



**SAFETY COMPLIANCE AND OCCUPATIONAL ACCIDENTS: EVIDENCE
FROM HOSPITAL EMPLOYEES USING STRUCTURAL EQUATION
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Abstract

Occupational accidents in hospitals remain a safety issue that impacts the sustainability of services and organizational performance. This study aims to analyse the influence of Safety Leadership, Safety Climate, and Safety Self-Efficacy on Occupational Accidents with Safety Compliance as a mediating variable among employees at Tzu Chi Hospital. The study used a quantitative approach with an analytical survey design. Respondents numbered 296 employees from various work units. Data were collected through a structured questionnaire and analysed using Structural Equation Modelling (SEM) AMOS version 29 to test the direct and indirect effects between variables. The analysis results show that Safety Leadership, Safety Climate, and Safety Self-Efficacy have a significant effect on Safety Compliance. Safety Compliance has a significant effect on Workplace Accidents. In addition, Safety Compliance is proven to mediate the influence of Safety Leadership, Safety Climate, and Safety Self-Efficacy on Workplace Accidents. These findings indicate that strengthening safety leadership, consistent perceptions of safety climate, and employee confidence in safety capabilities play an important role in shaping safe work compliance and reducing the incidence of workplace accidents. This study concludes that occupational accident prevention strategies in hospitals need to focus on strengthening safety leadership behaviour, a supportive safety climate, and increasing employee self-efficacy to encourage sustainable safety compliance.

Keywords: Safety Leadership, Safety Climate, Safety Self-Efficacy, Safety Compliance, Occupational Accidents



INTRODUCTION

Occupational safety in hospitals is a critical issue because it directly relates to worker health, service continuity, and the quality of healthcare services. Hospital workers face various risks, ranging from physical injury and exposure to hazardous materials to high work pressure, which can increase the potential for workplace accidents. Globally, the healthcare sector still shows significant rates of occupational injuries, indicating that risk control systems are not yet fully effective (WHO, 2021; Abdelmalik et al., 2023). This situation emphasizes the need for occupational safety to be managed as an integral part of the hospital management system.

Modern safety approaches view workplace accidents as the result of a complex interaction between organizational factors, the work environment, and individual behaviour (Reason, 1997; Leveson, 2012). Within this framework, safety climate reflects workers' perceptions of the organization's commitment to safety, which has been shown to influence safe work behaviour (Zohar, 2014). The role of leadership is also crucial, as safety leadership at the work unit level translates safety policies into concrete practices through risk communication, role modelling, and supervision (Adra et al., 2024; Jiang et al., 2024). Furthermore, individual factors such as safety self-efficacy also determine the extent to which workers are confident in working safely and complying with safety procedures (Bandura, 1997; Hu et al., 2022).

A key behaviour that bridges organizational factors and safety outcomes is safety compliance, namely adherence to workplace safety procedures and rules (Griffin & Neal, 2000). This compliance plays a crucial role in reducing workplace accidents, as workers who adhere to procedures are more likely to avoid risks. Several studies have shown that the influence of leadership and safety climate on workplace accidents often occurs indirectly through increased safety compliance (Omidia et al., 2023; Gao et al., 2025).

However, research integrating safety leadership, safety climate, safety self-efficacy, safety compliance, and workplace accidents into a comprehensive model in the context of hospitals in Indonesia is still limited. At Tzu Chi Hospital, workplace accidents are still found despite the existence of safety policies, indicating a gap between policies and practices in the field. Therefore, this study aims to analyse the influence of safety leadership, safety climate, and safety self-efficacy on workplace accidents with safety compliance as a mediating variable, in order to provide a scientific basis for strengthening occupational safety strategies in hospitals.



LITERATURE REVIEW

Accident Work (Non- Medical)

Accident Work is incident No unexpected events in the work process and results injury, disorder health, damage equipment, or disturbance operational. In the environment House sick, accident Work No only experienced by the workforce medical, but also by non- medical workers like officer cleanliness, technicians, officers' logistics, security, and staff administration that has exposure risk physique and environment hazardous work (WHO, 2021; Khoshakhlagh et al., 2023). Risk the covering slip, trip, fall, be crushed objects, exposure material chemistry cleaner, up to injury consequence use tool Work.

Approach modern safety views accident Work as results interaction between factor organization, environment work and behaviour individual, not solely consequence error human (Reason, 1997; Leveson, 2012). In the context of House pain, complexity activity operational, pressure time, and diversity type work increase potential occurrence accidents, especially among non- medical workers who are often less become safety program focus compared to power clinical (Abdelmalik et al., 2023). Therefore, preventing occupational accidents requires a systemic approach involving risk management, leadership, safety culture, and safe work behaviours.

Various studies have shown that workplace accidents can be reduced by increasing compliance with safety procedures and strengthening organizational factors such as safety leadership and safety climate (Griffin & Neal, 2000; Omidi et al., 2023). Therefore, workplace accidents in this study are viewed as outcomes influenced by a combination of organizational factors and worker safety behaviours. Focusing on non-medical workplace accidents is important because this group of workers has different task characteristics and risk exposures, thus requiring a more specific and evidence-based prevention approach.

In this study, non-medical occupational accidents are defined as injuries or work-related incidents experienced by non-medical workers in a hospital environment during a specific work period. The indicators used reflect incidents such as slips and falls, injuries caused by equipment or work objects, exposure to hazardous materials, and near-misses, which collectively describe the level of occupational safety risk among non-medical workers.

