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MECHANISMS OF THE IMPACT OF EMPLOYEE ATTITUDES AND AWARENESS ON THE FUNCTIONING OF OCCUPATIONAL HEALTH AND SAFETY SYSTEMS

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Abstract: The increasing complexity of modern work environments highlights the importance of psychosocial factors in occupational health and safety (OHS). This study examines the impact of employee attitudes and awareness on OHS system effectiveness through a systematic review of 78 peer-reviewed articles published between 2020 and 2025, identified in ScienceDirect, Scopus, and Web of Science. The findings show that attitudes toward safety, risk, and organizational support, combined with procedural, risk-related, and psychosocial awareness, shape safety behaviors such as compliance and reporting. These behaviors directly influence accident rates and safety culture development. Safety leadership and psychosocial safety climate act as key moderating factors.The study proposes an integrated model linking attitudes, awareness, behavior, and OHS outcomes.
Keywords: employee attitudes, employee awareness, health and safety,

1. INTRODUCTION

Nowadays, occupational health and safety OHS issues are gaining increasing importance as a consequence of the growing complexity of technological processes and the dynamic development of industrialization and urbanization (Yang et al., 2023). The advancement of automation, digitalization, and the intensification of production processes have made the work environment more demanding and increasingly exposed to new types of hazards (Brown et al., 2017, Flatau-Harrison et al., 2023). Under these conditions, identifying and implementing effective solutions for everyday safety management becomes essential to reduce risks and minimize the negative consequences of workplace accidents (Robson et al., 2007, Fernández-Muñiz et al., 2009). Risk reduction and the mitigation of accident severity require not only the improvement of technical and procedural safeguards but also the development of a shared understanding among employees regarding organizational safety policies and practices (Xia et al., 2020).Empirical evidence indicates that enhancing

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employees' perception and interpretation of health and safety rules leads to higher levels of procedural compliance, increased vigilance toward hazards, and overall improvements in safety performance. A positive safety climate – defined as employees' shared perception that safety is a genuine organizational priority – has been shown to significantly reduce accident rates and improve safety outcomes (Sun et al., 2024). Safety is also an integral component of corporate social responsibility and reflects the moral obligation of organizations toward their employees and the broader social environment. According to Corcoran and Shackman 2007, concern for safety should not be viewed merely as a formal or regulatory requirement, but rather as a fundamental organizational value that contributes to corporate reputation and long-term sustainability. The occupational safety literature consistently indicates that employee attitudes constitute one of the most critical mechanisms determining the effectiveness of OHS systems. Although many studies employ related constructs such as safety climate, safety leadership, or psychosocial safety climate PSC it is ultimately individual attitudes that directly shape decision-making processes and regulate behavior in situations involving risk (Christian et al., 2009, Clarke, 2013). In this sense, broader organizational constructs influence safety outcomes primarily through their impact on employees' attitudes and subsequent behavioral responses.

The aim of this study was to examine the impact of employee attitudes and awareness on the functioning of occupational health and safety OHS systems through an analysis of current scientific literature. Despite the substantial body of empirical research in the field of occupational health and safety, several significant research gaps remain that justify further investigation. First, many existing studies focus on isolated variables such as safety climate, leadership, or risk perception while relatively few examine the complex interrelationships between employee attitudes, their awareness, and the overall functioning of OHS systems. In particular, there is a shortage of integrated models that simultaneously account for both individual-level determinants e.g., attitudes and awareness and organizational-level factors e.g., climate, leadership, and management practices. Second, the predominance of cross-sectional research designs limits the ability to infer causal relationships and determine the directionality of the links between employee attitudes and the effectiveness of safety systems. As a result, the mechanisms through which attitudes and awareness translate into measurable safety outcomes remain insufficiently explored. More specifically, research investigating how these psychosocial factors influence concrete indicators of OHS system performance such as compliance, participation in safety initiatives, incident reporting, and accident rates is still underdeveloped. Third, although the growing body of literature on psychosocial safety climate PSC highlights its importance in shaping employee well-being and safety-related behaviors, its direct and indirect associations with traditional OHS performance indicators remain inadequately examined. The extent to which PSC strengthens or mediates the relationship between attitudes, awareness, and system effectiveness requires further empirical clarification. Finally, the literature points to the need for an updated and comprehensive synthesis of research findings that would consolidate dispersed empirical evidence and enable the identification of key determinants of OHS system effectiveness across diverse organizational contexts. Such a synthesis would not only clarify existing

inconsistencies but also support the development of theoretically grounded and practically applicable models of safety management.

