

Enhancing Safety Culture through Competency and Accountability: An Integrated Occupational Psychology Framework

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Abstract

Sustainable safety culture has become a strategic priority for organisations operating in increasingly complex and high-risk environments. While technical controls and regulatory compliance remain essential components of safety management, they are insufficient to achieve long-term safety performance without understanding the psychological and organisational mechanisms that influence human behaviour. This conceptual study examines the roles of competency and accountability in strengthening safety culture from an occupational psychology perspective through a critical synthesis of contemporary literature in occupational psychology, organisational behaviour, and safety science. The study proposes an integrated conceptual framework in which competency provides the capability for safe performance, accountability reinforces responsible workplace behaviour, and psychological safety, leadership, and organisational learning function as complementary enabling mechanisms. Collectively, these interacting factors create the organisational conditions necessary for resilient and sustainable safety culture. The study contributes a unified theoretical explanation of how psychological and organisational processes shape safety behaviour and organisational performance. The proposed framework offers practical guidance for organisations seeking to strengthen safety culture while providing a conceptual foundation for future empirical research in occupational psychology and safety management.

Keywords: Safety Culture; Occupational Psychology; Competency; Accountability; Psychological Safety

The increasing complexity of modern workplaces has demonstrated that sustainable safety cannot be achieved through engineering controls, regulatory compliance, and formal safety management systems alone. Although these measures remain fundamental for preventing occupational injuries and operational failures, contemporary evidence indicates that technical safeguards are effective only when they are supported by psychological and organisational conditions that promote safe judgement, responsible decision-making, and consistent behavioural performance (Reason, 1997; Christian et al., 2009). Consequently, workplace safety is increasingly recognised as a socio-technical phenomenon in which organisational systems and human behaviour interact to determine safety outcomes (Guldenmund, 2000), with recent evidence further highlighting the importance of leadership, communication, and psychologically safe work environments in supporting sustainable safety performance (Ip et al., 2025; Fukami, 2025).

Within this socio-technical perspective, human behaviour represents the critical link between organisational safety systems and actual workplace performance. Organisations may establish comprehensive procedures, provide advanced technologies, and implement rigorous regulatory controls; however, the effectiveness of these measures ultimately depends on how individuals perceive hazards, interpret organisational expectations, communicate safety concerns, and make decisions under operational conditions (Bandura, 1986; Christian et al., 2009). This recognition has shifted scholarly attention from safety management as a purely technical function towards safety culture, which explains how shared organisational values, beliefs, behavioural norms, and everyday practices collectively influence safe performance (Guldenmund, 2000; Dong et al., 2024). Recent evidence further suggests that leadership, communication climate, and psychological safety play a central role in encouraging employee voice, hazard reporting, and organisational learning, thereby strengthening safety performance in high-risk workplaces (Ip et al., 2025; Shankar et al., 2025).

Safety culture has therefore become one of the most influential concepts in contemporary occupational psychology and safety science because it provides an explanation for why organisations operating under similar technological, regulatory, and environmental conditions frequently experience different safety outcomes. Rather than representing compliance alone, safety culture reflects the extent to which safety is embedded within organisational thinking, leadership practices, communication patterns, learning processes, and daily operational behaviour (Schein & Schein, 2021; Guldenmund, 2000). Organisations characterised by strong safety cultures consistently demonstrate higher levels of employee participation, open communication, organisational learning, and resilience, whereas weak safety cultures are commonly associated with procedural violations, inadequate reporting, and inconsistent behavioural performance (Neal & Griffin, 2006). Contemporary evidence further indicates that psychologically safe organisational environments strengthen employee voice, hazard reporting, and collective learning, thereby reinforcing positive safety culture and long-term organisational performance (Ip et al., 2025; Amodu et al., 2024).