Safety Leadership

Safety leadership refers to the behaviour of leaders who prioritize safety and influence their subordinates to work safely. In the context of high-risk organizations, leadership focuses not only on achieving performance targets but also on protecting workers by enforcing safety standards and creating a safe work



culture (Zohar, 2014; Adra et al., 2024). Leaders act as role models, demonstrating a commitment to safety through concrete actions, risk communication, and oversight of daily work practices.

In the complex and dynamic hospital environment, the role of safety leadership becomes increasingly important as workers frequently face emergency situations, time pressures, and high workloads. Supportive leadership safety help create environment work that encourages communication open about risk and reporting incident without fear, so that potential danger can identified and controlled earlier (Leveson, 2012; Omidi et al., 2023). With Thus, safety leadership viewed as determinant important in increase compliance safety and reduce incident accident Work.

In research this, safety leadership understood as behaviour work unit leader consistent show commitment to safety through communication, supervision, support, and role modelling in practice Work safe. Dimensions used reflect aspect communication safety, exemplary behaviour leader, supervision to practice work, and support to reporting and improvement risk, which is overall reflect to what extent is the leader play a role active in manage safety work in the environment House Sick.

Safety Climate

Safety climate describe perception together worker about how far is safety prioritized, supported, and enforced in organization. Concept This emphasize that method organization communicate, implement, and enforce policy safety will form perception worker to importance Work in a way safe (Zohar, 2014). Positive safety climate reflects existence commitment management to safety, communication open about risks, as well as availability source adequate power for support practice Work safe.

In context House sick, climate safety become very important Because environment complex work, mobility high, and pressure operational can increase risk accidents, especially for non- medical workers. Support management, availability training safety, as well as system reporting incidents that did not occur blame individual is indicator important from climate good safety (WHO, 2021; Omidi et al., 2023). Strong safety climate help ensure that worker feel supported for prioritize safety although is at in situation busy work or urge.

In this study, safety climate is understood as non-medical workers' perceptions of the organization's commitment to occupational safety. The dimensions used reflect aspects of management commitment to safety, risk-related communication and feedback, the availability of safety training and



procedures, and support for incident reporting, which collectively describe the extent to which the work environment supports safety behaviour.

Safety Self-Efficacy

Self-efficacy refers to an individual's belief in their ability to work safely and prevent workplace accidents. This concept is rooted in Bandura's self-efficacy theory, which states that a person's belief in their abilities influences how they think, act, and respond to risky situations (Bandura, 1997). In the context of occupational safety, workers with high levels of safety self-efficacy tend to be more confident in identifying hazards, using personal protective equipment correctly, and following safe work procedures.

Theoretically, safety self-efficacy acts as a psychological factor influencing safety behaviour. Workers who are confident in their ability to work safely are more likely to exhibit proactive behaviours, such as refusing risky work practices, alerting coworkers to hazards, and reporting unsafe conditions (Neal & Griffin, 2006; Hu et al., 2022). This self-efficacy is especially important in dynamic and stressful work situations, where quick decisions are often required to prevent accidents.

In this study, safety self-efficacy is understood as non-medical workers' confidence in their ability to implement safe work practices. The dimensions used reflect aspects of confidence in recognizing hazards, the ability to use procedures and personal protective equipment correctly, confidence in preventing accidents, and the ability to act safely in risky work situations. Overall, this reflects an individual's psychological readiness to maintain occupational safety.

Safety Compliance

Safety compliance refers to workers' behaviour in following established workplace safety procedures, rules, and standards. This concept emphasizes adherence to formal instructions, such as the use of personal protective equipment, following safe work procedures, and adhering to operational guidelines designed to prevent accidents (Griffin & Neal, 2000). Safety compliance is a mandatory form of safety behaviour and serves as the basis for protecting workers from occupational risks.

In the hospital context, safety compliance is crucial for non-medical workers who frequently interact with risky environments, such as slippery floors, heavy equipment, cleaning chemicals, or high-mobility areas. Failure to adhere to simple procedures such as wearing appropriate footwear, proper lifting techniques, or reporting hazardous conditions can increase the risk of workplace accidents (WHO, 2021; Omid et al., 2023). Therefore, safety compliance is seen as



