Borobudur Engineering Review
Vol. 06 No. 01 (2027) pp. 56-66
e-ISSN: 2777-0850

Effectiveness of Ergonomics-Based Occupational Health and Safety Assistance on Work Behavior and Welfare of Small-Scale Tofu Industry Workers: A Quasi-Experimental Study

Oesman Raliby Al Manan[1*], Faisa Nisa Ulinuha[2]

[1] Industrial Engineering Study Program, University of Muhammadiyah Magelang, Indonesia

[2] Industrial Enguineering; UPN Veteran Yogyakarta, Indonesia

*email: oest72@6465957.brevosend.com

DOI: https://doi.org/10.31603/dxteyy88

Abstract

Small industries know to harbor a wide range of potential occupational hazards related to physical accidents, heat exposure, unergonomic working postures, and lack of personal protective equipment. This study aims to evaluate the effectiveness of ergonomics-based K3 mentoring programs on changes in knowledge, attitudes, and real work behavior of tofu industry workers in Yogyakarta. The research design used a quasi-experiment pre-post design with 17 respondents who were involved during two months of mentoring. The evaluation instrument includes three components: a knowledge test (true/false), a 5-point Likert scale attitude questionnaire, and a 1–4 scale behavioral observation sheet on five K3 indicators. The results showed an increase in knowledge from 76.5% to 94.1% (Δ +17.6%). The attitude score increased significantly (M pre = 18.00 vs. M post = 18.65; t(16) = −2.28, p = 0.037, Cohen's d = 0.53). The most substantial changes were found in real behavioral observations, with the average total score increasing from 8.12 to 16.35 (Δ +101.4%; t(16) = −16.11, p < 0.001, Cohen's d = 5.66). The highest increase occurred in the daily K3 communication indicator (Δ +2.18 points). These findings suggest that active participation-based mentoring and simple environmental engineering are effective in changing K3 behavior at the micro and small industry levels.

Keywords: *Ergonomics; tofu industry; K3; mentoring; work behavior; quasi-experimental*

1. Introduction

The tofu processing industry is one of the food-based micro, small and medium enterprises (MSMEs) that plays a strategic role in food security and labor absorption in Indonesia, particularly on the island of Java (BPS-Statistics, 2022; Luthfian et al., 2024). Despite its significant economic contribution, small-scale food production in developing economies is frequently characterized by sub-optimal working environments (Cagno et al., 2016; Hazemi et al., 2025). The production process in tofu MSMEs involves a series of high-risk operational stages that rarely receive systematic attention or

formal oversight from an occupational safety and health (OSH/K3) perspective (Luthfian et al., 2024; Parapat et al., 2026).

Tofu industrial workers are simultaneously exposed to a complex matrix of physical, ergonomic, and chemical hazards: extreme thermal exposure from the boiling process reaching temperatures up to 90–100°C, slippery and waterlogged floors, repetitive manual material handling without mechanical aids, continuous high-decibel noise from grinding machinery, and chemical exposure to coagulants such as nigari or acetic acid (Viatina et al., 2024; Zulfani et. Al., 2025). A study by Widiastuti et al. (2021) in the Banyumas tofu cluster revealed that 68% of workers suffered from musculoskeletal disorders (MSDs) due to unergonomic working postures and heavy physical loads. Similarly, Adriana and Suwandi (2020) as well as Daenova et al., (2026) identified burn injuries from hot slurry splashing and slip-and-fall accidents as the primary physical risks dominating this sector.

Unlike formal industry, K3 intervention in small industries cannot simply rely on regulatory and normative approaches. Financial capacity, technical literacy, and limited access to information demand a more participatory and contextual strategy (Hasle et al., 2012). Participatory ergonomics approaches—which integrate simple environmental engineering, behavior change based on local understanding, and strengthening social security—have proven to be more effective than conventional counseling (Kogi, 2006; Pehkonen et al., 2009.)