Although safety culture has been extensively discussed within safety science, its development is fundamentally dependent upon psychological processes operating within organisations. Occupational psychology provides an essential theoretical perspective by explaining how individuals acquire competence, perceive responsibility, interpret organisational expectations, respond to leadership behaviours, and regulate their own decisions during routine and non-routine work (Bandura, 1986). These psychological mechanisms influence not only compliance with established procedures but also proactive safety behaviours, continuous learning, hazard reporting, collaboration, and adaptive decision-making under changing operational conditions (Christian et al., 2009). Contemporary occupational psychology further recognises that psychological safety, leadership, and organisational learning create organisational conditions that enable these individual capabilities to be translated into sustained safety performance (Edmondson, 1999; Ip et al., 2025). Consequently, occupational psychology has evolved from a supporting discipline into a central theoretical perspective for understanding how human behaviour shapes sustainable organisational safety.

Among the numerous psychological and organisational factors associated with workplace safety, competency and accountability occupy particularly significant positions because they represent complementary foundations of sustainable safety culture. Competency determines whether individuals possess the knowledge, technical skills, professional judgement, and behavioural capability required to perform work safely, whereas accountability determines whether those competencies are consistently

translated into responsible workplace behaviour through clearly defined expectations, ownership, feedback, and organisational responsibility (Bandura, 1986; Dekker, 2014). While both constructs are widely acknowledged as essential components of effective safety management systems, they are frequently examined independently, leaving limited conceptual understanding of how they interact to strengthen organisational safety culture. Recent scholarship has further highlighted the complementary influence of psychological safety, leadership, and organisational learning on workplace safety; however, these constructs are often investigated separately rather than as interconnected mechanisms operating within an integrated conceptual framework (Edmondson, 1999; Ip et al., 2025). Accordingly, this conceptual study synthesises evidence from occupational psychology, organisational behaviour, and safety science to explain how competency and accountability strengthen safety culture through these complementary psychological and organisational pathways. By integrating these constructs within a unified theoretical model, the study seeks to contribute a coherent conceptual explanation that informs both future research and evidence-based organisational safety practice.

1. Safety Culture: Theoretical Foundations

The concept of safety culture emerged from the recognition that technological excellence and regulatory compliance alone could not adequately explain differences in organisational safety performance. Although organisations may operate under similar engineering standards, regulatory requirements, and operational procedures, substantial differences are frequently observed in accident rates, reporting behaviour, learning capability, and overall safety performance. These differences have increasingly been attributed to organisational culture, particularly the shared values, beliefs, attitudes, and behavioural norms that influence how safety is perceived, prioritised, and practised throughout an organisation (Reason, 1997; Schein & Schein, 2021; Organizational Safety Climate and Safety Culture, 2023). Contemporary safety science further recognises safety culture as a dynamic organisational capability that influences both operational resilience and long-term organisational performance (Guldenmund, 2000; Li et al., 2022).

The international prominence of safety culture followed major industrial disasters, which demonstrated that organisational failures often extend beyond technical deficiencies. Investigations into catastrophic events revealed that accidents frequently originate from a combination of inadequate leadership, ineffective communication, poor decision-making, insufficient learning, and organisational complacency rather than isolated equipment failures (Reason, 1997). Consequently, safety researchers gradually shifted their attention from preventing individual human errors towards understanding the broader organisational conditions that shape safe and unsafe behaviour (Guldenmund, 2000). This shift established safety culture as a central concept in safety science by recognising that sustainable safety depends upon the interaction between technical systems, organisational processes, leadership, and human behaviour (Schein & Schein, 2021).

Within occupational psychology, safety culture represents more than an organisational characteristic; it reflects the collective psychological environment that influences employees' perceptions, attitudes, motivation, and behavioural choices regarding workplace safety (Bandura, 1986). Individuals continuously interpret organisational priorities through everyday experiences, including leadership actions, communication practices, reward systems, peer interactions, and responses to reported concerns (Schein & Schein, 2021). These experiences gradually shape shared expectations regarding acceptable

workplace behaviour and determine whether safety becomes an organisational value or merely a procedural obligation (Guldenmund, 2000; Neal & Griffin, 2006).

