MINH
MALAHAYATI INTERNATIONAL JOURNAL OF NURSING AND HEALTH SCIENCE
ISSN 2620-9152 (Print)
ISSN 2621-4083 (Online)
DOI: 10.33024

Nomor: 79/E/KPT/2023

ARTICLE INFORMATION
Received: January, 13, 2026
Revised: May, 8, 2026
Available online: May, 8, 2026
at : https://e-jurnal.iphorr.com/index.php/minh

Safety knowledge and safety leadership as determinants of workers' safety performance in the garment industry

Azza Mantasya, Sheena Ramadhia Asmara Dhani*

Program Studi Kesehatan Masyarakat, Universitas Muhammadiyah Surakarta
Corresponding author: *E-mail: sra776@ums.ac.id

Abstract

Background: Safety performance reflects an organization's capacity to prevent workplace accidents through adequate safety knowledge and effective safety leadership. In the labor-intensive garment industry, which is characterized by high ergonomic risks and intense production demands, empirical evidence on the combined effects of safety knowledge and safety leadership on workers' safety performance remains limited.
Purpose: To examine the influence of safety knowledge and safety leadership on workers' safety performance in the garment industry in the Solo Raya region.
Method: A quantitative observational design with a cross-sectional approach was employed. The sample consisted of 211 workers selected using a total sampling technique, the research instruments included questionnaires and observation sheets. Data was analyzed using logistic regression.
Results: Contextual knowledge (p = 0.045; Exp(B) = 0.096) and safety controlling (p = 0.042; Exp(B) = 11.334) had a significant effect on safety compliance, while task knowledge (p = 0.036; Exp(B) = 9.398) and safety caring (p = 0.039; Exp(B) = 10.289) significant effect on safety participation.
Conclusion: Strengthening workers' safety knowledge and safety leadership practices that emphasize effective supervision and genuine care can enhance safety performance by improving safety compliance and safety participation, thereby fostering a proactive and sustainable safety culture.

Keywords: Garment; Safety Knowledge; Safety Leadership; Safety Performance; Workplace Safety.

INTRODUCTION

Occupational safety and health (OSH) plays a crucial role in the manufacturing industry. Globally, the manufacturing industry accounts for about 15% of total workplace accidents worldwide (World Health Organization, 2023). In Indonesia, the manufacturing and construction sectors account for the highest number of accidents, at 63,6% (Umroh, Amiruddin, & Siregar, 2022). More than 75% of workers in the textile and garment sector experience unsafe working conditions, excessive working hours, exposure to hazardous chemicals, unfit working environments, and a lack of occupational safety and health guarantees (International Labour Organization, 2023). The garment industry is one of the manufacturing sectors with a large workforce, continuous production activities, and highly complex production processes. In the production process, productivity is supported by three main pillars, namely quantity, quality, and safety (Hazlansyah, Mulyani, & Nuh, 2018). Occupational safety is a top priority because when a work accident occurs, the losses are not only borne by the victim, but the company also loses productivity and reputation in the industry (Khasanah, Kholil, & Sugiarto, 2019). However, working conditions in the garment industry are worse than in other manufacturing sectors, characterized by high rates of workplace accidents due to a lack of safety training, the use of outdated machinery, and poor ventilation (Clean Clothes Campaign, 2022).

DOI: https://doi.org/10.33024/minh.v9i2.2277

The garment industry in Solo Raya has largely implemented occupational safety and health standards, but based on initial observations, there are still violations of safety procedures, such as inconsistent use of Personal Protective Equipment (PPE) and a lack of reporting of near miss incidents. Low compliance with OSH practices indicates inadequate safety performance, which contributes to the development of unsafe behaviors and heightens workers' propensity to neglect safety aspects in routine work activities (Vitrano & Micheli, 2024). Occupational safety in the garment industry is not only influenced by technical factors but also by the behavior and work culture of workers. Many accidents occur not because of system failures, but because of unsafe actions by the workers themselves. This is often caused by workers' lack of knowledge about the importance of occupational safety and weak supervision from management (Ulawia & Sudiarno, 2025). In the context of occupational safety and health management, one important indicator for assessing the effectiveness of occupational safety implementation is safety performance.

Safety performance refers to the actions or behaviors consistently demonstrated by workers in carrying out their tasks to enhance occupational health and safety (Huang & Yang, 2019). Safety performance is formed through two key dimensions, namely safety compliance and safety participation. Both compliance play an essential role in achieving optimal safety performance (Neal & Griffin, 2006). Safety compliance represents fundamental activities aimed at risk reduction, such as wearing appropriate PPE and adhering to established safety procedures (Rahmadhan, Ambarwati, & Nurhasanah, 2021). In contrast, safety participation involves discretionary and proactive behavior that support risk reduction and contribute to the creation of a safe working environment. When safety participation is effectively implemented, it encourages greater responsibility and leadership among employees in managing risks and promoting workplace safety. This, in turn, strengthens the positive impact of safety compliance and contributes to the reduction of occupational accidents and undesirable events (Li, Zhai, Zhang, & Meng, 2020).

