

The Relationship Between Workplace Demands and Occupational Safety Behavior Among Clean-Area Production Employees in Poultry Processing Companies

Mohammad Amiril Fatah¹, Husaini¹, Silvia Kristanti Tri Febriana¹, Muhammad Abdan Shadiqi¹, Nopi Stiyati Prihatini¹

¹Universitas Lambung Mangkurat, Banjarbaru, Indonesia

Email: mohammadamirilfatah@gmail.com

Abstract. *The clean-area section of the poultry processing industry is characterized by stringent hygiene standards, a fast-paced work environment, repetitive tasks, and exposure to cold temperatures (12–15°C). Consequently, workplace demands are relevant to employees occupational safety behavior. This study aimed to examine the relationship between workplace demands and four dimensions of occupational safety behavior: safety compliance, safety participation, safety initiatives, and safety awareness among clean-area production employees in poultry processing companies. An analytical observational design with a cross-sectional approach was employed. The study population comprised all clean-area production employees across three poultry processing company units in Indonesia, located in Deli Serdang, Sidoarjo, and Maros. Using total sampling, 349 respondents were included in the study. Data were collected using the COPSQ II questionnaire to assess workplace demands and the Occupational Safety Behavior Scale adapted from Supardi (2021). Data were analyzed using Spearman's rho correlation and Partial Least Squares Structural Equation Modeling (PLS-SEM). Spearman's rho analysis revealed significant positive relationships between workplace demands and safety compliance ($r_s = 0.240$; $p = 0.000$), safety participation ($r_s = 0.458$; $p = 0.000$), safety initiatives ($r_s = 0.197$; $p = 0.000$), and safety awareness ($r_s = 0.400$; $p = 0.000$). The PLS-SEM model demonstrated variations in the strength of these relationships, with safety participation emerging as the most strongly associated dimension ($\beta = 0.496$; $t = 12.898$), followed by safety awareness ($\beta = 0.403$; $t = 9.735$), safety compliance ($\beta = 0.252$; $t = 5.195$), and safety initiatives ($\beta = 0.179$; $t = 3.696$). These findings indicate that workplace demands are significantly associated with all dimensions of occupational safety behavior, with the strongest relationship observed for safety participation. Company management should therefore implement workload-management measures, including micro-breaks, while strengthening a collective culture of employee participation in occupational safety and health initiatives.*

Keywords: Clean Area, Occupational Safety Behavior, Poultry Processing, Safety Awareness, Safety Compliance, Safety Initiatives, Safety Participation, Workplace Demands

Received: July 17, 2026

Received in Revised: August 27, 2026

Accepted: September 28, 2026

INTRODUCTION

The poultry processing industry is part of the food agroindustry sector that plays a vital role in the animal protein supply chain, particularly for chicken meat (Nkukwana, 2018; Kleyn & Ciacciariello, 2021). The production process includes slaughtering, plucking, evisceration,

cutting, and cooling and freezing of products, all of which must meet strict food safety and hygiene standards, in addition to demands for high productivity, time efficiency, and product quality consistency, which create a fast-paced work rhythm and high work pressure for workers (Cornelissen et al., 2017; Mohammadfam et al., 2022).

The *clean area* section in the poultry processing industry has distinctive working conditions: production room temperatures are maintained at 12–15°C, storage room temperatures at $\leq 4^{\circ}\text{C}$, and frozen products at $\leq -18^{\circ}\text{C}$. These conditions are accompanied by controlled lighting, a one-way workflow, and strict personal hygiene protocols to prevent cross-contamination. Work in this section is also repetitive, physically demanding, and high-risk; more than half of clean area workers are reported to be susceptible to repetitive strain injuries in the hands, wrists, and elbows, in addition to the risk of musculoskeletal disorders resulting from repetitive movements, awkward postures, excessive exertion, and exposure to cold temperatures (de-Quadros & Oliveira, 2023). These conditions require the implementation of an occupational safety and health (OSH) system that not only focuses on physical and sanitation aspects but also comprehensively considers ergonomic and psychosocial factors (Chan et al., 2021; Spescha et al., 2006).