The mentoring program evaluated in this study was designed with a rural appraisal approach and gradual environmental modification in seven small-scale tofu industries (Chambers, 1994; Siregar et al., 2025). The mentoring lasted for two months with two main modules: (1) Simple Engineering Engineering and Ergonomic Behavior, and (2) Welfare Assurance and PPE Compliance (Ajzen, 2020; WHO, 2006). The purpose of this study is to evaluate the effectiveness of the mentoring on three dimensions of change: K3 knowledge, attitudes towards K3, and real work behavior changes that are measured through longitudinal observation.

2. Metode

2.1. Design and Place of Research

This study used a quasi-experimental one group pre-post test design without a control group, considering the limited number of similar tofu industries at the research site. Data collection was carried out in seven small tofu industries in Bantul Regency and Yogyakarta City, Special Region of Yogyakarta, during the period March-April 2025.

2.2. Participants

The total participants were 17 workers who met the inclusion criteria: (a) worked full-time (≥6 hours/day) in the target tofu industry, (b) were willing to participate in all mentoring sessions, and (c) did not have a physical disability that prevented participation in the training. The demographic characteristics of the participants are presented in Table 1. All participants provided informed consent before the study began.

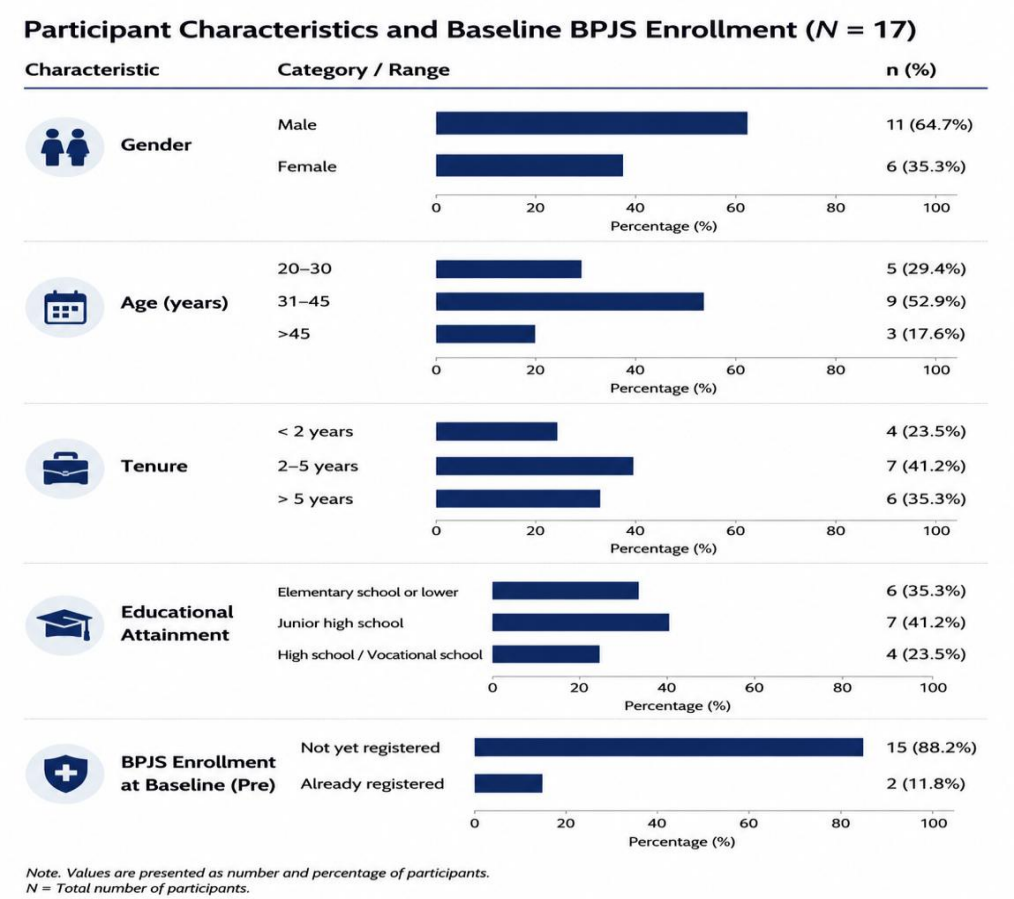

Figure 1. Sociodemographic and baseline characteristics of study participants (N = 17). Values are presented as number and percentage of participants.