Previous studies have shown that safety performance is influenced by human factors, such as safety knowledge and safety leadership. Safety knowledge plays an important role in helping workers understand potential risks in the work environment, identify hazards, and implement strategies to reduce the risk of workplace accidents. This knowledge serves to prevent workplace accidents that can endanger the welfare of workers, others, and the environment (Pereira, Delgoulet, & Santos, 2023). Safety knowledge can reduce the number of workplace accidents because workers are able to recognize and detect potential hazards, take preventive measures, reduce or eliminate the risk of accidents and determine safe work behaviors. However, knowledge alone is not enough if it is not supported by leadership that promotes a consistent safety culture (Putra, Wijayanti, & Hadiwidjojo, 2022). Safety leadership contributes to shaping workers' safety performance through direction, example, and communication provided by leaders. The interaction between leaders and workers in carrying out safety responsibilities is important (Grill & Nielsen, 2019). Leaders who are committed to safety not only enforce rules but also set a real example through safe behavior, open communication, and support for safety training. The implementation of good safety leadership will encourage the formation of safety behaviors that can reduce workplace accidents. Effective leadership has been proven to play an important role in improving safety performance among workers who have high and complex risk level (Putranti, Saputri, Aryandha, & Herdiany, 2023). In addition, improving safety knowledge and effective safety leadership can improve safety performance and reduce workplace accidents (Subramaniam, Johari, Mashi, & Mohamad, 2023).

Given the high risk of workplace accidents and unsafe work practices in the garment industry, as well as limited knowledge of safety and suboptimal safety leadership practices, the need for an effective, applicable, and sustainable approach to safety management is becoming increasingly urgent. Although the concepts of safety knowledge and safety leadership have been widely discussed in occupational safety literature, empirical evidence in the simultaneous influence of both on worker safety performance is still relatively limited, especially in the garment industry. Therefore, this study aims to analyze the influence of safety knowledge and safety leadership on the safety performance of garment industry workers in Solo Raya. The results of study

Azza Mantasya, Sheena Ramadhia Asmara Dhani*

Program Studi Kesehatan Masyarakat, Universitas Muhammadiyah Surakarta
Corresponding author: *E-mail: sra776@ums.ac.id

DOI: https://doi.org/10.33024/minh.v9i2.2277

are expected to form the basis for the development of more effective and sustainable occupational safety strategies in the garment industry.

RESEARCH METHOD

A quantitative observational design with a cross-sectional approach was employed to examine the relationship between variables without researcher intervention. Conducted over three months at three garment factories in Solo Raya, the study involved 211 workers using questionnaires to measure safety knowledge and safety leadership and observation checklists to assess safety performance. The sampling technique used was proportionate stratified random sampling, ensuring that respondents from each factory were represented proportionally based on the number of workers in each site. This technique was chosen to improve representativeness and reduce sampling bias. The inclusion criteria in this study were: (1) workers who were actively employed in the production division, (2) were willing to participate and signed informed consent, and (3) were present during the data collection period. The exclusion criteria included: (1) workers who were on leave or absent during the study, and (2) workers with incomplete questionnaire responses.

The safety knowledge instrument, adopted from Rusdiana (2017), covered task knowledge and contextual knowledge. The safety leadership questionnaire, based on Wu, Fang & Li (2015), included safety coaching, safety caring, and safety controlling dimensions. Safety performance observations, adapted from Griffin & Neal (2000), measured safety compliance and safety participation. All instruments underwent validity and reliability testing before use.

Statistical analyses included univariate analysis to describe respondent characteristics and variable distributions, bivariate analysis using the chi-square test ($p < 0.05$) to examine relationships between independent and dependent variables, and analysis multivariate using the logistic regression to assess simultaneous effects and identify the most dominant predictor of safety performance. Ethical approval was obtained from the Research Ethics Commission of the Faculty of Health Sciences, Universitas Muhammadiyah Surakarta (No.1824/KEPK-FIK/XII/2025).