Workplace accident data for the “clean area” section at a *poultry processing* company in 2024 showed significant variation across units: Deli Serdang recorded the highest number (73 cases), followed by Purwakarta (26 cases) and Sidoarjo (22 cases), while Sleman (15 cases) and Maros (7 cases) had relatively lower numbers. This variation is believed to reflect differences in compliance, workload, and the effectiveness of OSH supervision and training across each unit. On the other hand, the challenges in implementing OSH in Indonesia continue to stem from low worker awareness, insufficient supervision, and a safety culture that has not yet been fully established; consequently, even though companies have provided OSH facilities and policies, their implementation in the field remains inconsistent as evidenced, for example, by the continued occurrence of workers who do not wear personal protective equipment (PPE) properly (Bakker & Demerouti, 2017; Nuruzzakiah et al., 2020).

Research on psychosocial risks in the clean area remains very limited; only a small fraction of poultry slaughterhouses explicitly identify psychosocial risks in their occupational health program documents, without explaining the sources of stress, control measures, or the potential mental health impacts (de-Quadros & Oliveira, 2023). In fact, the *Job Demand–Control* and *Job Demands–Resources* theories emphasize that psychosocial factors, including job demands, significantly associated with workers’ physical and mental well-being as well as their vigilance toward workplace hazards. Previous studies have even found a significant negative correlation between job demands and *safety compliance* ($r = -0.468$) and *safety participation* ($r = -0.414$) among construction workers, while high workloads have also been shown to reduce workers’ motivation and safety behavior (Al-Fajri & Almanshur, 2022; Rojas et al., 2010).

Based on this discussion, there is a clear gap between the high physical and psychosocial demands in the clean area and the consistency of employees’ workplace safety behaviors on the job site, while the relationship between the two has not been extensively studied empirically in the context of the poultry processing industry in Indonesia. This study aims to analyze the relationship between workplace demands and the workplace safety behavior of production employees in the clean area of a *poultry processing* company, covering four dimensions of workplace safety behavior *safety compliance*, *safety participation*, *safety initiatives*, and *safety awareness* which were developed and validated by Supardi (2021) as comprehensive dimensions for measuring workplace safety behavior in an industrial context..

METHODS

This study is an analytical observational study with a cross-sectional design. The study was conducted in the *clean area* production units of three *poultry processing* companies (PT X) in Indonesia, selected using the maximum variation sampling technique to represent variations in workplace accident rates: the Deli Serdang Unit in North Sumatra (high category), the Sidoarjo

Unit in East Java (moderate category), and the Maros Unit in South Sulawesi (low category). Workplace accident data from 2024 was used as supporting descriptive secondary data, not as a variable analyzed statistically. The study population consisted of all production employees in the clean area of the three company units, including daily workers and *outsourced employees*. The sample was selected using total sampling (saturation sampling) with the following inclusion criteria: production employees in the clean area, aged ≥ 18 years, with a minimum of 6 months of service, active status, and willing to participate as respondents; while the exclusion criteria were employees on extended leave or inactive status, as well as supervisors and department heads. Based on these criteria, 349 respondents were selected from a total population of 349 employees across the three company units (124 in Deli Serdang, 140 in Sidoarjo, and 85 in Maros).

The independent variable in this study is workplace demands, measured using *the COPSQ II (Copenhagen Psychosocial Questionnaire)* questionnaire the Indonesian-language version of the COPSQ II was used to assess workplace demands using a frequency response scale ranging from “always” to “never” The dependent variable is workplace safety behavior, measured using an adapted instrument by Supardi (2021) that covers four dimensions: *safety compliance*, *safety participation*, *safety initiatives*, and *safety awareness*, using a 5-point Likert scale ranging from “strongly agree” to “strongly disagree.” The validity of the instrument was tested using *Pearson’s product-moment* correlation (items were considered valid if $p < 0.05$), while reliability was assessed using *Cronbach’s Alpha* with a cutoff of > 0.70 (Savell et al., 2005). The questionnaires were distributed by the researchers through HSE officers at each company unit, collected, scanned, and analyzed by the researchers. Data analysis included univariate analysis (frequency distribution of respondent characteristics and descriptive statistics of research variables), bivariate analysis using *Spearman’s rho* correlation test ($\alpha = 0.05$) to test the relationship between workplace demands and each dimension of workplace safety behavior, as well as *Partial Least Squares Structural Equation Modeling* (PLS-SEM) to evaluate the measurement model (outer model) and the structural model (*inner model*) while comparing the strength of relationships among dimensions. All statistical analyses were performed using SPSS and SmartPLS software. This study obtained *ethical* approval from the Medical Research Ethics Committee of the Faculty of Medicine and Health Sciences at Lambung Mangkurat University and adhered to the principles of *informed consent*, anonymity, and confidentiality of respondent data.