2.3. Intervention Procedure

The mentoring program is carried out in two modules for eight weeks. Module 1 (weeks 1–4) includes participatory hazard mapping, ergonomic lifting technique training, floor modification simulation using simple drainage pallets/channels, and habituation of daily K3 discussions (*toolbox talk*). Module 2 (weeks 5–8) focuses on socialization of employment security (BPJS TK), collective assistance for registration, procurement of priority PPE (boots and gloves), and strengthening joint commitment through group behavior contracts.

2.4. Research Instruments

The evaluation instrument consists of three sections organized based on participatory K3 theory (Hale & Hovden, 1998) and the informal worker health behavior model (ILO, 2013):

1. Section A – Knowledge Test: 5 single-choice true/false questions, covering the dimensions of physical accidents, ergonomics, basic P3K, engineering engineering, and wellbeing. The score is expressed as a percentage of correct answers.
2. Part B – Attitude Scale: 5 persuasive statements using a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree), covering the dimensions of PPE investment, K3 mutual cooperation, fund allocation, welfare guarantees, and physical improvements.

3. Section C – Behavioral Observation Sheet: 5 indicators of real change were assessed on a scale of 1–4 through direct observation by the researcher, including floor engineering engineering, ergonomic weightlifting behavior, daily K3 communication, BPJS TK commitment, and PPE use.

The validity of the instrument's contents was consulted with two industrial K3 experts and one ergonomics expert. The reliability of the attitude scale was tested using Alpha Cronbach (pre α = 0.72; α post = 0.74), meeting the acceptable reliability threshold (Nunnally, 1978).

2.5. Data Analysis

Knowledge data is analyzed descriptively (percentage correct). Changes in total attitude scores and behavioral observations were analyzed using *a paired-sample t-test* after the Shapiro–Wilk normality test was met (p > 0.05 for all variables). The Wilcoxon test is used as a non-parametric confirmation. Large effects were calculated using Cohen's d, with interpretations: small (d = 0.2), medium (d = 0.5), large (d ≥ 0.8) (Cohen, 1988). The entire analysis was performed using Python 3.11 (SciPy v1.11). The significance level is set at α = 0.05

3. Results and Discussion

3.1 K3 Knowledge

Before the mentoring, 13 out of 17 respondents (76.5%) answered the K3 knowledge question correctly. After mentoring, this number increased to 16 from 17 (94.1%), with Δ an increase of +17.6% (+3 respondents). One respondent (R-17) answered incorrectly on both measurements, indicating individual learning barriers that require different interventions. McNemar's analysis (b = 3, c = 0) showed a consistent unidirectional change from false to true without any regression, the results are presented in Table 1.

Table 1. Comparison of pre-post-mentoring k3 knowledge test results.

Dimension of Knowledge	Pre (%True)	Post (%True)	Changes	Remarks
Physical Accident (Slippery Floor)	76,5%	94,1%	+17,6%	Increase
Weightlifting Ergonomics	76,5%	94,1%	+17,6%	Increase
Basic P3K (Burns)	76,5%	94,1%	+17,6%	Increase
Engineering Engineering (Ventilation)	76,5%	94,1%	+17,6%	Increase
Welfare (BPJS TK)	76,5%	94,1%	+17,6%	Increase
TOTAL (Average)	**76,5%**	**94,1%**	**+17,6%**	**Significant**