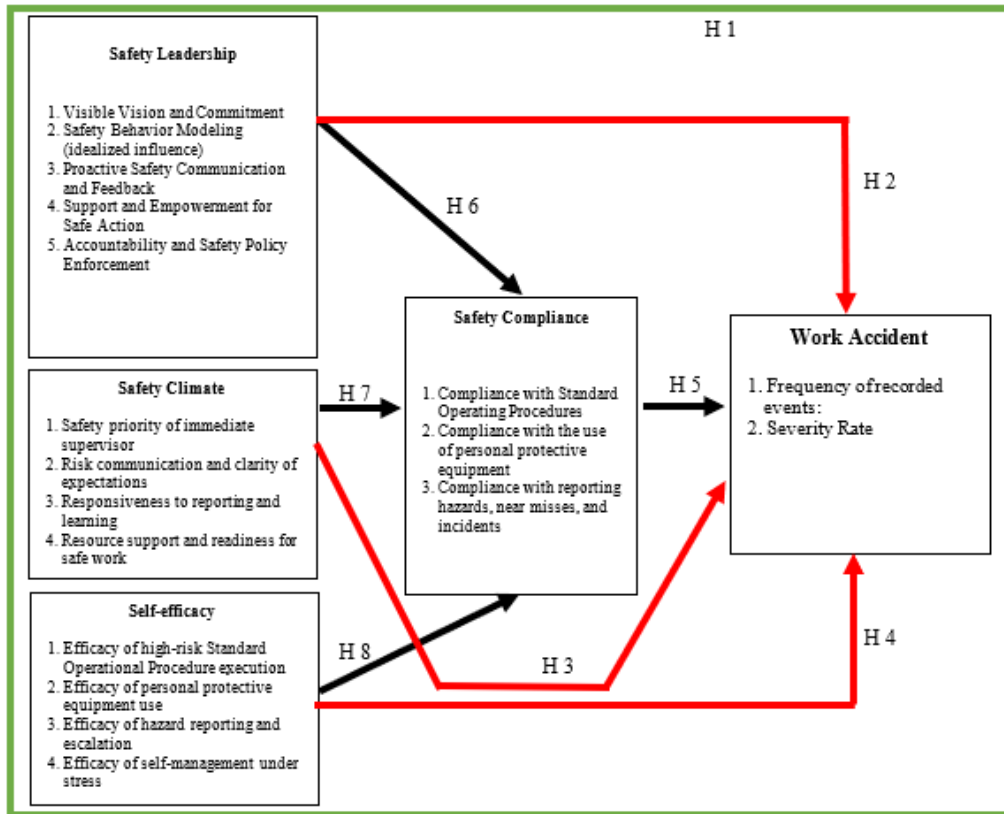
a crucial link between organizational factors and reducing workplace accident rates.

In this study, safety compliance is defined as the level of consistency among non-medical workers in following applicable hospital safety procedures and regulations. The dimensions used reflect aspects of adherence to safe work procedures, use of personal protective equipment, compliance with safety instructions from superiors, and discipline in reporting unsafe conditions, which collectively describe formal safety behaviour in the workplace.

RESEARCH METHOD

Study This use approach quantitative with design cut latitude through survey of all employee units House sick, so all over construct measured in a way simultaneous in One period data collection. Instruments collected using Google Forms to make it easier access respondents and minimize coverage bias as well as Nonresponse. Questionnaire data were combined with internal work incident data as an indicator of objective outcomes at the individual level. Analysis was conducted using confirmatory factor analysis (CFA) to test construct validity, followed by structural equation modelling (SEM) using AMOS with maximum likelihood estimation and evaluation of model feasibility based on commonly used fit indices.

The independent variables include safety leadership, safety climate, and safety self-efficacy; the mediator variable is safety compliance; and the dependent variable is workplace accidents. The research model positions compliance as a behavioural mechanism that channels the influence of organizational and psychological factors on accident outcomes. Safety leadership is positioned as a driver of safety values and practices at the team level, while safety climate represents shared perceptions of the organization's safety priorities and expectations. Using this framework, the study examines the direct and indirect effects of these three factors on workplace accidents through safety compliance, consistent with the literature on safety leadership and organizational climate.



H9: X1-Z-Y H10 : X2-Z-Y H11: X3-Z-Y

Figure 1.

Research Concept Framework

RESULTS AND DISCUSSION

AVE (Construct Convergent Validity) Test Results

Table 1.

Results of Convergent Validity Test of Constructs

Variables	Total number			AVE (> 0.5)	Results
	SLF	SLF^2	Error		
Safety Leadership (X1)	7,011	6,145	1,881	0.766	VALID
Safety Climate (X2)	6,978	6,088	1,924	0.760	VALID
Self -Efficacy Safety (X3)	6,981	6,094	1,923	0.760	VALID
Compliance Safety (Z)	5,358	4,786	1,408	0.773	VALID
Accident Work (Y)	1,877	1,762	0.297	0.856	VALID

Source: AMOS output (standardized loading), processed researchers



Validity test results show that all over research constructs have been fulfil validity convergent, with AVE value of each variable is above 0.50. The AVE value is recorded of 0.766 for safety leadership, 0.760 for climate safety, 0.760 for safety self-efficacy, 0.773 for compliance safety, and 0.856 for accident work. This finding confirms that every construct capable explain variance indicator in a way adequate and suitable used in analysis continued.

Construct Reliability Test Results

Table 2.
Instrument Reliability Test Results

Variables	CR	Information
Safety Leadership (X1)	0.963	Very strong reliability
Safety Climate (X2)	0.962	Very strong reliability
Safety Self-Efficacy (X3)	0.962	Very strong reliability
Compliance Safety (Z)	0.953	Very strong reliability
Accident Work (Y)	0.922	Very strong reliability

Source: AMOS output (standardized loading), processed researchers

Reliability test results show that all over construct own composite reliability is above the feasibility limit of 0.70, which indicates the internal consistency of the instrument is very good. The composite reliability value was recorded of 0.963 for safety leadership, 0.962 for climate safety, 0.962 for safety self-efficacy, 0.953 for compliance safety, and 0.922 for accident work. With Thus, all variables stated reliable and worthy used in analysis continued.