RESULT AND DISCUSSION

The study involved 349 production employees working in the clean area of three poultry processing companies. Respondent characteristics based on gender, age, and length of service are presented in Table 1.

Table 1. Frequency Distribution of Respondent Characteristics (n = 349)

Characteristics	Category	Frequency (n)	Percentage (%)
Gender	Male	120	34.4
	Female	229	65.6
Age	< 20 years	9	2.6
	20–30 years	117	33.5
	31–40 years	105	30.1
	41–50 years	118	33.8
Length of Employment	1–5 years	243	69.6
	6–10 years	71	20.4
	11–15 years	30	8.6
	> 15 years	5	1.4

Source: Primary Data, 2026

The majority of respondents were female (65.6%). By age, the 41–50 age group was the most prevalent (33.8%), followed by the 20–30 age group (33.5%) and the 31–40 age group (30.1%), with a mean age of 34.92 years (SD = 9.25; range 19–50 years). Based on length of

service, the majority of respondents had been employed for 1–5 years (69.6%), with an average length of service of 4.78 years (SD = 3.92; range 1–16 years).

Descriptive Overview of Research Variables

Table 2 presents descriptive statistics for workplace demands and the four dimensions of workplace safety behavior.

Table 2. Descriptive Statistics Distribution of Research Variables

Variable	N	Mean	Median	Mode	SD	Min–Max
Workplace Demands	349	24.22	23.00	23	5.13	16–34
Safety Compliance	349	12.47	12.00	12	1.37	8–15
Safety Participation	349	9.32	9.00	9	2.48	5–15
Safety Initiatives	349	8.10	8.00	9	1.44	5–10
Safety Awareness	349	8.71	9.00	8	0.96	5–10

Source: Primary Data, 2026

Workplace demands scores show a fairly dynamic distribution (mean = 24.22; SD = 5.13), indicating variations in workload and operational pressure on employees in the production area. In the occupational safety behavior dimension, safety compliance has the highest mean relative to its scale range (mean = 12.47; SD = 1.37), indicating a level of compliance that tends to be consistent in the mid-to-high range. Conversely, *safety participation* had the largest standard deviation (SD = 2.48), indicating variation in employee engagement in group safety activities, while *safety awareness* had the smallest standard deviation (SD = 0.96), indicating a relatively uniform level of safety awareness among respondents.

The Relationship Between Workplace Demands and Dimensions of Occupational Safety Behavior

A bivariate analysis using *Spearman's rho* correlation test was conducted to examine the relationship between workplace demands and each dimension of workplace safety behavior. The results of the analysis are presented in Table 3.

Table 3. Results of Spearman's Rho Correlation Analysis between Workplace Demands and Dimensions of Workplace Safety Behavior

Dependent Variable	rs	p-value	Strength of Relationship	Description
Safety Compliance	0.240	0.000	Weak	Significant
Safety Participation	0.458	0.000	Moderate	Significant
Safety Initiatives	0.197	0.000	Very Weak	Significant
Safety Awareness	0.400	0.000	Moderate	Significant

Source: Primary Data, 2026. Independent variable: Workplace Demands (n = 349).

The analysis results indicate that workplace demands are positively and statistically significantly associated with all dimensions of workplace safety behavior (p = 0.000 across all dimensions). The strongest relationship was observed in the safety participation dimension (rs = 0.458), followed by safety awareness (rs = 0.400), safety compliance (rs = 0.240), and the weakest was safety initiatives (rs = 0.197).