Safety culture is therefore dynamic rather than static. It develops progressively through repeated interactions between organisational systems and human behaviour (Reason, 1997; Guldenmund, 2000; Finn et al., 2024). Leadership establishes strategic direction, organisational policies provide structural support, supervisors reinforce behavioural expectations, and employees collectively influence workplace norms through daily practice (Schein & Schein, 2021; Fukami, 2025). As these interactions accumulate over time, organisations develop characteristic patterns of safety-related thinking and behaviour that either strengthen or weaken long-term organisational performance (Neal & Griffin, 2006).

This dynamic perspective explains why organisations possessing similar technologies may demonstrate markedly different levels of safety performance. Employees working within positive safety cultures are generally more willing to report hazards, communicate operational concerns, participate in organisational learning, and comply with safe work practices even in the absence of direct supervision (Neal & Griffin, 2006; Edmondson, 1999). Conversely, organisations characterised by weak safety cultures often experience reduced trust, limited communication, under-reporting of near misses, procedural deviations, and declining organisational learning, thereby increasing vulnerability to operational failures (Reason, 1997; Guldenmund, 2000; Amoadu et al., 2023; Amoadu et al., 2024). These findings reinforce the view that sustainable safety is shaped not only by technical controls but also by the quality of organisational culture and employee behaviour.

Contemporary research increasingly views safety culture as a strategic organisational capability that contributes not only to accident prevention but also to resilience, adaptability, continuous improvement, and sustainable organisational performance (Schein & Schein, 2021; Guldenmund, 2000). Rather than functioning as an isolated component of safety management systems, safety culture integrates leadership, employee behaviour, organisational learning, communication, and decision-making into a unified organisational process that supports long-term operational excellence (Reason, 1997; Neal & Griffin, 2006; Finn et al., 2024). This understanding provides the theoretical foundation for the present study. If safety culture develops through the interaction of organisational systems and psychological processes, it becomes essential to identify the specific psychological mechanisms responsible for strengthening that culture. Among these mechanisms, competency and accountability emerge as particularly significant because they directly influence employees' ability and willingness to perform safely while reinforcing organisational expectations regarding responsible workplace behaviour. The following section therefore examines competency as the first fundamental psychological mechanism underlying sustainable safety culture.

2. Competency as a Psychological Foundation of Safety Culture

Competency is widely recognised as one of the fundamental determinants of safe workplace performance because it directly influences an individual's ability to recognise hazards, evaluate risks, make informed decisions, and perform work in accordance with established safety standards. Within occupational psychology, competency extends beyond technical proficiency. It represents an integrated combination of knowledge, practical skills, cognitive capability, professional judgement, experience, and behavioural attributes that enable employees to respond effectively to both routine operations and unexpected workplace situations (Bandura, 1986; Rahman et al., 2022). Contemporary research further indicates that workforce competency is a significant predictor of safety performance because competent

employees are better able to apply safety knowledge, recognise operational risks, and make appropriate decisions under changing workplace conditions (Christian et al., 2009; Casey et al., 2017). Competency therefore represents both an individual psychological resource and an organisational capability that underpins sustainable safety performance.

Traditional approaches to competency primarily emphasised technical qualifications and task-specific skills. However, contemporary occupational psychology recognises that safe performance also depends upon cognitive and behavioural competencies, including situational awareness, critical thinking, communication, decision-making, adaptability, and emotional self-regulation (Bandura, 1986; Rahman et al., 2022). Employees operating in complex and dynamic work environments are frequently required to interpret incomplete information, manage competing operational demands, and make timely decisions under uncertainty. Consequently, competency must be understood as a multidimensional psychological construct rather than merely a measure of technical expertise (Christian et al., 2009; Burke et al., 2002; Rahman et al., 2022).

From an organisational perspective, competency contributes to safety culture by increasing employees' confidence and capability to perform work safely while reducing dependence upon constant supervision. Competent individuals are more likely to identify emerging hazards, comply with established procedures, communicate operational concerns, and participate actively in organisational learning (Christian et al., 2009; Burke et al., 2002). Their behaviour reinforces collective confidence in safe work practices and contributes to the development of shared behavioural expectations across the organisation. In this manner, individual competency gradually becomes a collective organisational resource that strengthens safety culture (Schein & Schein, 2021; Neal & Griffin, 2006; Zaitoun et al., 2023).