Three Box Method Test Results

Table 3.
Matrix Three Box Method Behaviour

No	Variables	Three Box Method Position			Behaviour
		74 – 148	149 – 222	223– 296	
1	Safety Leadership		*		Enough example
2	Safety Climate		*		Conducive
3	Safety Self-Efficacy		*		Believe self
4	Compliance Safety		*		Obedient
5	Accident Work	*			Minimal injury

Source: Primary data, processed by researchers

The condition of "moderate driving force but low accidents" indicates a relatively favourable situation but risks stagnation if not strengthened. Safety climate, as a shared perception of safety priorities, influences safety behaviour, particularly compliance. Meta-analytic evidence also shows that safety leadership

is related to safety behaviour, so strengthening leadership quality and supervisory practices is a key lever for pushing variables that are still in the moderate category to the high category and maintaining low accident outcomes. Self-efficacy also plays a role because confidence in one's abilities influences the consistency of safe behaviour. The synthesis findings also confirm that the formation of a safety climate is strongly influenced by managerial and supervisory factors, so the focus of interventions needs to be directed at these levels.

Results of Structural Equation of Research Model with AMOS

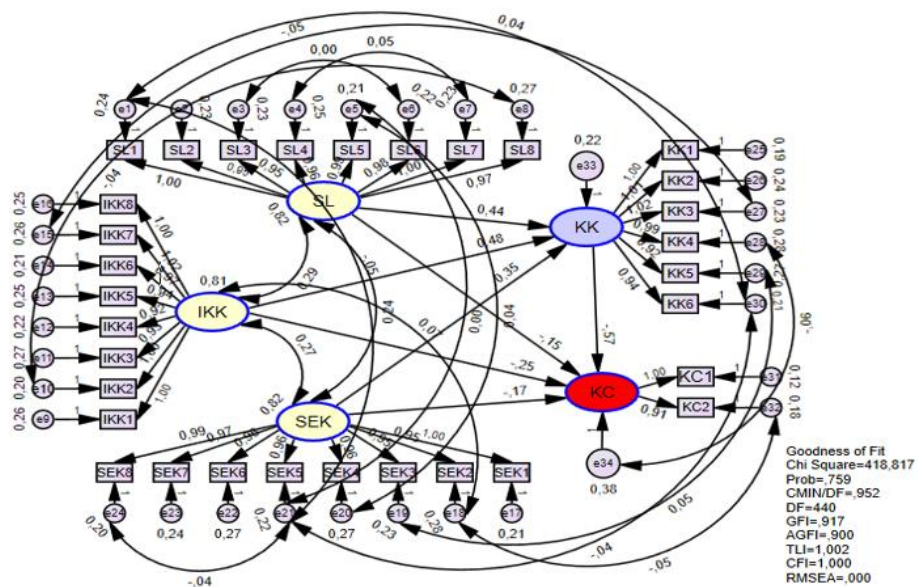


Figure 2.

Structural Equation of Research Model with AMOS

Conceptually, the model tests two sets of pathways. First, the pathway from SL, IKK, and SEK to KK to explain the formation of compliance behaviour towards SOPs, PPE, and reporting. Second, the pathway from SL, IKK, SEK, and KK to KC to explain variations in work accidents. This study also includes a mediation pathway through KK, so that the influence of SL, IKK, and SEK on KC is not only tested directly, but also tested as an indirect influence through increased safety compliance. Furthermore, the model allows for covariance between exogenous constructs because the three can be interrelated in the context of the organization and work behaviour.



Normality Test Results

Table 4. Normally Test Results

Table with 7 columns: Variables, min, max, skew, cr, kurtosis, cr. Rows include Safety Leadership (X1), Safety Climate (X2), Self-Efficacy Safety (X3), Compliance Safety (Z), Accident Work (Y), and Multivariate.

Source: AMOS (Assessment of normality) output, processed researcher.

Assessment of Normality Results show that the data meets assumptions normality multivariate and feasible analyzed with SEM. Although in a way univariate variables Accident Work (Y) shows deviation in skewness (cr = 6.095), evaluation main in AMOS -based SEM is based on normality multivariate. Multivariate critical ratio value 2,003 is below threshold of 2.58, so that data distribution in overall can declared normal and satisfactory assumptions for structural model testing.

Model Goodness of Fit Test Results

Table 5. Results of the Model Suitability Test (Goodness of Fit)

Table with 5 columns: No, Parameters FIT Index, Cut-off Value (Requirements), AMOS Output Results, Evaluation. Rows list various fit indices like Chi-Square, Probability, CMIN/DF, GFI, AGFI, TLI, CFI, and RMSEA.

Source: AMOS (Goodness of Fit) output, processed researcher.

Goodness of Fit Results show that the model has excellent fit. Chi-square value = 418.817 (df = 440) smaller from mark table (≈ 489.90) with Probability = 0.759 (> 0.05), so that difference between matrix covariance samples and models are not significant. The CMIN/DF ratio = 0.952 is below the feasibility limit. The



index suitability others also meet criteria, namely GFI = 0.917 and AGFI = 0.900, as well as TLI = 1.002 and CFI = 1.000. The RMSEA value = 0.000 indicates close fit. In whole, entire index confirm that the model is feasible used for parameter interpretation and testing hypothesis continued.

Results of the Determination Coefficient Test (R²)

Table 6. R Results of the Coefficient of Determination (R²) Test

Variables	Estimate
KK (Compliance) Safety)	0.767
KC (Work Accident)	0.688

Source: AMOS (Determination Coefficient Test) output, processed researcher.

Squared Multiple Correlations (R²) value shows that the model is capable explains 76.7% of the variation Compliance Safety (R² = 0.767), while 23.3% is influenced other factors outside the model. Potential factors that have not been covered including knowledge and motivation safety, quality training, as well as demands work and pressure time that can influence consistency compliance towards SOP.