RESEARCH RESULTS

Table 1. Characteristics of the Respondents (N=211)

Variable	Results
Age (Mean±SD)(Range)(Year)	(38.85±10.58)(≥17 >50)
Age (n/%)	
17 – 30	56/26.5
31 – 40	32/15.2
41 – 50	83/39.3
> 50	40/19.0
Gender (n/%)	
Male	19/9.0
Female	192/91.0
Education (n/%)	
Elementary School	25/11.8
Junior High School	88/41.7
Senior High School	93/44.1
Diploma	1/0.5
Bachelor	4/1.9

Azza Mantasya, Sheena Ramadhia Asmara Dhani*

Program Studi Kesehatan Masyarakat, Universitas Muhammadiyah Surakarta
Corresponding author: *E-mail: sra776@ums.ac.id

DOI: https://doi.org/10.33024/minh.v9i2.2277

Variable	Results
Work Experience (Year) (n/%)	
< 1	8/3.8
1 – 5	80/37.9
6 -10	40/19.0
> 10	83/39.3
Safety Knowledge (n/%)	
Task knowledge	
Moderate	86/40.8
High	125/59.2
Contextual knowledge	
Moderate	50/23.7
High	161/76.3
Safety Leadership (n/%)	
Safety coaching	
Low	4/1.9
Moderate	158/74.9
High	49/23.2
Safety caring	
Low	3/1.4
Moderate	167/79.2
High	41/19.4
Safety controlling	
Low	3/1.4
Moderate	169/80.1
High	39/18.5
Safety Performance (n/%)	
Safety compliance	
Low	7/1.9
High	204/98.1
Safety participation	
Low	8/3.8
High	203/96.2

Table 1 shows the demographic characteristics of the research respondents. Of the 211 respondents, the majority were female (91%), mean age 38.85 (SD±10.58), aged 41 -50 years (39,3%), followed by the 17 – 30 age group (26,5%). Based on education level, most respondents were high school graduates (44,1%) and junior high school graduates (41,7). The respondents' work experience showed that the majority had worked for more than 10 years (39,3%), and 1 -5 years group (37,9%), while workers with less than 1 year of work experience only accounted for (3,8%).

Most respondents demonstrated high safety knowledge, both in task knowledge (59.2%) and contextual knowledge (76.3%). Safety leadership across dimensions was generally moderate, with safety coaching (74.9%), safety caring (79.1%), and safety controlling (80.1%). In contrast, safety performance was predominantly high, as evidenced by strong safety compliance (98.1%) and safety participation (96.2%).

Azza Mantasya, Sheena Ramadhia Asmara Dhani*

Program Studi Kesehatan Masyarakat, Universitas Muhammadiyah Surakarta
Corresponding author: *E-mail: sra776@ums.ac.id

DOI: https://doi.org/10.33024/minh.v9i2.2277

Table 2. The Association Between Independent Variables and Safety Performance

Variable	Safety Compliance			Safety Participation		
	Low	High	p-value	Low	High	p-value
Safety Knowledge (n/%)						
Task knowledge						
Moderate	3/3.5	83/96.5	0.016	6/6.9	80/93.1	0.007
High	0/0.0	125/100		1/0.8	124/99.2	
Contextual knowledge						
Moderate	4/8.0	46/92.0	0.155	7/14.0	43/86.0	0.205
High	0/0.0	161/100		1/0.6	160/99.4	
Safety Leadership (n/%)						
Safety coaching						
Low	1/25.0	3/75.0		2/50.0	2/50.0	
Moderate	3/1.9	155/98.1	0.002	6/3.8	152/96.2	0.000
High	0/0.0	49/100		0/0.0	49/100	
Safety caring						
Low	1/33.3	2/66.7		1/33.3	2/66.7	
Moderate	3/1.8	164/98.2	0.018	5/3.0	162/97.0	0.001
High	0/0.0	41/00		1/2.4	40/97.6	
Safety controlling						
Low	1/33.3	2/66.7		1/33.3	2/66.7	
Moderate	2/1.2	167/98.8	0.045	4/2.4	165/97.6	0.002
High	1/2.5	38/97.5		2/5.1	37/94.9	

Tables 2 presents the bivariate analysis of associations between independent variables and safety performance dimensions using the chi-square test (p = 0,05). Regarding safety compliance, statistically significant associations were observed with task knowledge (p = 0.016) and all three safety leadership dimensions: safety coaching (p = 0.002), safety caring (p = 0.018), and safety controlling (p = 0.045). However, contextual knowledge (p = 0.155) did not demonstrate a significant association with safety compliance. For safety participation, significant associations were identified with task knowledge (p = 0.007) and all safety leadership dimensions: safety coaching (p = 0.000), safety caring (p = 0.001), and safety controlling (p = 0.002). Contextual knowledge did not show a significant association with safety participation (p = 0.205).