PLS-SEM Structural Model

The evaluation of the outer model showed that all indicators had outer loadings > 0.70, thus confirming their validity. The evaluation of *construct reliability and validity* showed that all constructs had *Cronbach's Alpha* and *Composite Reliability* values greater than 0.70, as well as an *Average Variance Extracted* (AVE) greater than 0.50, confirming that the research instrument is reliable and has convergent validity (Workplace Demands: CR = 0.920, AVE = 0.562; *Safety Compliance*: CR = 0.857, AVE = 0.666; *Safety Participation*: CR = 0.935, AVE = 0.828; *Safety Initiatives*: CR = 0.923, AVE = 0.857; *Safety Awareness*: CR = 0.884, AVE = 0.792).

Next, the inner model was evaluated using *path coefficients* to compare the strength of the relationship between workplace demands and each dimension of workplace safety behavior simultaneously. The results of the hypothesis testing are presented in Table 4.

Table 4. Hypothesis Test Results and *Path Coefficients* (Inner Model) of PLS-SEM

Path	Original Sample (β)	T-Statistics	P-Values	Notes
Work Demands $\rightarrow$ <i>Safety Compliance</i>	0.252	5.195	0.000	Significant
Work Demands $\rightarrow$ <i>Safety Participation</i>	0.496	12.898	0.000	Significant
Work Demands $\rightarrow$ <i>Safety Initiatives</i>	0.179	3.696	0.000	Significant
Work Demands $\rightarrow$ <i>Safety Awareness</i>	0.403	9.735	0.000	Significant

Source: Primary Data, 2026. Analyzed using SmartPLS (bootstrapping, $N = 349$).

The PLS-SEM results confirm a pattern consistent with the *Spearman's rho* analysis, with all path coefficients significant ($p = 0.000$). Based on the magnitude of the path coefficients (β), the dimensions most strongly associated with workplace demands, in order, are *safety participation* ($\beta = 0.496$; $t = 12.898$), *safety awareness* ($\beta = 0.403$; $t = 9.735$), *safety compliance* ($\beta = 0.252$; $t = 5.195$), and *safety initiatives* ($\beta = 0.179$; $t = 3.696$). These findings demonstrate differences in the strength of the relationship between workplace demands and each dimension of workplace safety behavior.

Workplace Demands and *Safety Compliance*

A significant positive relationship between workplace demands and *safety compliance* ($r = 0.240$; $\beta = 0.252$) indicates that increased work demands tend to be followed by increased employee safety compliance, although the strength of the relationship is relatively weak. In the operational context of a *clean area* characterized by a fast-paced work rhythm, monotonous and repetitive tasks, exposure to cold temperatures ($12\text{--}15^{\circ}\text{C}$), and the use of sharp cutting tools high job demands appear to may be accompanied by workers to remain vigilant in adhering to standard operating procedures and using PPE as a self-protection mechanism. These conditions align with the *Job Demands-Resources* (JD-R) framework proposed by Shofura et al. (2025), which positions work demands within certain limits as “challenge stressors” that promote worker concentration and compliance. However, the weak strength of the relationship suggests a saturation point: compliance driven solely by workload is at risk of deteriorating if demands continue to rise without being balanced by adequate resources, such as rest breaks and consistent supervision (Adha et al., 2025; Sahabuddin et al., 2025; Zhu et al., 2025; Harvey, 2023). These findings are also consistent with the *Behavioral-Based Safety* perspective as well as a study in the meat processing industry by Okros & Virga (2023), which confirms that procedural compliance is strongly linked to workers’ risk perceptions regarding the physical hazards in their surroundings.

Workplace Demands and *Safety Participation*

Safety participation showed the strongest positive relationship with workplace demands ($r_s = 0.458$; $\beta = 0.496$), while also being the most dominant dimension in this study. These findings indicate that as target pressures and work pace increase, employees’ active involvement in group safety activities such as attending *safety talks*, reminding coworkers, and participating in safety inspections actually strengthens. The integrated production chain in the *clean area* requires solid teamwork, so a high workload may be related to workers to rely on active participation as a *social coping mechanism* to keep the work area conducive. These findings are consistent with the results of Haga et al. (2024), which show that in high-pressure manufacturing environments, safety participation develops as a form of collective support, as well as with Okros & Virga (2023), who concluded that workers’ prosocial engagement serves as a counterbalance to operational stress.