For Accident Work, the value of R² = 0.688 shows that the model explains 68.8% of the variation incident accidents, while the remaining 31.2% originate from other factors, such as level exposure danger, fatigue work, complexity tasks, as well as availability source Power work. In addition, on the variable accident based self-report there is potential reporting bias, because part incident Possible No reported or remember in a way No accurate, which is also influenced by climate safety and stress production.

Hypothesis Test Results

Table 7. Results of Direct Effect Hypothesis Testing

Hypothesis Influence Direct							
Code	Hypothesis	Path	β	SE	CR	P < 0.05	Conclusion
H2	Safety Leadership → Accident Work	X1 → Y	-0.15	0.066	-2,274	0.023	Accepted



Hypothesis Influence Direct							
Code	Hypothesis	Path	β	SE	CR	P < 0.05	Conclusion
H3	Safety Climate → Accident Work	X2 → Y	-0.248	0.069	-3.57	***	Accepted
H4	Occupational Accident Safety Self- efficacy →	X3 → Y	-0.167	0.06	-2,785	0.005	Accepted
H5	Compliance Safety → Accident Work	Z → Y	-0.572	0.097	-5,879	***	Accepted
H6	Safety Leadership → Compliance Safety	X1 → Z	0.444	0.042	10,477	***	Accepted
H7	Safety Climate → Compliance Safety	X2 → Z	0.479	0.044	10,792	***	Accepted
H8	Safety Self- efficacy → Safety Compliance	X3 → Z	0.354	0.041	8,671	***	Accepted

Source: AMOS (Regression Weights) output, processed researcher.

Table 8.
Results of Indirect Effect Hypothesis Testing

Hypothesis Indirect Influence						
Code	Hypothesis	Path	Sobel Test		Conclusion	
			t-stat	P values		
H9	Safety Leadership → Compliance Safety → Work Accidents	X1 → Z → Y	-5,150	0,000	Accepted	
H10	Safety Climate Safety → Compliance → Workplace Accidents	X2 → Z → Y	-5,189	0,000	Accepted	



H11	Self-efficacy →Compliance →Work Accidents	Safety Safety	X3 →Z →Y	-4,870	0,000	Accepted
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Source: Sorbel Test output, processed researchers

Influence Safety Leadership, Safety Climate, and Self-Efficacy Safety in a way simultaneous to Accident Work through Compliance Safety

The model fit test shows that structure connection intervariable is in the category worthy, so that can interpret in a way scientific. These results confirm that Safety Leadership, Safety Climate, and Self-Efficacy Safety in a way simultaneous influential to Accident Work through Compliance Safety with direction connection protective, namely the better-quality factor safety so accident Work tend the lower. This finding shows that fourth variables form One interrelated systems in influence safety outcomes Work.

Three Box Method Results show Safety Leadership, Safety Climate, Self-Efficacy Safety and Compliance Safety is in the category moderate, whereas Accident Work is in the category Low. Safety Leadership's strength lies in the role model and commitment of superiors, while its weakness lies in daily safety communication. Safety Climate is strongest in resource support, but weak in preventing shortcuts. Safety Self-Efficacy is strongest in confidence in PPE use, but weak in persistence in safe behaviour when work pressure increases. Safety Compliance is strongest in PPE use and lowest in consistency in implementing SOP sequences. These findings indicate that strengthening needs to focus on consistency in safety communication, controlling shortcuts, courage to act safely under pressure, and SOP discipline.

In a way theoretically, these results are in line with performance model safety that places leadership and climate safety as determinant behavior safety that impacts accidents work (Griffin & Neal, 2000). Efficacy self-play a role in push individual still behaves safe although face obstacle situational (Bandura, 1977), whereas priority safety leadership establish work norms safe in the work unit (Zohar, 2002; Zohar, 2008). With thus, the decline accident Work more effective achieved through strengthening factor leadership, climate, and beliefs embodied individual in compliance real to procedure safety.

Influence Safety Leadership to Accident Work

The results of the study show that ease of use has an effect significant Test results hypothesis show that Safety Leadership influential negative and significant to Work Accident, so that the stronger leadership safety for superiors directly, more and more low trend occurrence injury work. Structural model



stated worthy, so that direction connection This can used as base interpretation. In descriptive, Safety Leadership is in the category currently with strength focus on exemplary behaviour and commitment the boss who emphasized safety as priority, whereas weakness lies in consistency pro- safety communication in activity daily. On the other hand, Accident Work is in the category low, but aspect frequency incident Still become point the weakest that needs to be anticipated.

In a way theoretical, Safety Leadership functioning as signal priority organization that forms climate safety and encouragement formation knowledge as well as motivation safety workers, who then translated become behaviour Work safe. Mechanism This in line with framework performance safety that places leadership and climate as factor contextual main in pressing opportunity exposure danger. In addition, the perspective exchange social explains that attention leader to safety push reciprocal obligations worker for comply and report condition dangerous, while approach accident organization look at leadership as barrier and control reinforcement system Work so that gap occurrence incident can minimized.

Findings This supported proof empirical that leadership safety and style leadership transformational associate with performance greater safety Good as well as decline injury Work. In the context of Tzu Chi Hospital with system Work rotating and team multidisciplinary, implications practically is the need consistency supervisor behaviour across units and shifts through standardization communication safety daily, strengthening authority stop work No safe, and supervision dialogue and feedback based come back fast. With Thus, strengthening Safety Leadership at the top level direct become lever strategic for maintain low accident Work at a time pressing risk incident repeating.