3.2 Attitudes Towards K3

The average total attitude score (5 items, range 5–25) increased from 18.00 (SD = 1.17) at pre-mentoring to 18.65 (SD = 1.27) at post-mentoring, with Δ = +0.65 points. The results *of the paired-samples t-test* showed a statistically significant difference ($t(16) = -2.28$, $p = 0.037$). The magnitude of the effect with Cohen's $d = 0.53$ indicates a medium *effect size*. The largest increase occurred in items S3 (Allocation of Funds for K3, Δ = +0.24) and S5 (Physical Improvement of the Workplace, Δ = +0.18). The score of the S4 item (Welfare/BPJS TK) did not change, possibly due to *the ceiling effect*—the pre-value was already high (M = 3.88). A comparison of pre- and post-mentoring attitude scores is presented in Table 2.

Table 2. Comparison of pre–post-mentoring attitude scores.

Attitude Items	M Pre (SD)	M Posta (SD)	Δ	Interpretation
S1 – PPE Investment for Production Continuity	3,35 (0,49)	3,47 (0,51)	+0,12	Quite a boost
S2 – Gotong Royong Reminds Colleagues	3,53 (0,51)	3,65 (0,49)	+0,12	Quite a boost
Q3 – Allocation of Small Funds for Security	3,29 (0,47)	3,53 (0,51)	+0,24	Increase
S4 – BPJS Kindergarten for Family Welfare	3,88 (0,33)	3,88 (0,33)	0,00	Ceiling effect
S5 – Physical Repair → Faster Work	3,94 (0,24)	4,12 (0,33)	+0,18	Increase
TOTAL SCORE	**18,00 (1,17)**	**18,65 (1,27)**	**+0,65***	**Moderate effect (d=0.53)**

Note: * p < 0.05; M = average; SD = standard deviation; Δ = post–pre average difference.

3.3 Observation of Real Work Behavior

The behavioral observation dimension demonstrated the most substantial improvement following the intervention. The average total score increased from 8.12 (SD = 1.27) before the intervention to 16.35 (SD = 1.62) after the intervention, representing an improvement of 101.4%. This notable increase indicates a meaningful change in participants' observable work behaviors after completing the intervention. Statistical analyses further supported this finding, with both the paired t-test ($t(16) = -16.11$, $p < 0.001$) and the Wilcoxon test ($W = 0$, $p = 0.0003$) showing a highly significant difference between pre- and post-intervention scores. The magnitude of this change was also exceptionally large, as reflected by a Cohen's d of 5.66. Taken together, these findings suggest that the intervention was associated not only with statistically significant improvements but also with substantial changes in behaviors observed directly in the workplace. A detailed description of the changes across individual behavioral indicators is presented in Table 3.

Table 3. Results of observation of k3 behavior by pre-post-mentoring indicators.

Observation Indicators	M Pre (SD)	M Posta (SD)	Δ	W (p)	Post Interpretation
O1 – Flooring/Drainage Engineering	1,53 (0,51)	3,06 (0,75)	+1,53	0 (0,0002)	Ducts/pallets attached; Reduced inundation
O2 – Ergonomics: Weightlifting Techniques	1,82 (0,39)	3,47 (0,51)	+1,65	0 (0,0002)	As a large worker squatting while lifting
O3 – Daily K3 Communication/Discussion	1,29 (0,47)	3,47 (0,51)	+2,18	0 (0,0002)	Regular scheduled informal talk toolbox
O4 – BPJS Kindergarten Registration Commitment	1,94 (0,24)	3,06 (0,75)	+1,12	0 (0,0003)	Collective commitment; some have already registered
O5 – PPE Compliance	1,53 (0,62)	3,29 (0,47)	+1,76	0 (0,0003)	2 PPE (boots + gloves) consistent
TOTAL SCORE	**8,12 (1,27)**	**16,35 (1,62)**	**+8,24****	**0 (0,0003)**	**Effects were very large (d = 5.66)**

Note: ** p < 0.001; M = average; SD = standard deviation; W = Wilcoxon statistics; Δ = the average difference. Scale 1–4 where 4 = optimal change.