Workplace Demands and *Safety Initiatives*

The relationship between workplace demands and *safety initiatives*, although significant, was the weakest among the four dimensions ($r_s = 0.197$; $\beta = 0.179$). This reflects that a demanding, fast-paced, and monotonous work rhythm limits employees' ability to take proactive initiatives beyond routine tasks, as workers' energy and concentration are more focused on meeting daily production targets rather than proposing voluntary, informal safety measures. Safety initiatives that require additional cognitive *effort* are difficult to develop optimally when workers' physical and emotional resources have been absorbed by the demands of their primary tasks. These findings align with those of Li et al. (2015), who stated that work demands that act as *hindrances* can suppress the drive for *proactive safety behavior*, as well as Saputri et al. (2023), who demonstrated that in high-speed, extreme-temperature production environments, workers' independent initiatives tend to stagnate in the absence of reporting mechanisms or specific incentives from management.

Workplace Demands and *Safety Awareness*

A moderate positive relationship between workplace demands and *safety awareness* ($r_s = 0.400$; $\beta = 0.403$) indicates that the higher the job demands, the greater the workers' vigilance toward potential hazards in their surroundings. The *clean area* environment presents various potential physical hazards such as slippery floors, exposure to cold temperatures, and the use of carcass-cutting knives so that as the pace of work is associated with higher , workers intuitively heighten their situational awareness to respond quickly to hazards. This heightened vigilance is a form of psychological adaptation to the high risks associated with the operational tasks being performed, as emphasized by Pratama & Susilowati (2024), who found a strong correlation between OSH awareness and perceptions of workload in the processing industry, as well as by Naseem & King (2018), who concluded that the dynamics of work in meat and poultry slaughterhouses demand continuous high vigilance as an adaptive response to physical environmental pressures.

Differences in the Strength of Relationships Among Dimensions

The PLS-SEM analysis confirmed differences in the strength of the relationship between workplace demands and each dimension of workplace safety behavior, ranked from strongest to weakest: *safety participation*, *safety awareness*, *safety compliance*, and *safety initiatives*. This pattern suggests that the association of work demands is not uniform across all dimensions of occupational safety and health (OSH) behavior. Work demands are most strongly associated with *safety participation*, indicating that workers' primary strategy for coping with production target pressures and a cold work environment is to strengthen group participation and coordination (Seo et al., 2025). Work demands also have a relationship on safety awareness because physical hazards in the cutting area require direct personal vigilance. Conversely, the relationship with *safety compliance* is relatively weak because basic compliance (e.g., the use of PPE) is a mandatory requirement governed by formal SOPs and is not solely driven by the dynamics of work demands, whereas the relationship with *safety initiatives* is the weakest because high workloads consume workers' focus and time, leaving little energy for initiatives beyond their primary tasks. These findings align with the integrative studies by Jumentoro et al. (2019) and James et al. (2006), which concluded that the relationship of psychosocial factors in the workplace is not uniform across all dimensions of OSH behavior but is most strongly associated with the dimensions of group participation and situational vigilance compared to formal compliance or self-initiated actions.

Research Limitations

This study has several limitations. First, the measurement of primary data using a self-report questionnaire risks introducing *social desirability* bias that is, the tendency for respondents to provide answers that appear ideal regarding OSH compliance. Second, the *cross-sectional* design which measures all variables at a single point in time does not allow for causal

conclusions between exposure and effect and results in a relatively weaker relationship compared to studies with a cohort design. On the other hand, this study's strengths include a representative sample coverage achieved through total sampling (N = 349) across three companies with varying levels of workplace accidents (high, moderate, low), as well as the use of a combination of bivariate correlation analysis and structural equation modeling (PLS-SEM), which allows for the simultaneous and precise evaluation of both the outer and inner models

CONCLUSION

There is a positive and statistically significant relationship between workplace demands and all dimensions of workplace safety behavior *safety compliance*, *safety participation*, *safety initiatives*, and *safety awareness* among production employees in the clean area of a *poultry processing* company. *Safety participation* is the dimension with the strongest relationship to workplace demands, followed by *safety awareness*, *safety compliance*, and *safety initiatives*.