The Influence of Safety Climate on Workplace Accidents

The results of the hypothesis testing indicate that Safety Climate has a negative effect on Workplace Accidents, so that the better the safety climate perceived by workers, the lower the likelihood of work-related injuries. The structural model has met the feasibility criteria, so this relationship can be interpreted validly. Descriptively, Safety Climate is in the moderate category, which means there is still room for improvement to further reduce workplace accidents. The main strengths are in resource support and safe work readiness, particularly the adequacy of personnel and the suitability of equipment, while weaknesses arise in the safety priority dimension of direct superiors, especially related to tolerance for shortcut practices that violate procedures.



Theoretically, safety climate reflects employees' shared perceptions of the extent to which safety is truly prioritized in everyday organizational decisions and practices. A strong climate serves as an operational signal that shapes safe work attitudes and behaviours through increased safety compliance and participation. This framework aligns with the safety performance model, which positions safety climate as a link between organizational policies and workplace accident outcomes. When employees receive a consistent message that safety is more important than speed or production targets, they are more likely to avoid risky behaviours and comply with work procedures.

These findings are supported by previous research showing that a weak safety climate is associated with an increased risk of accidents, particularly when management inconsistently enforces safety rules under operational pressure. In the context of Tzu Chi Hospital, the practical implication is to strengthen the role of the immediate supervisor as the primary signaller of safety priorities by aligning work targets with safety rules, consistently monitoring behaviour, and fairly taking action against procedural deviations. Furthermore, strengthening a culture of psychologically safe hazard reporting and oriented toward system improvement is crucial to ensure that the safety climate does not remain merely a perception but actually impacts workplace accident reduction.

The Influence of Safety Self-Efficacy on Workplace Accidents

The results of the SEM-AMOS test indicate that Safety Self-Efficacy has a negative and significant effect on Workplace Accidents. This means that the stronger the worker's confidence in their ability to carry out procedures and control risks, the lower the chance of an injury incident occurring. Descriptively, safety self-efficacy is in the moderate category, with the main strength being the efficacy of using personal protective equipment, specifically the confidence to select and use PPE according to the job risks. Conversely, the weakest point is in self-management efficacy under pressure, namely the courage to refuse or stop work when safety requirements have not been met.

Theoretically, these findings align with Social Cognitive Theory, which states that self-efficacy beliefs influence behavioural choices, persistence in following procedures, and self-regulation under stressful conditions (Bandura, 1986, 1997). Within the framework of occupational safety, self-efficacy serves as a psychological basis for executing protective actions and reducing active failures that trigger accidents (Reason, 1997). The safety performance model also positions psychological and behavioural factors as key pathways to incident reduction, as



safe behaviour reduces the likelihood of exposure to hazards (Griffin & Neal, 2000).

These findings are supported by previous research showing that self-efficacy increases adherence to safe work practices, particularly in stressful work situations (Hu et al., 2022; Liu et al., 2025). In the context of Tzu Chi Hospital Jakarta, the practical implication is to strengthen the ability to make safe decisions during high workloads through brief safety briefings, scenario-based training on "stop work," clear hazard escalation paths, and supervisor support that emphasizes that stopping work in unsafe conditions is a professional action. Strengthening near-miss reporting and post-incident feedback is also necessary to ensure that high self-efficacy is truly converted into consistent safe behaviour and impact the reduction of workplace accidents.

The Influence of Safety Compliance on Workplace Accidents

The results of the hypothesis testing indicate that Safety Compliance has a negative and significant effect on Workplace Accidents. This means that the higher the workforce's compliance with safe work rules and practices, the lower the likelihood of work-related injuries. Descriptively, safety compliance is in the moderate category, while workplace accidents are in the low category. The strongest compliance is the use of personal protective equipment, particularly the consistency of wearing PPE before undertaking risky work. Conversely, the weakest point is compliance with the sequential implementation of SOP stages without skipping steps, indicating a continued tendency to choose the quick way when under work pressure.

Theoretically, these findings align with the safety performance framework, which positions safety compliance as a core behaviour in maintaining workplace safety through adherence to procedures and the correct use of PPE (Griffin & Neal, 2000). From an organizational accident perspective, compliance serves as a behavioural barrier that prevents active errors from penetrating the system's defences (Reason, 1997). The safety systems approach also emphasizes that safe work boundaries are only effective if consistently implemented in daily practice, making compliance the most proximal prevention mechanism against accidents (Leveson, 2012).

These findings are consistent with previous research showing that good safety behaviour is associated with lower workplace accidents (Aghaei et al., 2025; Brondino et al., 2025; Omidi et al., 2023; Marcia et al., 2024). In the context of Tzu Chi Hospital Jakarta, the managerial implications include strengthening SOP discipline and suppressing shortcuts through the use of risky procedure



checklists, direct guidance from superiors in the work area, behavioural observation with rapid feedback, and controlling system factors such as time pressure and facility availability. With a system that makes compliance a work habit, rather than simply a formal obligation, the risk of injury can be further reduced.

Influence Safety Leadership to Compliance Safety

The results of SEM testing show that Safety Leadership influential positive and significant to Compliance Safety. This means that the stronger the safety leadership behaviour of superiors, the higher the workforce's compliance with safe work procedures and practices. Descriptively, Safety Leadership and Safety Compliance are both in the moderate category, indicating that leadership practices and compliant behaviour are in place, but not yet stable across all work situations. The main strength of Safety Leadership lies in the superior's role model, emphasizing safety as a priority, while the main weakness lies in the consistency of daily safety communication. In Safety Compliance, the strongest aspect is the use of PPE, while the weakest aspect is the discipline of implementing SOPs sequentially without skipping steps.