Competency also influences the effectiveness of organisational learning. Employees possessing higher levels of professional competence are generally better equipped to interpret operational experiences, analyse incidents, identify underlying causes, and translate lessons learned into improved future performance (Marsick & Watkins, 2003). As knowledge is shared across teams and organisational levels, learning becomes embedded within routine practice, enhancing both individual capability and organisational resilience. This reciprocal relationship between competency and organisational learning supports continuous improvement rather than reactive responses to accidents (Schein & Schein, 2021). Contemporary research further suggests that competent employees contribute more effectively to organisational learning because they are better able to recognise emerging risks, communicate operational knowledge, and apply lessons learned to future work activities (Casey et al., 2017; Burke et al., 2002).

Despite its recognised importance, competency alone cannot guarantee sustainable safety performance. Highly competent employees may still engage in unsafe practices if organisational expectations are unclear, accountability systems are inconsistent, or production pressures discourage safe decision-making (Dekker, 2014). Safe behaviour therefore depends not only upon the capability to perform work safely but also upon organisational mechanisms that encourage the consistent application of that capability in everyday operations (Christian et al., 2009). Competency establishes the capacity for safe performance, but another complementary mechanism is required to ensure that such capacity is translated into consistent organisational behaviour (Zaitoun et al., 2023). This distinction is central to the present conceptual study. Competency answers the fundamental question of whether employees are capable of performing work safely. However, sustainable safety culture requires an additional mechanism that reinforces responsibility, ownership, behavioural consistency, and organisational

commitment to safe performance. This mechanism is accountability, which forms the second major psychological foundation of the conceptual framework developed in this study.

3. Accountability as the Behavioural Reinforcement Mechanism

While competency provides employees with the capability to perform work safely, accountability provides the behavioural reinforcement necessary to sustain safe performance over time. Within occupational psychology, accountability extends beyond supervision, disciplinary procedures, or performance evaluation. It represents a psychological and organisational process through which individuals recognise, accept, and consistently fulfil responsibility for their decisions, actions, and their consequences (Bandura, 1986; Dekker, 2014). In this sense, accountability functions as a mechanism that aligns individual behaviour with organisational expectations and collective safety objectives. Contemporary safety literature further emphasises that accountability is most effective when embedded within a fair and learning-oriented organisational culture that promotes responsibility, transparency, and continuous improvement rather than blame alone.

Traditional approaches frequently associated accountability with blame, punishment, and error correction. Although such approaches may achieve short-term compliance, they often discourage open communication, reduce trust, and inhibit organisational learning. Employees working within blame-oriented environments may conceal errors, avoid reporting hazards, or hesitate to question unsafe practices because of fear of negative consequences. Such behavioural responses weaken organisational learning and undermine the long-term development of a positive safety culture (Dekker, 2007; Boysen, 2013). Contemporary safety science therefore advocates a Just Culture, in which accountability is balanced with fairness, learning, and system improvement rather than blame alone, thereby encouraging reporting, organisational learning, and continuous safety improvement.

Contemporary occupational psychology advocates a broader understanding of accountability based upon fairness, transparency, learning, and shared responsibility. From this perspective, accountability encourages employees to take ownership of safe work practices while recognising that organisational systems, leadership behaviour, communication processes, and resource availability also influence individual performance (Dekker, 2007). Rather than focusing exclusively on assigning fault, effective accountability seeks to strengthen responsible behaviour through constructive feedback, continuous improvement, and mutual commitment to organisational safety objectives (Boysen, 2013). Such balanced accountability promotes employee trust, strengthens organisational learning, and reinforces a positive safety culture by encouraging individuals to report concerns and participate actively in safety improvement initiatives.

Accountability also plays an important role in shaping behavioural consistency throughout an organisation. Competent employees may possess the knowledge and technical ability required to perform safely; however, without clear behavioural expectations and organisational reinforcement, safe performance may vary according to situational pressures, workload, production demands, or individual judgement (Christian et al., 2009). Accountability reduces this variability by establishing clear expectations regarding safe conduct and reinforcing the consistent application of professional competence under both routine and non-routine operational conditions (Dekker, 2007). Consequently, accountability serves as the behavioural mechanism that translates individual capability into reliable organisational performance, thereby strengthening safety culture and supporting long-term operational reliability (Boysen, 2013).