SUGGESTION

For poultry processing company management, it is recommended to: (1) evaluate the pace of the production line and implement a system of regular short breaks (micro-breaks) to reduce workers' physical and emotional fatigue in cold-temperature areas; (2) optimize daily safety talks and interactive OSH dialogues, and actively involve workers in periodic safety inspections and observations, given that safety participation is the most dominant factor; and (3) creating a reward system or streamlining the near-miss reporting process so that workers are encouraged to take safety initiatives independently without feeling burdened by daily production targets. Employees are encouraged to maintain a spirit of cooperation and a culture of mutual accountability in ensuring workplace safety, particularly under high-pressure work conditions. For future researchers, it is recommended to conduct longitudinal or cohort studies to strengthen the evidence of a causal relationship between job demands and workplace safety behaviors, as well as to explore other mediating or moderating variables such as organizational safety climate and social support in the workplace within the context of the poultry processing industry in Indonesia.

REFERENCES

- Adha, H. V., Yulihardi, Y., & Zora, A. (2025). Pengaruh Work Family Conflict, Keselamatan Kerja dan Beban Kerja terhadap Kepuasan Kerja Perawat Wanita Rumah Sakit Umum Daerah Dr. Adnaan WD Payakumbuh. *Performance: Journal of Management and Entrepreneurship*, 2(1), 81-100.
- Al-Fajri, M. A., & Almanshur, F. (2022). Analisis Pelaksanaan Program dan Kebijakan Keselamatan dan Kesehatan Kerja pada Departement PGA di Rumah Potong Ayam (RPA) PT Cimas Adisatwa Sidoarjo. *Jurnal Manajemen*, 12(1), 117. <https://doi.org/10.30738/jm.v12i1.3091>
- Bakker, A. B., & Demerouti, E. (2017). Job Demands–Resources Theory: Taking Stock and Looking Forward. *Journal of Occupational Health Psychology*, 22(3), 273–285. <https://doi.org/10.1037/ocp0000056>
- Chan, D. W. M., Cristofaro, M., Nassereddine, H., Yiu, N. S. N., & Sarvari, H. (2021). Perceptions of Safety Climate in Construction Projects between Workers and Managers/Supervisors in the Developing Country of Iran. *Sustainability*, 13(18), 10398. <https://doi.org/10.3390/su131810398>
- Cornelissen, P. A., Van Hoof, J. J., & De Jong, M. D. T. (2017). Determinants of Safety Outcomes and Performance: A Systematic Literature Review of Research in Four High-Risk Industries. *Journal of Safety Research*, 62, 127–141. <https://doi.org/10.1016/j.jsr.2017.06.009>
- de-Quadros, B. C., & Oliveira, P. A. B. (2023). Hazards of the job: absence of psychosocial risk in Occupational Health Medical Control Programs of slaughterhouses. *Revista Brasileira de*