Table 3. Logistic Regression Analysis of Safety Performance Dimension

Variable	*Safety Compliance*				*Safety Participation*			
	p-value	*Exp(B)*	*Df*	*95% CI*	*p-value*	*Exp(B)*	*Df*	*95% CI*
Contextual Knowledge	0.048	0.960	1	0.009 – 0.982				
Safety Controlling	0.041	11.344	1	1.108 – 116.092				
Task Knowledge					0.039	9.398	1	0.013 – 0.898
Safety Caring					0.032	10.289	1	0.012 – 0.819

Table 3 presents the results of multivariate logistic regression analysis that tests the simultaneous effect of independent variables on the safety performance dimension. In safety compliance, contextual knowledge (p = 0.048; OR = 0.96; 95% CI = 0.009–0.982) and safety controlling (p = 0.041; OR = 11.344; 95% CI = 1.108–116.092) were found to have a significant effect. Safety control was the most

Azza Mantasya, Sheena Ramadhia Asmara Dhani*

Program Studi Kesehatan Masyarakat, Universitas Muhammadiyah Surakarta
Corresponding author: *E-mail: sra776@ums.ac.id

DOI: https://doi.org/10.33024/minh.v9i2.2277

dominant factor, where workers with a high level of safety control were 11.344 times more likely to demonstrate high safety compliance. Meanwhile, contextual knowledge showed an OR value below one, indicating a protective relationship or opposite direction of influence on safety compliance after controlling for other variables in the model.

In safety participation, task knowledge (p = 0.039; OR = 9.398; 95% CI = 0.013–0.898) and safety caring (p = 0.032; OR = 10.289; 95% CI = 0.012–0.819) had a significant effect. Safety caring was the most dominant factor, where workers who felt a high level of safety caring were 10.289 times more likely to actively participate in safety activities, followed by task knowledge with an OR of 9.398 after controlling for other variables.

DISCUSSION

General Overview of Safety Knowledge, Safety Leadership, and Safety Performance

Occupational Safety and Health (OSH) is an important aspect in maintaining industrial sustainability and productivity. In the labor-intensive garment industry, which has high ergonomic risks and is under pressure to meet production and time targets, the implementation of OSH often faces various challenges. Working conditions that demand speed and accuracy can cause safety aspects to become less of a priority (Suparwo, Suhendi, & Shobary, 2019). Therefore, the success of OSH implementation depends not only on formal policies but also on individual behavior and organizational culture, which are shaped by leadership roles and workers' level of knowledge about safety (Anas, Maharaja, & Yana, 2024). Safety knowledge is the basis for creating safe work behavior. The results of the study show that workers have a high level of safety knowledge in both task knowledge and contextual knowledge. This indicates that workers understand both the procedures and the context of occupational safety implementation in the work environment so that workers can carry out their work safely and in accordance with safety standards. Workers with a good level of safety knowledge tend to carry out safe work behaviors in accordance with procedures (Rahmadhan et al., 2021).

In terms of safety leadership, all dimensions are still in the moderate category, indicating that the role of leaders in fostering, supervising, and strengthening safety practices still needs to be improved. Studies show that effective leadership practices, namely through worker involvement, the formation of a safety culture, and empowerment to stop risk work, can help reduce the number of workplace accidents (Sadiq, 2020).

Meanwhile, safety performance shows positive results. The dimensions of safety compliance and safety participation are in the high category. This shows that workers not only comply with safety procedures but also actively participate in creating a safe work environment. Research shows that safety performance is an important indicator in OSH management practices, which shows that workers carry out their work safely and in accordance with safety standards (Al Fashshi & Dudija, 2025). Workers who understand safety procedures and context tend to behave more safely, while leaders who are able to guide, supervise, and foster a culture of safety can strengthen worker compliance and participation in creating a safe work environment (Zgair, Makhbul, Abdullah, & Omar, 2023).

The Relationship between Safety Knowledge and Safety Leadership on safety Performance

In this study, bivariate analysis results were obtained regarding safety knowledge and safety leadership in relation to safety performance. In the dimension of safety knowledge, it was found that task knowledge has a significant relationship with safety performance. This shows that the better workers' knowledge of work procedures, the use of PPE, and how to handle risks in the workplace, the higher the level of worker compliance and participation in safety programs. Task knowledge refers to workers understanding of the facts, principles, and procedures directly related to technical work activities, including how to process information and make decisions (Rusdiana, 2017). This knowledge serves as an effort to prevent accidents that could potentially pose risks to workers, colleagues, and the work environment, thereby contributing to maintaining overall occupational health and safety (Pereira et al., 2023). Safety knowledge is positively related to safety performance (Vinodkumar & Bhasi, 2010). Safety knowledge and skills are necessary to ensure safety and health, thereby helping to reduce accidents and the potential for workplace accidents (Omidi, Karimi, Pilbeam, Mousavi, & Moradi, 2023).