The distribution of per-item observation scores shows an even shift to higher levels. In pre-mentoring, 100% of the O1 score was at levels 1–2 (flooded floor/minimal effort); Post-mentoring, 88.2% of the score shifted to level 3–4. The O3 indicator (K3 communication) experienced the largest increase because in the initial condition 70.6% of the industry did not have any K3 discussions at all (score 1), while post-mentoring all industries at least reached level 3 (*occasional informal* toolbox talk).The frequency distribution of observation scores per indicator (n = 17) is presented in Figure 2.

3.4 Knowledge Shifts: Cognitive Foundations That Need to Be Strengthened

The increase in knowledge from 76.5% to 94.1% (+17.6%) showed that mentoring with simple visual media, hands-on demonstrations, and contextual language was effective in transferring K3 knowledge to workers with low educational backgrounds (Vigoroso L., et al 2020). This is in line with *the principle of andragogy* (Knowles, 1980) that adults learn more effectively when the material is relevant to their direct experience, (Rahmawati, Y. I., & Hiryanto, H. 2023). The fact that one respondent (5.9%) still answered incorrectly provides an important note: a group-based learning approach needs to be balanced with individualized mentoring for workers with literacy barriers.

These findings are consistent with the study by Fitriani et al. (2022) which found an average increase in K3 knowledge of 15–20% in small industry mentoring interventions, but higher than the meta-analysis of Hämäläinen et al. (2017) which reported an average of 12.4% increase in non-interactive conventional extension programs. This difference is likely influenced by the demonstration and *hands-on practice* components in this research assistance.

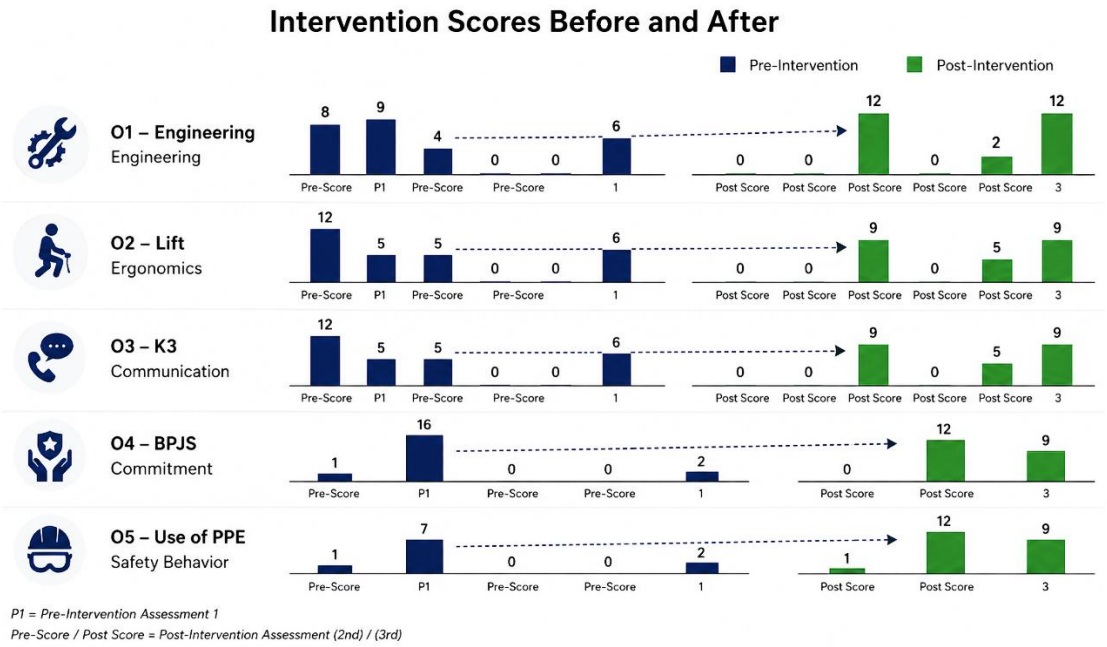

Figure 2. Frequency distribution of observation scores per indicator (n = 17).

