonable to introduce BBS quality controls, for example through observer rotation or random audits. Furthermore, incorporating safety targets into HR mechanisms may inadvertently encourage underreporting, which could affect the credibility of communication. In addition, the simultaneous

implementation of several initiatives may make it difficult to attribute effects to a specific tool. Given these limitations, the measurement system should be validated (e.g., by strengthening triangulation, prioritizing learning and development as a condition for maintaining results, implementing other indicators) in order to achieve increasingly better results leading to an improvement in the company's safety culture.

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