- Medicina Do Trabalho*, 21(04), 01–11. <https://doi.org/10.47626/1679-4435-2023-1063>
- Haga, J., Huhtamäki, F., Sundvik, D., & Thor, T. (2024). Nothing to Fear: Strong Corporate Culture and Workplace Safety. *Review of Quantitative Finance and Accounting*, 63(2), 519–550. <https://doi.org/10.1007/s11156-024-01264-6>
- Harvey, S. D. (2023). *Qualitative case study on the relationship between workloads and the impact it has on employee job satisfaction* (Doctoral dissertation, Trident University International).
- James, C., Vincent, C., de Andrade Lima, T. I., & James, S. J. (2006). The Primary Chilling of Poultry Carcasses—A Review. *International Journal of Refrigeration*, 29(6), 847–862. <https://doi.org/10.1016/j.ijrefrig.2005.08.003>
- Jumantoro, R., Farida, U., & Santoso, A. (2019). Pengaruh Kompetensi, Motivasi Kerja, Beban Kerja, dan Pelatihan terhadap Produktivitas Kerja Sumber Daya Manusia Koperasi Serba Usaha Anak Mandiri Ponorogo. *Isoquant: Jurnal Ekonomi, Manajemen Dan Akuntansi*, 3(1), 106. <https://doi.org/10.24269/iso.v3i1.244>
- Kleyn, F. J., & Ciacchiariello, M. J. W. S. P. S. J. (2021). Future demands of the poultry industry: will we meet our commitments sustainably in developed and developing economies?. *World's Poultry Science Journal*, 77(2), 267–278. <https://doi.org/10.1080/00439339.2021.1904314>
- Li, H., Lu, M., Hsu, S.-C., Gray, M., & Huang, T. (2015). Proactive Behavior-Based Safety Management for Construction Safety Improvement. *Safety Science*, 75, 107–117. <https://doi.org/10.1016/j.ssci.2015.01.013>
- Mohammadfam, I., Mahdinia, M., Aliabadi, M. M., & Soltanian, A. R. (2022). Effect of Safety Climate on Safety Behavior and Occupational Injuries: A Systematic Review Study. *Safety Science*, 156, 105917. <https://doi.org/10.1016/j.ssci.2022.105917>
- Naseem, S., & King, A. J. (2018). Ammonia Production in Poultry Houses Can Affect Health of Humans, Birds, and The Environment—Techniques for Its Reduction During Poultry Production. *Environmental Science and Pollution Research*, 25(16), 15269–15293. <https://doi.org/10.1007/s11356-018-2018-y>
- Nkukwana, T. T. (2018). Global poultry production: Current impact and future outlook on the South African poultry industry. *South African Journal of Animal Science*, 48(SPE), 869–884. <https://doi.org/10.4314/sajas.v48i5.7>
- Nuruzzakiyah, N., Hani, E., & Hanida, H. (2020). The Correlation between Psychosocial Risk Factors and Work Performance in Manufacturing Industry. *Malaysian Journal of Public Health Medicine*, 20(Special1), 23–29. <https://doi.org/10.37268/mjphm/vol.20/no.Special1/art.664>
- Okros, N., & Virga, D. (2023). Impact of Workplace Safety on Well-Being: The Mediating Role of Thriving at Work. *Personnel Review*, 52(7), 1861–1877. <https://doi.org/10.1108/PR-10-2021-0709>
- Pratama, M. R., & Susilowati, I. H. (2024). Analisis Faktor Psikososial terhadap Kejadian Stres Kerja pada Karyawan Perusahaan Jasa Pertambangan di PT X Tahun 2024. *Media Publikasi Promosi Kesehatan Indonesia (MPPKI)*, 7(6), 1474–1487. <https://doi.org/10.56338/mppki.v7i6.5219>
- Rojas, D. M., Lozano, M. G., & Guerrero-Legarreta, I. (2010). Transportation to the Slaughterhouse. In *Handbook of Poultry Science and Technology* (pp. 55–67). Wiley. <https://doi.org/10.1002/9780470504451.ch4>
- Sahabuddin, S., Jumady, E., & Fajriah, Y. (2025). Qualitative Study on the Effect of Workload and

Motivation on Performance with Supervision and SOP as Mediator Variables. *Golden Ratio of Human Resource Management*, 5(1), 241-250. <https://doi.org/10.52970/grhrm.v5i1.863>

- Saputri, A. J., Fachrin, S. A., & Hardi, I. (2023). Pengetahuan dan Sikap K3 Meningkatkan Kedisiplinan Penggunaan APD Pekerja PT. Japfa Comfeed Tbk Makassar. *Window of Public Health Journal*, 4(5), 736–742. <https://doi.org/10.33096/woph.v4i5.1407>
- Seo, H. J., Rhee, S. Y., & Kim, N. K. (2025). A study on the factors affecting safety behaviors and safety performance in the manufacturing sector: job demands-resources approach. *Safety*, 11(2), 29. <https://doi.org/10.3390/safety11020029>
- Shofura, N. H., Sukmawan, L., & Tobing, B. L. (2025). Prevalensi dan Aspek yang Mempengaruhi Tingkat Risiko Psikososial di Industri Minyak dan Gas. *The Journal of Indonesian Industrial Hygiene Association*, 1(1), 34–41.
- Spescha, C., Stephan, R., & Zweifel, C. (2006). Microbiological Contamination of Pig Carcasses at Different Stages of Slaughter in Two European Union–Approved Abattoirs. *Journal of Food Protection*, 69(11), 2568–2575. <https://doi.org/10.4315/0362-028X-69.11.2568>
- Zhu, L., Wei, S., An, Y., Hu, W., & Xie, X. (2025). Mechanism, contributing factors, and coping strategies of alarm fatigue in intensive care nursing: a qualitative study. *Frontiers in Public Health*, 13, 1654389. <https://doi.org/10.3389/fpubh.2025.1654389>