3.5 Attitude Change: Strengthening K3 Values as Collective Gain

Significant but moderately effected changes in attitudes (d = 0.53) reflect the complexity of changing values and norms in informal working communities. Health *Belief Model Framework* (Rosenstock, 1974; Rasouli, R., 2025) predicts that the acceptance of healthy behaviors increases when individuals perceive perceived *benefits* greater than perceived barriers. Framing K3 as *an "investment so that production does not stop"*—rather than as a regulatory obligation—has proven to resonate more with the daily economic value of informal workers.

The absence of changes in the S4 item (BPJS TK) is likely due to the *ceiling effect*: the average pre-school is already high (3.88/5). This indicates that awareness of the importance of social security is cognitively prevalent, but it is hampered by complex bureaucratic perceptions—which are then addressed in Module 2 through the facilitation of collective registration (Teixeira et al, 2024).

3.6 Real Behavior Change: The Effectiveness of Participatory Environmental Engineering

The study's most significant finding was an extraordinarily large real behavioral change (Cohen's d = 5.66; Δ total +101.4%). The magnitude of this effect far exceeded the average of similar studies in Southeast Asian informal industries—the meta-analysis of Nygård et al. (2020) reported *an*

average of 1.2–2.5 for short-term K3 behavioral interventions. This difference can be explained by three key factors:

1. Very low starting point (floor effect): Pre-mentoring observation scores that are close to the minimum (8.12 out of a maximum of 20) provide a large "room for movement" for change. It also confirms the critical condition of K3 in the small-scale tofu industry.
2. Concrete and immediate environmental engineering: The installation of pallets, waterways, and procurement of PPE that are physical-real results in changes that are easy to observe and benefit immediately (immediacy of reinforcement).
3. Social dynamics: The largest increase in the O3 indicator (daily K3 communication, Δ +2.18) indicates that the identification and empowerment of 'Local Heroes' within each industry unit creates new social norms that reinforce peer-to-peer K3 behavior.

The O4 indicator (BPJS TK commitment) had the smallest increase (Δ +1.12), likely because the BPJS registration process involved external administrative procedures that could not be fully controlled within the two-month period of mentoring. This is in accordance with *the theory of Social Cognitive Theory* (Bandura, 1986)—behavioral changes that depend on external factors (bureaucratic systems) are slower than changes that are completely under the control of the individual.

3.7 Practical Implications and Limitations

In practical terms, this study shows that minimal investments—such as the procurement of used pallets (Rp 50,000–100,000/unit), rubber boots (Rp 30,000–50,000), and facilitation of K3 discussions for five minutes per shift—can result in substantial behavioral changes within two months. This finding is relevant for MSME development policies that have not optimally integrated K3 in their programs.

Several limitations need to be acknowledged: (1) The absence of a control group limits causality inference; Time and seasonal factors cannot be completely controlled. (2) Small sample size (N = 17) decreases statistical power and generalizability. (3) A two-month observation period may not be sufficient to measure the sustainability of long-term behavior change. (4) The Hawthorne effect (workers behave better knowing they are being observed) cannot be completely excluded, even if the observation is made without specific schedule notice.

4. Conclusion

Participatory ergonomics-based K3 assistance for two months was proven to be effective in improving the three dimensions of evaluation in small industrial workers: (1) K3 knowledge increased +17.6%, (2) attitudes towards K3 increased significantly ($p = 0.037$, moderate effect), and (3) real work behavior underwent a very significant transformation ($p < 0.001$, the effect is huge). Behavioral changes—particularly in the aspects of simple engineering engineering, daily K3 communication, and PPE compliance—suggest that a participatory approach with direct physical environment modification is more effective than mere informative counseling.