Theoretically, these findings align with the concept of safety-specific transformational leadership, which emphasizes that leaders shape compliance through role models, communicating safety priorities, and supporting safe behaviours (Barling et al., 2002). Within the safety climate framework, leaders serve as primary signallers about the importance of safety through concrete decisions and actions, thereby establishing work norms that encourage compliant behaviour (Zohar, 2008; Zohar & Luria, 2005). The social exchange perspective also explains that leaders' concern for safety encourages positive responses from workers in the form of procedural compliance, even without direct supervision (Hofmann et al., 2003). Compliance itself is a core safety behaviour that is mandatory and procedural, so consistently strengthening leadership logically will increase compliance (Griffin & Neal, 2000).

These findings are consistent with previous research showing that safety leadership is associated with safety climate and behaviour, including compliance (Wu et al., 2008; Subramaniam et al., 2023; Hamdan et al., 2024). In the context of Tzu Chi Hospital, the managerial implication is to standardize safety leadership behaviour at the supervisor level, particularly through consistent daily safety communications, such as brief pre-shift and shift briefings that outline key risks, critical safety measures, and prohibit SOP shortcuts. Improvement also needs to be focused on consistently implementing SOPs through practice-based training, structured work observations, and direct feedback on the job. Strong PPE



compliance needs to be maintained through the availability of resources and fair and consistent oversight across shifts.

The Influence of Safety Climate on Safety Compliance

SEM test results indicate that Safety Climate has a positive and significant effect on Safety Compliance. This means that the stronger the shared perception that safety is a real work priority, the higher the workforce's compliance with SOPs, the use of PPE, and other safety practices. Descriptively, Safety Climate is in the fairly good category with the main strengths being resource support and safe work readiness, especially the perception that the number of personnel and the suitability of equipment support safe work. However, the weakest aspect is the priority of safety by direct superiors, specifically the consistency in rejecting shortcut practices. In Safety Compliance, the greatest strength lies in the use of PPE, while the main weakness lies in the consistency of implementing SOPs sequentially without skipping stages.

Theoretically, a safety climate reflects the extent to which an organization truly prioritizes safety over other operational demands. A strong climate establishes safe work norms, clarifies behavioural expectations, and lowers tolerance for procedural deviations, thereby increasing compliance (Griffin & Neal, 2000). Furthermore, a positive climate strengthens intentions to act safely through the formation of subjective norms and perceived behavioural control in carrying out safety procedures (Ajzen, 2005). Thus, a safety climate serves as a social mechanism that bridges organizational policies with compliant behaviour at the individual level.

These findings are consistent with previous research showing that a safety climate encourages safety compliance by strengthening psychological contracts and risk perceptions (Omidi et al., 2023), and is associated with standard precautions among healthcare workers (Johnson et al., 2024). In the context of Tzu Chi Hospital, the managerial implications include strengthening the safety priority signal by direct superiors through affirming the prohibition of SOP shortcuts, fair enforcement of rules, and reinforcement of compliant behaviour. SOP compliance also needs to be supported by simplification of critical procedures, the availability of appropriate PPE and facilities, and coaching-based supervision and regular brief feedback, so that compliance develops from a formal obligation into a safe work habit.

The Effect of Safety Self-Efficacy on Safety Compliance

The results of the direct path test indicate that Safety Self-Efficacy has a positive and significant effect on Safety Compliance ($\beta = 0.354$; CR = 8.671; $p <$



0.001). This means that the higher the worker's confidence in their ability to work safely, the higher their compliance with SOPs, PPE use, and safety regulations. Descriptively, safety self-efficacy is in the moderate category with the main strength being the efficacy of PPE use, particularly the confidence in selecting and using PPE according to job risks. However, the main weakness lies in the efficacy of self-management under pressure, particularly the courage to refuse or stop work when safety requirements have not been met. The same pattern is seen in safety compliance, which is also in the moderate category, with strengths in PPE use and weaknesses in consistently implementing SOPs sequentially without skipping steps.

Theoretically, self-efficacy is an individual's belief in their ability to perform certain actions, which influences behavioural choices, effort, and persistence in the face of obstacles (Bandura, 1986, 1997). In the context of occupational safety, self-efficacy is a proximal driver that translates safety standards into consistent compliant behaviour, especially when work is under pressure. This framework aligns with the concept of compliance as a procedural behaviour that requires self-regulation and perceived behavioural control (Ajzen, 2005), so that self-efficacy functions as a psychological prerequisite for compliance to emerge and persist in challenging work situations.

These findings are consistent with previous research that positions self-efficacy as a “can-do” factor that drives safety compliance (Hu et al., 2022), including in the healthcare context through improved infection prevention and control practices (Tangaroa’s Hansen et al., 2023; Stuart et al., 2025). In the context of Tzu Chi Hospital, the managerial implications include strengthening the efficacy of working safely under pressure through simulation-based training, affirming the right to stop work without stigma, and using standard operating procedure (SOP) checklists for high-risk procedures. These efforts need to be combined with improvements in working conditions, such as workload management and the availability of personal protective equipment (PPE), so that confidence can truly be converted into stable procedural compliance.