From a safety culture perspective, accountability contributes to the development of organisational trust and credibility. Employees are more likely to engage in hazard reporting, open communication, and organisational learning when accountability systems are perceived as fair, predictable, and focused on improvement rather than punishment (Dekker, 2007; Boysen, 2013). Leaders who demonstrate accountability through their own decisions and behaviours further reinforce organisational values by modelling the standards expected throughout the workforce (Schein & Schein, 2021). Consequently, accountability becomes embedded within everyday organisational practice rather than remaining a formal administrative process, thereby strengthening organisational commitment to sustainable safety performance.

The present study therefore conceptualises accountability as the behavioural reinforcement mechanism that complements competency within the development of safety culture. Whereas competency determines whether individuals possess the capability to perform work safely, accountability influences whether that capability is applied consistently in support of organisational safety objectives (Christian et al., 2009; Dekker, 2007). Together, these complementary mechanisms establish the behavioural foundation upon which sustainable safety culture can be developed. Their effectiveness, however, is further influenced by broader organisational conditions, particularly psychological safety, leadership, and organisational learning, which are examined in the following section (Edmondson, 1999; Schein & Schein, 2021).

4. Psychological Safety, Leadership, and Organisational Learning as Enabling Mechanisms

Psychological safety has emerged as one of the most influential concepts in contemporary organisational psychology and safety science because it explains the interpersonal conditions under which employees feel able to express concerns, report hazards, admit mistakes, ask questions, and contribute ideas without fear of embarrassment, retaliation, or negative consequences (Edmondson, 1999, 2019). Unlike physical safety, psychological safety reflects employees' shared perceptions that the workplace supports open communication, mutual respect, and constructive interpersonal relationships. Within organisations that demonstrate high levels of psychological safety, employees are more willing to communicate operational concerns, participate in problem-solving, share lessons learned, and contribute to continuous organisational improvement. Recent evidence further indicates that psychologically safe environments strengthen employee voice, collaborative learning, and organisational resilience, particularly within complex and high-risk operational settings (Dong et al., 2024; Fatoki, 2024; Ok et al., 2025).

Within safety-critical organisations, psychological safety facilitates the timely exchange of information that is essential for effective hazard identification, risk management, and organisational learning. Employees who feel psychologically safe are more likely to report near misses, question unsafe practices, seek clarification when uncertainty exists, and share operational knowledge without fear of blame or personal consequences (Edmondson, 1999). Such behaviours strengthen organisational learning by allowing latent risks to be identified before they develop into incidents, thereby improving both individual and organisational safety performance (Reason, 1997; Marsick & Watkins, 2003). Contemporary research further demonstrates that psychological safety promotes speaking-up behaviour, constructive feedback, collaborative problem-solving, and continuous learning, all of which contribute to stronger safety culture and organisational resilience (Fatoki, 2024; Jin & Peng, 2024; Santa et al., 2024). Leadership plays a fundamental role in establishing and sustaining psychologically safe workplaces. Organisational leaders influence employees' willingness to communicate concerns through their

everyday behaviours, including active listening, respectful communication, fairness, consistency, and openness to feedback. When leaders encourage constructive discussion, acknowledge uncertainty, and respond positively to reported concerns, employees develop greater confidence that speaking up will lead to learning and improvement rather than criticism or punishment (Edmondson, 2019). Consequently, leadership behaviours become a critical determinant of psychological safety, shaping employee trust, collaboration, and organisational learning. Recent empirical studies further demonstrate that inclusive and responsible leadership significantly enhances psychological safety, employee voice, and safety culture across diverse organisational settings (Fatoki, 2024; Omid et al., 2023; Finn et al., 2024).