4.2 Suggestions

1. For Regional Governments: Integrate participatory ergonomics K3 modules into MSME development programs; subsidies for the procurement of basic PPE and facilitation of collective BPJS TK registration for small food industry workers.
2. For Next Investigators: Replication with a randomized controlled trial design, larger sample size (N ≥ 50), and a follow-up period of at least 6 months to measure the sustainability of behavior change.
3. For Industry Managers Know: Maintain the daily toolbox talk mechanism as a social investment that is proven to yield the highest safety and productivity benefits at close to zero cost.

5. Acknowledgements

The author would like to thank all tofu industry owners and workers in Tidar Campur who have participated, as well as to the field facilitator team who dedicated their time during the mentoring. This research does not receive external funding.

6. Author Contribution

Oesman contributes to the conceptualization of ideas, research methodologies, and program implementation in the field. Responsible for data analysis and visualization of results. Ulinuha prepared the initial draft of the article, while all authors contributed to the process of reviewing, editing, and refining the final manuscript of this article

7. Conflict of Interest

There was no conflict of interest during the study

References

Ajzen, I. (2020). The theory of planned behavior: Frequently asked questions. Human Behavior and Emerging Technologies, 2(4), 314–324.

Adriana, R., & Suwandi, T. (2020). Hazard identification and risk assessment in the household-scale tofu industry in Banyumas Regency. Indonesian Journal of Environmental Health, 19(2), 112–120. https://doi.org/10.14710/jkli.19.2.112-120

Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory. Prentice-Hall.

BPS-Statistics. (2022). Statistical Yearbook of Indonesia 2022 (Directorate of Statistical Dissemination, Ed.).

Cagno, E., Masi, D., & Leão, C. P. (2016). Drivers for OSH interventions in small and medium-sized enterprises. International Journal of Occupational Safety and Ergonomics, 22(1), 102–115. https://doi.org/10.1080/10803548.2015.1117351

Chambers, R. (1994). The origins and practice of participatory rural appraisal. World Development, 22(7), 953–969.

Cohen, J. (1988). Statistical power analysis for the behavioral sciences (2nd ed.). Lawrence Erlbaum Associates.

Deanova, A. H. (2026). Analisis Aspek K3 Menggunakan Metode Hazard Identification and Risk Assessment (HIRA)(Studi Kasus: Pabrik Tahu Tempe Supriadi Sepinggan, Kota Balikpapan). Jurnal Teknik Industri (JATRI), 4(1), 54-69.

Fitriani, S., Hariyono, W., & Kurniawati, S. (2022). The effectiveness of practice-based K3 training on changing the behavior of food MSME workers. Indonesian Journal of Public Health, 17(1), 45–54.

Ghutai, G., Bahari, Z., Zaman, N.-U.-, Ahmad, N. A. B., & Alam, T. (2023). IMF Loan, Economic Development of Pakistan & Islam. International Journal of Academic Research in Business and Social Sciences, 13(5). https://doi.org/10.6007/IJARBSS/v13-i5/171200

Hale, A. R., & Hovden, J. (1998). Management and culture: The third age of safety. In A. M. Feyer & A. Williamson (Eds.), Occupational injury: Risk, prevention and intervention (pp. 129–165). Taylor & Francis.

Hasle, P., Kines, P., & Andersen, L. P. (2012). Small enterprise owners' accident, causation, attribution and prevention. Safety Science, 47(1), 9–19. https://doi.org/10.1016/j.ssci.2008.01.005

Hazemi, S. A., Abdul Majid, N. D., Widia, M., & Abdul Aziz, H. (2025). OSH Management in Small and Medium Enterprises: A Bibliometric Review. Jurnal Optimasi Sistem Industri, 24(1), 121–139. https://doi.org/10.25077/josi.v24.n1.p121-139.2025

International Labour Organization (ILO). (2013). Ergonomic checkpoints: Practical and easy-to-implement solutions for improving safety, health and working conditions (2nd ed.). ILO.

Knowles, M. S. (1980). The modern practice of adult education: From pedagogy to andragogy (2nd ed.). Cambridge Adult Education.