2. METHODOLOGY OF RESEARCH

To achieve the objective of the study, a systematic literature review was conducted in accordance with established methodological guidelines (Carrera-Rivera et al., 2022, Rahman et al., 2022), covering publications from 2020 to 2025. The review was carried out using three major international databases: ScienceDirect Elsevier, Scopus, and Web of Science. These databases are widely recognized as comprehensive and reliable sources indexing high-quality, peer-reviewed scientific journals with substantial citation impact (Falagas et al., 2008, Martín-Martín et al., 2018). The search strategy employed combinations of English-language keywords connected with the Boolean operators AND and OR. The primary search terms included: “safety climate,” “safety culture,” “psychosocial safety climate,” “safety behavior,” “risk perception,” “employee attitudes,” “safety awareness,” “safety leadership,” “safety compliance,” and “safety participation.” These terms were further combined with the keywords “employee,” “worker,” “staff,” “organization,” and “workplace.” The search was conducted within the titles, abstracts, and keywords of the identified publications. Technical studies unrelated to human factors, articles outside the scope of occupational health and safety, conference abstracts without full-text availability, and duplicate records were excluded from the review. As a result of the search and selection procedure, a total of 78 scientific articles were included in the final analysis. Of these, 36 publications were retrieved from the ScienceDirect database, 28 from Scopus, and 14 from the Web of Science database. An examination of the journal distribution indicates a clear predominance of Safety Science 48.7% of all included publications, followed by the Journal of Safety Research 21.8%. The remaining studies were published in Accident Analysis & Prevention, the Journal of Applied Psychology, and other peer-reviewed journals indexed in Scopus and Web of Science. This distribution suggests that the review is grounded primarily in specialized and high-impact sources within the field of occupational safety and health.

3. RESULTS AND DISCUSSION

The collected literature clearly shows that the effectiveness of occupational health and safety systems is determined by two closely related areas: the structure of employees' attitudes table 1 and their level of awareness table 2.

Research indicates that a positive attitude toward safety enhances safety motivation and compliance with procedures (Christian et al., 2009) demonstrate that attitudes function as a mediator between leadership and occupational safety and health OSH outcomes, highlighting their central role in the mechanism linking organizational factors to safety performance. Kapp (2012) further showed that OSH training is most effective when it produces a lasting change in attitudes rather than merely transferring procedural knowledge. A proactive attitude refers to employees’ active and voluntary engagement in activities that go beyond the formal requirements of the OSH system, particularly in identifying hazards, initiating improvements, and co-creating a safety culture (Clarke, 2013, Griffin & Curcuruto, 2016).

Table 1

Key employee attitudes and the functioning of occupational health and safety systems

Attitude	Description of the Attitude	Impact on the Functioning of OHS Systems
Towards safety	Beliefs about the value of safety, the purpose of procedures, and the need for caution.	High compliance with procedures, fewer errors and incidents, stronger safety culture.
Proactive	Actively reporting hazards, participating in OHS activities, initiating improvements.	Lowest accident rates, strong safety citizenship behaviors, mature safety culture.
Towards risk	Assessment of hazard probability, risk tolerance, emotional reaction to danger.	High risk perception → fewer risky behaviors, low perception → rule-breaking, accidents.
Towards the organization and supervisors	Trust in management, sense of fairness, belief that the organization cares about safety.	Higher motivation, better reporting, consistent rule compliance.
Normative-social	Influence of the group, team norms, social pressure, and co-workers' culture.	Positive norms → higher vigilance and compliance, negative norms → shortcuts and neglect of OHS.
Towards stress and time pressure	Reaction to workload, work pace, deadlines, and task intensity.	Low resilience → rule-breaking, high resilience → stable behavior despite stress.