Psychological safety also serves as a critical foundation for organisational learning, which enables organisations to continuously improve safety performance through reflection, knowledge sharing, and learning from operational experience. Employees are more willing to report incidents, discuss mistakes, question existing practices, and exchange professional knowledge when they perceive that errors will be treated as opportunities for learning rather than occasions for blame (Marsick & Watkins, 2003; Edmondson, 2019). Such open communication strengthens collective learning, enhances adaptive organisational capability, and supports continuous improvement of safety systems. Recent studies further demonstrate that psychologically safe environments facilitate collaborative learning, knowledge exchange, and quality improvement, thereby reinforcing both organisational resilience and long-term safety culture (Santa et al., 2024; Jin & Peng, 2024).

The present study therefore conceptualises psychological safety as the organisational condition that enables competency and accountability to operate effectively within a positive safety culture. Competent employees possess the knowledge and capability to perform work safely, while accountability encourages the consistent application of that capability. Psychological safety complements these mechanisms by creating an environment in which employees feel confident to communicate hazards, report errors, seek assistance, challenge unsafe decisions, and contribute to organisational learning without fear of negative consequences (Edmondson, 1999, 2019). Consequently, sustainable safety culture is strengthened not by any single psychological or organisational factor, but through the dynamic interaction of competency, accountability, psychological safety, leadership, and organisational learning. This integrated perspective provides the conceptual foundation for the framework proposed in the following section (Christian et al., 2009; Dekker, 2014; Santa et al., 2024).

5. An Integrated Conceptual Framework for Enhancing Safety Culture

The preceding sections have demonstrated that competency, accountability, psychological safety, leadership, and organisational learning each make distinct yet complementary contributions to the development of sustainable safety culture. Although these constructs have been extensively examined within occupational psychology, organisational behaviour, and safety science, they are frequently investigated as separate determinants of safety performance. Such an approach provides valuable insights into individual factors but may not fully explain how these psychological and organisational mechanisms interact to influence everyday safety behaviour within complex work environments. The present study therefore proposes an integrated conceptual framework that brings these complementary constructs together into a unified model for understanding the development and maintenance of sustainable safety culture (Reason, 1997; Schein & Schein, 2021; Edmondson, 2019). The integrated

relationships among these complementary constructs are presented in the proposed conceptual framework (Figure 1).

Within the proposed framework, competency represents the foundation of safe performance by providing employees with the knowledge, technical skills, cognitive capability, and professional judgement required to perform work safely. Accountability reinforces this capability by promoting the consistent application of safe behaviours through clear expectations, personal responsibility, and organisational fairness. Leadership influences both competency and accountability by establishing organisational priorities, allocating resources, modelling safe behaviour, and creating an environment characterised by trust and openness. Psychological safety strengthens this environment by encouraging employees to communicate hazards, seek clarification, report mistakes, and contribute ideas without fear of negative consequences. These interactions collectively support organisational learning, through which operational experience is transformed into shared knowledge, continuous improvement, and ultimately a resilient and sustainable safety culture (Christian et al., 2009; Dekker, 2014; Edmondson, 2019; Marsick & Watkins, 2003; Santa et al., 2024).

The proposed framework provides a practical perspective for organisations seeking to strengthen sustainable safety culture beyond regulatory compliance and technical safety management systems. Rather than implementing isolated interventions, organisations should adopt an integrated approach that simultaneously develops employee competency, promotes fair accountability, encourages psychologically safe communication, strengthens leadership capability, and supports continuous organisational learning. Such alignment enables safety to become embedded within everyday organisational behaviour rather than remaining a compliance-driven activity. Consequently, improvements in safety performance are more likely to be sustained because the underlying psychological, behavioural, and organisational mechanisms operate in a coordinated and mutually reinforcing manner (Reason, 1997; Schein & Schein, 2021; Christian et al., 2009; Edmondson, 2019).