The Influence of Safety Leadership on Workplace Accidents through Safety Compliance (Mediation)

The results of the mediation test in the SEM model indicate that Safety Compliance mediates the relationship between Safety Leadership and Workplace Accidents, thus the mediation hypothesis is accepted. This means that safety leadership not only reduces accidents directly, but primarily works through increasing compliance with SOPs and the use of PPE. When leaders consistently set an example, emphasize safety priorities, and provide clear directions, worker



compliance increases and the likelihood of workplace accidents decreases. Descriptively, Safety Leadership and Safety Compliance are in the moderate category, with strengths in leadership role models and compliance with PPE use, and weaknesses in daily safety communication and discipline in implementing the SOP sequence, while Workplace Accidents are in the low category but still require strengthening behavioural control so that accident reductions are stable.

Theoretically, Safety Compliance serves as a behavioural pathway that bridges the influence of leadership on accident outcomes, as leadership shapes safe work norms and expectations that are then translated into work practices through procedural compliance (Hu et al., 2020). This finding aligns with previous research showing that the influence of leadership and safety climate on safety outcomes generally emerges through changes in work behaviour (Drăghici et al., 2022; Dyreborg et al., 2022; Finn et al., 2024). In the context of Tzu Chi Hospital Jakarta, managerial implications need to be directed at strengthening routine safety communication by direct superiors, consistently enforcing SOP discipline, and using checklists and observation-based coaching so that compliance becomes a work habit and accident reduction can be maintained sustainably.

The Influence of Safety Climate on Workplace Accidents through Safety Compliance (Mediation)

The results of the indirect effect test indicate that Safety Compliance mediates the relationship between Safety Climate and Workplace Accidents, thus the mediation hypothesis is accepted. This means that a stronger safety climate encourages more consistent compliance, and this compliance is the primary mechanism that reduces the incidence of workplace accidents. Descriptively, Safety Climate is in the moderate category with strengths in resource support and safe work readiness, while weaknesses lie in the consistency of superiors in prohibiting shortcut practices. In Safety Compliance, compliance with the use of PPE is the strongest aspect, while compliance with the sequential order of Standard Operating Procedures remains a weak point. The relatively low level of Workplace Accidents indicates the need to strengthen SOP discipline and supervision so that the reduction in accidents is not situational.

Theoretically, safety climate acts as an antecedent that shapes compliance through norms, motivation, and perceived behavioural control (Griffin & Neal, 2000; Ajzen, 2005), while compliance helps break the chain of unsafe acts that lead to accidents (Reason, 1997). This finding aligns with empirical evidence showing that the influence of safety climate on accident outcomes generally operates



through changes in work behaviour (Noor Arzahan et al., 2022; Omididi et al., 2023; Aghaei et al., 2025). In the context of Tzu Chi Hospital, managerial implications need to focus on strengthening the role of first-line superiors in enforcing the prohibition of shortcuts, simplifying SOPs for easy compliance, and providing monitoring and feedback based on actual work observations, so that compliance becomes a work habit and the pathway to accident reduction through compliance mediation is strengthened in practice.

The Influence of Safety Climate on Workplace Accidents through Safety Compliance (Mediation)

The results of the indirect effect test indicate that safety self-efficacy influences workplace accidents through safety compliance, thus the mediation hypothesis is supported. This relationship pattern indicates that increasing individual confidence in the ability to work safely encourages compliance with safety practices, and this compliance plays a role in reducing the incidence of workplace accidents. Descriptively, safety self-efficacy and safety compliance are in the moderate category, while workplace accidents are in the low category. The strength of self-efficacy is evident in the confidence in using PPE correctly, while its main weakness lies in the ability to manage oneself under pressure, including the assertiveness to stop work when safety requirements have not been met. In safety compliance, the strongest aspect is the use of PPE, while the weakest aspect is the consistency of carrying out the SOP sequence without skipping steps. Therefore, improvements need to be directed at strengthening work process discipline and the courage to act safely under high work pressure.

Theoretically, self-efficacy influences behavioural choices, effort levels, and persistence in the face of obstacles, thereby increasing an individual's likelihood of consistently following safety procedures (Bandura, 1997; Ajzen, 2005). Safety compliance serves as a proximal barrier that helps break the chain of unsafe acts that lead to accidents (Reason, 1997), and its effectiveness depends on the quality of actual compliance in work practices (Hu et al., 2020). These findings align with empirical evidence showing that safety behaviours act as mediators between psychological factors and accident outcomes (Hessels et al., 2023; Brondino et al., 2025). In the context of Tzu Chi Hospital, managerial implications need to focus on strengthening self-efficacy for "staying safe under pressure" through scenario simulations, observation-based coaching, and simplifying critical SOPs into concise checklists, so that self-efficacy is truly converted into operational compliance that reduces the risk of workplace accidents.

CONCLUSION



Study This prove that Safety Leadership, climate safety, self-efficacy safety and compliance safety in a way simultaneous influential negative and significant to accident work. In a way partial, Safety Leadership, climate safety, and self-efficacy safety lower accident Work Good in a way direct and no direct through improvement compliance safety. Compliance safety proven as factor the most determining proximal in pressing incident accident Work.

In addition, Safety Leadership, climate safety, and self-efficacy safety influential positive and significant to compliance safety. Compliance safety is also proven mediate in a way full connection between Safety Leadership, climate safety, and self-efficacy safety with accident work. Findings This confirm that strengthening leadership safety, climate safety and confidence individual For Work safe need directed at the formation of compliance consistent procedures to have an impact real on the decline accident Work.

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