Azza Mantasya, Sheena Ramadhia Asmara Dhani*

Program Studi Kesehatan Masyarakat, Universitas Muhammadiyah Surakarta
Corresponding author: *E-mail: sra776@ums.ac.id

DOI: https://doi.org/10.33024/minh.v9i2.2277

The contextual knowledge dimension did not exhibit a significant association with safety performance, possibly due to its application within daily work activities. Contextual knowledge encompasses situational and environmental information surrounding safety incidents—such as timing, worker characteristics, machine conditions, and organizational factors—that inform risk interpretation and safety-related decision-making (De Oliveira, Sanin, & Szczerbicki, 2018). Enhancing safety knowledge can be achieved through company-led OSH socialization programs and workers' internal motivation to prioritize occupational safety and health (Aziz, Susanto, & Anggraeni, 2021). However, knowledge alone does not consistently translate into safe behavior without reinforcement from organizational culture, management commitment, and safety leadership. High safety knowledge, therefore, does not guarantee optimal performance in the absence of organizational support (Sridadi, Himmawan, Ninglasari, & Fiqqih, 2024). When workers recognize how their actions affect both personal and collective safety, compliance and participation tend to increase, and risk behaviors decline (Vinodkumar & Bhasi, 2010). Nonetheless, this study underscores that safety knowledge by itself is insufficient to ensure consistent safe practices without effective leadership backing.

Safety leadership in this study consists of three main dimensions, namely safety coaching, safety caring, and safety controlling. These three dimensions have been proven to be significantly related to safety compliance and safety participation. This shows that a good leadership style in the context of safety plays an important role in improving workers' safety performance. Leadership among workers is very important in creating a culture that supports the improvement of safety and occupational health performance in an organization (Hedaputri, Indradi, & Illahika, 2021). The relationship between safety coaching and safety performance illustrates that leaders who implement coaching effectively are able to guide and motivate workers to adopt safe work behaviors, making management coaching a key factor in supporting improvements in worker safety performance (Hermawan, Setyawan, & Sudhartio, 2024). In addition, the dimension of safety caring also shows a significant relationship with safety performance. Leaders who show empathy and concern for the working conditions of their subordinates encourage workers to feel valued so that they are more motivated to behave safely. Transformational leadership, characterized by concern and inspiration, increases worker safety participation and commitment to safety (Clarke, 2013). Meanwhile, safety control also has a significant relationship with safety performance. Safety control refers to the implementation of various safety measures and procedures aimed at preventing accidents and injuries in the workplace. Safety control measures, such as safety training and equipment maintenance, are positively related to safety performance in the manufacturing industry (Xu, Cheung, Manu, Ejohwomu, & Too, 2023).

Influence of Safety Knowledge and Safety Leadership on Safety Performance

The results of multivariate analysis show that contextual knowledge and safety controlling variables have a significant effect on safety compliance, while task knowledge and safety caring have a significant effect on safety participation. These results indicate that increasing safety knowledge and effective safety leadership contribute significantly to improving worker safety performance. In other words, a combination of understanding occupational safety and behavioral encouragement from leaders shapes worker safety performance. These results are in line with recent research showing that safety leadership and safety climate have direct and indirect effects on safety participation through the mediation of safety knowledge (Bauzir & Agustina, 2024). Another study also found that safety knowledge plays an important role in improving safety compliance and safety motivation, which together strengthen workers' safety behavior (Pratiwi, Ro'is, & Wahyudiono, 2024).

The significant influence of contextual knowledge on safety compliance shows that workers' understanding of safety policies, work procedures, and organizational culture can encourage compliance with safety standards. However, the relatively small Exp(B) value indicates that contextual knowledge alone is not sufficient to ensure compliance, especially if it is not accompanied by direct application in work activities. This condition illustrates that workers may understand safety rules and policies, but their practical application depends on the extent to which the organization creates an environment that

Azza Mantasya, Sheena Ramadhia Asmara Dhani*

Program Studi Kesehatan Masyarakat, Universitas Muhammadiyah Surakarta
Corresponding author: *E-mail: sra776@ums.ac.id

DOI: https://doi.org/10.33024/minh.v9i2.2277

supports safe behavior. This finding is in line with the results of a study which states that safety knowledge has a significant effect on risk perception and safe behavior, but its effect will be optimal if supported by a strong organizational culture and consistent safety communication (Putranti et al., 2023).

Safety control has been proven to have a positive and significant effect on safety compliance. These results confirm that supervision, assertiveness, and consistency of leaders in enforcing safety rules play an important role in improving worker compliance with safety procedures. Workers who feel that their leaders are controlling and paying attention to them will be more disciplined and careful in carrying out their work. This finding is in line with prior research stating that visible safety leadership has a strong influence on increasing worker compliance because it can strengthen a culture of safety discipline (Sugiarto, Syahyunan, & Azhmy, 2025). Effective supervision from leaders improves work morale and reduces safety violations (Slil, Iyiola, Alzubi, & Aljuhmani, 2025).