The integrated conceptual framework proposed in this study emphasises that sustainable safety culture emerges from the dynamic interaction of psychological, behavioural, and organisational factors rather than from isolated interventions or technical controls alone. Competency, accountability, psychological safety, leadership, and organisational learning function as mutually reinforcing mechanisms that collectively influence how individuals perceive risk, make decisions, communicate concerns, and continuously improve organisational safety performance. By integrating these complementary constructs into a single explanatory framework, the present study contributes to a more comprehensive understanding of sustainable safety culture and offers a theoretical foundation for future empirical research, organisational practice, and evidence-based safety management strategies (Reason, 1997; Christian et al., 2009; Edmondson, 2019; Schein & Schein, 2021). The proposed framework (Figure 1) provides a theoretical foundation for future empirical investigation and organisational application.

Figure 1. Integrated Conceptual Framework for Sustainable Safety Culture



6. Implications for Occupational Psychology and Organisational Practice

The present conceptual study has examined sustainable safety culture from an integrated occupational psychology perspective by synthesising evidence relating to competency, accountability, psychological safety, leadership, and organisational learning. The findings demonstrate that sustainable safety culture extends beyond regulatory compliance, technical controls, and formal safety management systems. Instead, it emerges through the continuous interaction of psychological, behavioural, and organisational processes that influence how individuals perceive hazards, communicate concerns, make operational decisions, and learn from experience. Collectively, these interacting mechanisms provide a more comprehensive explanation of sustainable safety culture than approaches that consider individual factors in isolation (Reason, 1997; Schein & Schein, 2021; Edmondson, 2019).

From a practical perspective, the proposed framework suggests that organisations should adopt an integrated strategy for strengthening safety culture rather than relying on isolated interventions. While technical safeguards and regulatory requirements remain essential, sustainable improvements are more likely to be achieved when organisations simultaneously develop employee competency, promote fair accountability, foster psychologically safe communication, demonstrate effective leadership, and support continuous organisational learning. Such an integrated approach encourages employee engagement, strengthens hazard reporting, improves decision-making, and enhances organisational resilience, thereby contributing to long-term safety performance (Christian et al., 2009; Dekker, 2014; Edmondson, 2019; Santa et al., 2024).

The study also contributes to occupational psychology by providing a unified conceptual explanation of how individual capability and organisational responsibility interact within a broader organisational environment. By integrating competency, accountability, psychological safety, leadership, and

organisational learning into a single framework, the study extends existing literature and offers a theoretical foundation for understanding sustainable safety culture as a dynamic organisational capability rather than the outcome of isolated behavioural or technical interventions (Reason, 1997; Schein & Schein, 2021; Edmondson, 2019).

As a conceptual study, several limitations should be acknowledged. The proposed framework has been developed through the synthesis of existing literature rather than empirical investigation and should therefore be regarded as a theoretical model requiring future validation. Empirical studies conducted across different industries, organisational contexts, and cultural settings would provide valuable evidence regarding the relationships among competency, accountability, psychological safety, leadership, organisational learning, and sustainable safety culture. Future research may also examine potential mediating and moderating mechanisms, investigate the relative contribution of individual framework components, and evaluate the applicability of the framework within diverse high-risk industries.

7. Conclusion

This study set out to examine how competency and accountability contribute to the development of sustainable safety culture from the perspective of occupational psychology. The review demonstrates that sustainable safety cannot be achieved solely through engineering controls, regulatory compliance, or formal safety management systems. Rather, long-term organisational safety depends upon the interaction of psychological and organisational processes that shape how individuals perceive risk, make decisions, communicate concerns, accept responsibility, and continuously learn from operational experience.

The proposed integrated conceptual framework identifies competency and accountability as complementary psychological foundations of safety culture, while recognising psychological safety, leadership, and organisational learning as essential organisational mechanisms that enable these foundations to operate effectively. Together, these interacting constructs provide a coherent explanation of how individual capability, responsible behaviour, and organisational conditions collectively influence safety performance and organisational resilience.

By integrating these complementary constructs within a unified theoretical model, the study contributes to the growing body of occupational psychology and safety management literature by offering a comprehensive perspective on the development of sustainable safety culture. It is anticipated that the proposed framework will support future theoretical advancement, inform evidence-based organisational practice, and assist organisations in designing balanced strategies that strengthen sustainable safety culture through competency, accountability, psychologically safe communication, leadership, and organisational learning.

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