Kogi, K. (2006). Advances in Participatory Occupational Health Aimed at Good Practices in Small Enterprises and the Informal Sector. Industrial Health, 44(1), 31–34. https://doi.org/10.2486/indhealth.44.31

Luthfian, R., Silalahi, R., & Purwaningsih, I. (2024). Ilo-patris as an alternative instrument to observe the working conditions of a small food-producing business. *In Jurnal Teknik Industri* (Vol. 19, Number 3).

Nunnally, J. C. (1978). Psychometric theory (2nd ed.). McGraw-Hill.

Nygård, C. H., Tuokko, M., & Bültmann, U. (2020). Participatory ergonomics in small enterprises: A meta-analysis of behavioral outcomes. *Ergonomics*, 63(4), 485–498. https://doi.org/10.1080/00140139.2020.1725163

Parapat, R. Y., Pramita, N. S., & Alifah, S. N. (2026). Identification And Control Of Occupational Hazards In Traditional Yellow Tofu Production Using The HIRADC Method. *Indonesian Journal of Multidisciplinary on Social and Technology*, 4(2), 954–967. https://doi.org/10.69693/ijmst.v4i2.9411

Pehkonen, I., Takala, E.-P., Ketola, R., Viikari-Juntura, E., Leino-Arjas, P., Hopsu, L., Virtanen, T., Haukka, E., Holtari-Leino, M., & Nykyri, E. (2009). Evaluation of a participatory ergonomic intervention process in kitchen work. *Applied Ergonomics*, 40(1), 115–123.

Rahmawati, Y. I., & Hiryanto, H. H. (2023). Implications of the andragogy concept in various community education settings: A literature review. *Empowerment: Scientific Journal of the Out-of-School Education Study Program*, 12(2), 85-96.

Rasouli, R., Akbarzadeh, O., Ahmadpour, R., Gilani, N., Farshad, M. S., & Alizadeh, S. S. (2025). Quality of Work Life and Ethical Behaviour Among Occupational Health *Professionals: A Social Exchange Theory Perspective*. https://doi.org/10.1177/109019817400200405

Rosenstock, I. M. (1974). The health belief model and preventive health behavior. Health Education

Monographs, 2(4), 354–386.

Siregar, K. N., Amalia, N., Apriliana, A., & Telamumbanua, E. K. (2025). Participatory Safety Improvement in Informal MSMEs: Human Factors, Environmental Risks, and WISE Intervention Outcomes in Indonesia. *Jurnal Perilaku Kesehatan Terpadu,* 4(1), 1–16.

Teixeira, L. M., Uribe, F. A. R., Moreira, H. L. F., & da Silva Pedroso, J. (2024). Associations between retirement, social security policies and the health of older people: a systematic review. *BMC Public Health*, 24(1), 2473.

Viatina, K., Tejamaya, M., & Widanarko, B. (2024). Musculoskeletal disorders risk assessment among small tofu factory workers in Tangerang city: an Indonesian case study. *The Indonesian Journal Of Public Health, 12(1).* https://doi.org/10.20473/ijph.v19i1.2024.183-195

Vigoroso, L., Caffaro, F., & Cavallo, E. (2020). Occupational safety and visual communication: User-centred design of safety training material for migrant farmworkers in Italy. *Safety science*, 121, 562-572.

WHO. (2006). Mentoring Guidelines For Mentors and Mentees in the JPOSC Career Mentoring Programme. https://www.undp.org/sites/g/files/zskgke326/files/2022-08/JPOSC_Career_Mentoring_Guide.pdf

Widiastuti, D., Nurjazuli, N., & Setiani, O. (2021). Risk factors for musculoskeletal disorders in traditional tofu industrial workers. *Journal of Public Health*, 9(3), 420–428.

Zulfani, C., & Dkk, J. (2025). Analisis Risiko Proses Operasional Industri Tahu di Candisari. In Kota Semarang. *Jurnal Riptek*, 19(2). http://riptek.semarangkota.go.idhttp://riptek.semarangkota.go.id