Furthermore, the significant influence of task knowledge on safety participation illustrates that workers with a good technical and procedural understanding of safety tend to be more active in participating in safety activities, such as hazard reporting, safety discussions, and safe work training. Good knowledge not only improves workers' ability to protect themselves but also encourages them to contribute to the safety of their colleagues and the environment. Increasing safety knowledge plays an important role in shaping safety behavior through increased risk awareness and intrinsic motivation of workers (Mujahid, Faridli, & Darmawan 2024). Thus, investment in technical training and safety education can increase workers' active involvement in maintaining a culture of safety. In addition, safety caring also has a significant influence on safety participation. This shows that the attention, empathy, and concern of leaders for the welfare and safety of workers play a major role in increasing worker involvement in safety activities. Caring leaders create a sense of psychological security and strengthen emotional bonds with workers, which ultimately encourages them to participate more actively in the implementation of safety programs. These results are in line with a research stating that a transformational leadership style that emphasizes attention and support for subordinates has a strong positive influence on safety participation, particularly through improved communication and mutual trust between leaders and workers (Li et al., 2020).

Overall, the results of this study indicate that safety performance is the result of interaction between individual factors and leadership factors. Safety knowledge increases workers' cognitive readiness and awareness of risks, while safety leadership strengthens behavioral aspects through supervision, role modeling, and emotional support. These two aspects form a complementary system in building a strong safety culture. Safety leadership can strengthen the influence of safety knowledge through increased consistency in safe behavior and positive perceptions of the safety climate (Elosta & Alzubi, 2024). Therefore, efforts to improve workplace safety should not only focus on increasing workers' technical knowledge but also on developing leadership that can foster awareness, effective supervision, and a shared commitment to safety in the workplace.

CONCLUSION

Safety knowledge and leadership exert distinct influences on workers' safety performance. Contextual knowledge and safety control were significant predictors of safety compliance, whereas task knowledge and safety care strongly affected safety participation. Safety control demonstrated the greatest impact on compliance, while safety care played the dominant role in enhancing participation. These findings highlight that different dimensions of knowledge and leadership contribute uniquely to safety performance among garment workers in the Solo Raya region.

ACKNOWLEDGEMENT

The author would like to express sincere gratitude to Universitas Muhammadiyah Surakarta and the Public Health Study Program for their academic support, guidance, and facilities provided throughout the implementation of this research. Special thanks are also extended to the academic supervisor for valuable advice, constructive feedback, and continuous assistance during the preparation of this study. The author also wishes to thank the management and all employees of the company where the research was conducted for their cooperation and willingness to provide the necessary

Azza Mantasya, Sheena Ramadhia Asmara Dhani*

Program Studi Kesehatan Masyarakat, Universitas Muhammadiyah Surakarta
Corresponding author: *E-mail: sra776@ums.ac.id

DOI: https://doi.org/10.33024/minh.v9i2.2277

data. Finally, the author deeply appreciates the encouragement, suggestions, and assistance from colleagues who have provided motivation and support throughout the research process.

REFERENCES

Al Fashshi, W., & Dudija, N. (2025). The Effect of Safety Culture on Safety Performance through Mediation of Psychosocial Hazards at PT. XYZ. *International Journal of Business and Applied Economics*, *4*(4), 1723–1742. Retrieved from: https://nblformosapublisher.org/index.php/ijbae/article/view/192

Anas, M., Maharja, R., & Yana, E. R. (2024). Penilaian Budaya Keselamatan dengan Metode Safety Culture Assessment (SCA) di Perusahaan Pertambangan Nikel. *Jurnal Penelitian Kesehatan "Suara Forikes"*, *15*(2), 251-254.

Aziz, A., Susanto, S., & Anggraeni, R. D. (2021). The Implementation of Occupational Safety and Health Law Enforcement in According to Law Number 1 of 1970 Concerning Work Safety and Act Number 36 of 2009 Concerning Health (Study at PT. Yamaha Indonesia). *Surya Kencana Tiga*, *1*(1), 46-64.

Bauzir, A. M., & Agustina, T. S. (2024). Safety participation on industrial company: Emphasize safety leadership and safety climate with safety knowledge as mediation. *Revista de Gestao Social e Ambiental*, *18*(3), e6785.

Clarke, S. (2013). Safety leadership: A meta-analytic review of transformational and transactional leadership styles as antecedents of safety behaviours. *Journal of occupational and organizational psychology*, *86*(1), 22-49.

Clean Clothes Campaign. (2022). Unsafe working conditions in the global fast fashion industry: A review of occupational hazards and labor rights violations. Retrieved from https://cleanclothes.org/news/2022?page=1

de Oliveira, C. S., Sanin, C., & Szczerbicki, E. (2018). Contextual knowledge to enhance workplace hazard recognition and interpretation in a cognitive vision platform. *Procedia Computer Science*, *126*, 1837-1846.