Source: Own elaboration.

This construct aligns with the participatory dimension of safety behavior, which encompasses initiative, responsibility, and readiness to undertake preventive actions. Martínez-Córcoles et al. (2011) found that safety-oriented transformational leadership significantly strengthens proactive employee engagement, while Casey et al. (2015) emphasize the importance of supervisor support as a factor that facilitates sustained participation in health and safety activities. Risk perception and risk tolerance have consistently been identified as significant predictors of safety behaviors (Huang et al., 2010, Bhandari & Hallowell, 2022). Newaz et al. (2019) demonstrated that risk perception mediates the relationship between safety climate and unsafe behaviors. Elevated risk perception is not solely a function of procedural knowledge, rather, it also reflects the internalization of safety values, as evidenced by Guo et al. (2016) in studies conducted in high-risk industries. It can therefore be concluded that risk perception constitutes a central cognitive mechanism regulating employees' operational decision-making. Research further indicates that attitudes toward the organization and perceptions of management support are critical determinants of safety motivation (Clarke, 2013, Dollard & Bailey, 2021). Jiang and Probst (2016) found that job insecurity reduces safety compliance, highlighting the destabilizing effect of negative organizational attitudes. Potter et al. (2017) showed that a strong psychosocial safety climate PSC enhances the effectiveness of occupational health and safety interventions, suggesting that the organizational environment can either amplify or weaken the impact of preventive measures. Hamre et al. (2023) and Karatuna et al. (2025) further confirmed that PSC mitigates the adverse

effects of work-related stressors on safety behavior. Beus et al. (2016) demonstrated that safety climate strength i.e., within-team climate cohesion is a stronger predictor of accident rates than the mean level of safety climate itself. This finding suggests that the uniformity of safety-related attitudes within a team is more critical than their average intensity. Probst (2015) further showed that a weak safety climate fosters incident concealment, whereas Li and Griffin (2022) indicate that a strong safety climate enhances employees' willingness to report safety-related events. In turn, Sun et al. (2024) identified distinct employee profiles based on safety climate perceptions, underscoring the importance of shared team norms in shaping safety-related behaviors.

Table 2.
Employee awareness of health and safety systems

Area of Awareness	Description	Impact on Behavior and the OHS System
Procedural	Knowledge of OHS rules and understanding their purpose, rationale, and logic.	Fewer routine errors, stronger safety culture.
Hazards / Risk perception	Assessment of the likelihood and consequences of hazards, emotional and cognitive perception of risk.	Fewer risky behaviors, less rule-bypassing, lower accident rates.
Psychosocial	Understanding the impact of stress, psychological load, and social relations.	Higher stress resilience, better decision-making under pressure, greater readiness to respond to hazards.

Source: Own elaboration.

Procedural awareness encompasses not only knowledge of occupational health and safety OHS rules but also an understanding of their purpose and underlying rationale. Research by Shea et al. (2021), and Tappura et al. (2022) demonstrates that a higher level of procedural understanding is associated with greater compliance and a lower incidence of errors. In the healthcare sector, Ahadzi et al. (2021) and Simsekler et al.(2025) showed that enhanced procedural awareness among staff reduces the likelihood of adverse events. Risk perception is consistently identified as one of the strongest predictors of safety behavior. Studies by Fang et al. (2006), Huang et al. (2010), Newaz et al., (2019), Man et al. (2024) and García-Mainar & Montuenga (2024) indicate that elevated risk perception is associated with fewer unsafe behaviors and accidents. Notably, the affective dimension of risk perception appears to be particularly influential, exerting a stronger effect on decision-making than hazard knowledge alone (Man et al., 2024, Priolo et al., 2025). Psychosocial awareness refers to understanding how stress, time pressure, and organizational climate influence employee behavior. Research by Potter et al., (2017), Dollard & Bailey, (2021), Karatuna et al., (2025), and Maqsood et al. (2022) shows that high levels of psychosocial safety climate PSC, combined with awareness of stress-related mechanisms, reduce risk-taking and reinforce safety behaviors-especially under conditions of elevated job demands.
An analysis of 78 articles published between 2020 and 2025 in the ScienceDirect, Scopus, and Web of Science databases allows us to formulate a coherent model of the relationship

between employee attitudes, their level of awareness, safety behaviors, and the effectiveness of occupational health and safety systems table 3.