Elosta, M., & Alzubi, A. (2024). The interplay between safety leadership and construction workers' safety behavior: Do perceived employer safety obligations matter?. *Buildings*, *14*(11), 3650.

Griffin, M. A., & Neal, A. (2000). Perceptions of safety at work: a framework for linking safety climate to safety performance, knowledge, and motivation. Journal of occupational health psychology, 5(3), 347.

Grill, M., & Nielsen, K. (2019). Promoting and impeding safety–A qualitative study into direct and indirect safety leadership practices of constructions site managers. Safety science, 114, 148-159.

Hazlansyah, M., Mulyani, E., & Nuh, S. M. (2018). Analisis Evaluasi Keselamatan Dan Kesehatan Kerja (K3) Terhadap Kinerja Pekerja Konstruksi (Studi Kasus Proyek 7 in 1 Universitas Tanjungpura). *JeLAST: Jurnal Teknik Kelautan, PWK, Sipil, dan Tambang*, *5*(3).

Hedaputri, D. S., Indradi, R., & Illahika, A. P. (2021). Kajian literatur: hubungan tingkat pengetahuan kesehatan dan keselamatan kerja (k3) dengan kejadian kecelakaan kerja. *CoMPHI Journal: Community Medicine and Public Health of Indonesia Journal*, *1*(3), 185-193.

Hermawan, F., Setyawan, A., & Sudhartio, L. (2024). The role of safety leadership in the influence of safety coaching and safety engagement on safety performance. *Ganaya Jurnal Ilmu Sosial dan Humaniora*, *7*(2), 377-385.

Huang, Y. H., & Yang, T. R. (2019). Exploring on-site safety knowledge transfer in the construction industry. *Sustainability*, *11*(22), 6426.

Azza Mantasya, Sheena Ramadhia Asmara Dhani*

Program Studi Kesehatan Masyarakat, Universitas Muhammadiyah Surakarta
Corresponding author: *E-mail: sra776@ums.ac.id

DOI: https://doi.org/10.33024/minh.v9i2.2277

International Labour Organization. (2023). World employment and social outlook: Trends 2023. Retrieved from: https://researchrepository.ilo.org/esploro/outputs/report/World-employment-and-social-outlook-Trends/995238193202676

Khasanah, N., Kholil, K., & Sugiarto, S. (2019). Analysis the effect of leadership to safety climate, safety culture and safety performance. *Asian Journal of Advanced Research and Reports*, *4*(2), 1-12.

Li, M., Zhai, H., Zhang, J., & Meng, X. (2020). Research on the relationship between safety leadership, safety attitude and safety citizenship behavior of railway employees. *International journal of environmental research and public health*, *17*(6), 1864.

Mujahid, I., Faridli, E. M., & Darmawan, A. (2024). Emphasizes the Importance of Safety Behavior by Optimizing Safety Leadership and Safety Knowledge through a Safety Climate. *Revista De Gestão Social E Ambiental - RGSA*, *18*(1), e06510. Retrieved from: https://rgsa.openaccesspublications.org/rgsa/article/view/6510

Neal, A., & Griffin, M. A. (2006). A study of the lagged relationships among safety climate, safety motivation, safety behavior, and accidents at the individual and group levels. *Journal of Applied Psychology*, *91*(4), 946–953. Retrieved from: https://psycnet.apa.org/doiLanding?doi=10.1037%2F0021-9010.91.4.946

Omidi, L., Karimi, H., Pilbeam, C., Mousavi, S., & Moradi, G. (2023). Exploring the relationships among safety leadership, safety climate, psychological contract of safety, risk perception, safety compliance, and safety outcomes. *Frontiers in public health*, *11*, 1235214.

Pereira, C., Delgoulet, C., & Santos, M. (2023). Fostering workplace safety: An exploration of the priority given to safety knowledge transmission in occupational environments. *Safety science*, *168*, 106316.

Pratiwi, D. E., Ro'is, R. R., & Wahyudiono, Y. D. A. (2024). The Relationship between Safety Knowledge and Safety Motivation with Safety Performance among Constructions Workers of PT. X in Bandung Regency. *Medical Technology and Public Health Journal*, *8*(1), 46-54.

Putra, P. S., Wijayanti, R., & Hadiwidjojo, D. (2022). The effect of safety knowledge and workplace safety climate on safety performance with safety behavior as a mediator: A study on operations worker of Pindad. *International Journal of Research in Business and Social Science*, *11*(3), 112-119.

Putranti, L., Saputri, A. Y., Aryandha, P. N., & Herdiany, H. D. (2023). Manufacturing companies' risk perception based on the influence of safety leadership, safety knowledge, and safety attitudes. *Journal of Business and Information Systems (e-ISSN: 2685-2543)*, *5*(2), 275-291.

Rahmadhan, B. A., Ambarwati, T., & Nurhasanah, S. (2021). The Effect of Work Safety Climate and Safety Knowledge on Safety Behavior in Production Employees of PT. Sumber Abadi Bersama. *Jurnal Manajemen Bisnis dan Kewirausahaan*, *1*(02), 81-87.

Rusdiana, F. K. (2017). *Pengaruh Safety Leadership dan Safety Climate Terhadap Safety Performance Karyawan dengan Safety Knowledge Sebagai Variabel Intervening* (Doctoral dissertation, Universitas Airlangga).

Sadiq, A. W. (2020). *Influence of leadership practices on organizational safety performance* (Doctoral dissertation, University of Phoenix).

Slil, E., Iyiola, K., Alzubi, A., & Aljuhmani, H. Y. (2025). Impact of safety leadership and employee morale on safety performance: the moderating role of harmonious safety passion. *Buildings*, *15*(2), 186.

Sridadi, A. R., Himmawan, M. F., Ninglasari, S. Y., & Fiqqih, M. N. (2024). The mediating role of workplace safety climate on safety leadership and safety knowledge in Indonesian petrochemical employees. *The Journal of Behavioral Science*, *19*(2), 75-88.

Azza Mantasya, Sheena Ramadhia Asmara Dhani*

Program Studi Kesehatan Masyarakat, Universitas Muhammadiyah Surakarta
Corresponding author: *E-mail: sra776@ums.ac.id

DOI: https://doi.org/10.33024/minh.v9i2.2277

Subramaniam, C., Johari, J., Mashi, M. S., & Mohamad, R. (2023). The influence of safety leadership on nurses' safety behavior: The mediating role of safety knowledge and motivation. *Journal of safety research*, *84*, 117-128.

Sugiarto, S., Syahyunan, S., & Azhmy, M. F. (2025). Analysis of The Influence of Visible Safety Leadership and Job Satisfaction on Safety Work Performance at PT. Solusi Bangun Indonesia Tbk Pabrik Cilacap. *JMET: Journal of Management Entrepreneurship and Tourism*, *3*(1), 45-60.

Suparwo, A., Suhendi, H., & Shobary, M. N. (2019). Pengelolaan manajemen keselamatan dan kesehatan kerja pada UMKM Bandung Indo Garmen. *Jurnal Khatulistiwa Informatika*, *2*(1), 10-20.

Ulawia, M. H., & Sudiarno, A. (2024). The Influence Of Safety Leadership And Safety Knowledge On Safety Attitude And Safety Citizenship Behaviour:(Case Study: Indonesian Railway (Persero)). *Jurnal Teknologi dan Manajemen Industri Terapan*, *3*(3), 777-788.

Umroh, B., Amiruddin, A., & Siregar, A. M. (2022). Implementasi Keselamatan dan Kesehatan Kerja (K3) Pada Aktivitas Fabrikasi (Pengelasan, Pemotongan, Penggerindaan) di Kota Medan. *Jurnal Rekayasa Material, Manufaktur dan Energi*, *5*(2), 175-185.

Vinodkumar, M. N., & Bhasi, M. (2010). Safety management practices and safety behaviour: Assessing the mediating role of safety knowledge and motivation. *Accident Analysis & Prevention*, *42*(6), 2082-2093.

Vitrano, G., & Micheli, G. J. (2024). Effectiveness of Occupational Safety and Health interventions: a long way to go. *Frontiers in Public Health*, *12*, 1292692.

World Health Organization. (2023). Occupational health. Retrieved from: https://www.who.int/health-topics/occupational-health

Wu, C., Fang, D., & Li, N. (2015). Roles of owners' leadership in construction safety: The case of high-speed railway construction projects in China. *International Journal of Project Management*, *33*(8), 1665-1679.

Xu, J., Cheung, C., Manu, P., Ejohwomu, O., & Too, J. (2023). Implementing safety leading indicators in construction: Toward a proactive approach to safety management. *Safety science*, *157*, 105929.

Zgair, L. A., Makhbul, Z. K. M., Abdullah, N. A., & Omar, A. R. C. (2023). Occupational safety practices and ndividual and organizational outcome: A systematic literature review. *Jurnal Pengurusan*, *67*(1), 1-14.

Azza Mantasya, Sheena Ramadhia Asmara Dhani*

Program Studi Kesehatan Masyarakat, Universitas Muhammadiyah Surakarta
Corresponding author: *E-mail: sra776@ums.ac.id

DOI: https://doi.org/10.33024/minh.v9i2.2277