Table 3
Attitudes – Awareness – Behavior – Results of occupational health and safety systems

EMPLOYEE ATTITUDES	AWARENESS what reinforces the attitude	OHS BEHAVIOURS what the employee does	OHS SYSTEM OUTCOMES effect
Attitude towards safety	High procedural awareness and understanding of rules	Compliance with procedures, reporting, caution	Fewer errors, stable safety culture
Proactive attitude	Awareness of hazards and the need for preventive actions	Reporting incidents, safety initiatives, participation in processes	Mature safety culture, low accident rates
Attitude towards risk	High risk perception affective + cognitive	Risk avoidance, use of protective measures	Fewer incidents
Attitude towards the organization and supervisors	Awareness of the importance of safety policies, trust in management	Reporting, rule compliance, high motivation	Consistent OHS system, better communication, fewer violations
Normative-social attitude	Awareness of group norms	Behaviors adjusted to the group positive or negative	High or low OHS quality depending on team norms
Attitude towards stress and time pressure	Psychosocial awareness stress, overload	Stable behavior under difficult conditions or rule-breaking	High OHS resilience or degradation under pressure

Source: Own elaboration.

Synthesizing the findings of the reviewed studies, it can be concluded that the relationship between attitudes, awareness, and occupational health and safety OHS outcomes is both sequential and multi-level. Attitudes constitute a primary antecedent influencing the level of employee awareness, awareness, in turn, shapes safety behaviors, which subsequently translate into measurable organizational outcomes such as accident rates, incident reporting levels, and the maturity of the safety culture. This mechanism is further strengthened by contextual factors, particularly safety leadership, organizational communication, and the psychosocial safety climate PSC, which may either amplify or attenuate the relationships between individual-level determinants and system-level outcomes.

3. CONCLUSION

The conducted literature analysis indicates that a high level of employee awareness contributes to the development of positive safety-related behaviors, such as compliance with procedures, exercising caution, reporting incidents, and undertaking preventive measures. At the same time, research findings indicate that the analyzed attitudes do not function in isolation but rather reinforce one another, particularly in an environment characterized by high-quality safety leadership, open communication, and a strong

psychosocial safety climate. Organizations that consciously develop these elements can strengthen the relationships between employee attitudes, their awareness, safety-related behaviors, and the outcomes of OHS system functioning. From a practical perspective, this means that it is necessary to develop not only employees' knowledge of OHS rules but also their attitudes towards safety, risk perception, and readiness to actively participate in preventive activities. It is also important to provide employees with opportunities to report hazards, near-miss situations, and irregularities without fear of negative consequences. Supervisors play a particularly important role in this process, as their way of communicating safety requirements, responding to reported problems, and promoting safe behaviors can strengthen the functioning of the OHS system. In practice, this means the need to combine traditional preventive measures with the development of awareness, employee participation, and a positive safety climate. The analysis of the literature also made it possible to identify several important research gaps. Future research should primarily determine more precisely the relationships between employee attitudes, awareness, safety-related behaviors, and the actual outcomes of OHS system functioning. It is also worth developing research on the influence of safety leadership, psychosocial safety climate, organizational communication, and supervisor support on the relationships between individual employee attitudes and their behaviors. It would also be important to conduct comparative studies across different sectors and occupational groups and to more frequently combine self-reported data, such as surveys concerning attitudes and awareness, with objective safety indicators, including the number of accidents, near-miss events, and reported hazards. In summary, the conducted analysis indicates the important role of the relationship attitudes → awareness → behaviors → OHS system outcomes. However, this relationship should be treated as a proposed conceptual model requiring further empirical verification, rather than as a definitively confirmed causal mechanism. Further research should therefore focus on determining the strength and direction of the individual relationships, as well as the organizational conditions under which employee attitudes and awareness contribute most significantly to improvements in occupational safety.

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