

Construction Safety and Health: Assessment of Occupational Health and Safety Practice of the Construction Companies in Iligan City

¹Engr. Jane K. Zaportiza

¹St. Michael's College of Iligan, Inc., Iligan City, Philippines

Received 23rd August 2025; Accepted 23rd September 2025; Published Online 4th December 2025

DOI: 10.63941/DIT.ADSimrj.2025.1.4.113

ABSTRACT

This descriptive-quantitative research study explored the frequency of occurrence of hazards and accidents in the workplace and the various aspects that influence the occurrence. Occupational health and safety variables are investigated in this study, namely 1) workplace policies and procedures; 2) occupational health and safety awareness of workers; and 3) participation of workers in the implementation of occupational health and safety. The research locale is the city of Iligan, Lanao del Norte and a total of seventy-five (75) worker-respondents from various industrial construction firms participated in the study, which utilized a standardized 27-item OHS survey questionnaire. Statistical tools and SPSS were utilized in order to make interpretations and implications. There is a notable and strong embrace of workplace policies and procedures by the respondents, as evidenced by very high positive responses across all survey variables, reflecting a robust commitment to nurturing a safe and healthy work environment, emphasized by a high level of awareness and active participation in the implementation of occupational health and safety standards. Moreover, the frequency of workplace hazards appears to be relatively low, suggesting that the worker-respondents possess a keen awareness of the importance of maintaining safety while carrying out their duties. The only low-level needing immediate intervention is the workers' spontaneity in understanding whom to report to and how to report accidents when they occur. Both employees from small and large firms demonstrate high levels of awareness and engagement in occupational health and safety procedures. Recommendations to enhance workplace policies and standards are in place.

Keywords: Construction, Descriptive-quantitative, Hazards, Health Work Environment, Occupational Health, Safety Awareness

INTRODUCTION

The construction industry is recognized as a fundamental catalyst of economic growth and development in any country, including its significant contribution to the Philippine national economy. Despite constituting a relatively small percentage of the overall workforce, construction stands out as one of the most perilous sectors due to its unique characteristics, consistently exhibiting poor safety records. Even though there have been improvements since the Occupational Safety and Health Act of 1970, workers in construction still experience higher rates of injury and death compared to workers in other industries.

Background of the Study

This study looks into what makes workplaces safer for employees, focusing on preventing accidents, injuries, and exposure to harmful substances. Safety hazards exist in all industries, so it's crucial to identify them and make sure employees have the right training, equipment, and support to work safely.

Statement of the Problem

1. What is the frequency level of occurrence of occupational hazards at work?

2. What is the level of implementation of policies and procedures on health and safety at work?
3. What is the level of awareness of the worker-respondents on occupational health and safety?
4. What is the level of participation of the worker-respondents on the implementation of occupational health and safety policies and procedures?
5. Is there a significant difference in the indicated occupational safety and hazards when the worker-respondents are grouped based on small and big company classification?
6. Is there a significant relationship between frequency of occurrence of hazards, workplace policies and procedures, occupational health and safety awareness, and level of participation to occupational health and safety procedures?
7. What intervention policies are recommended based on the findings of this study?

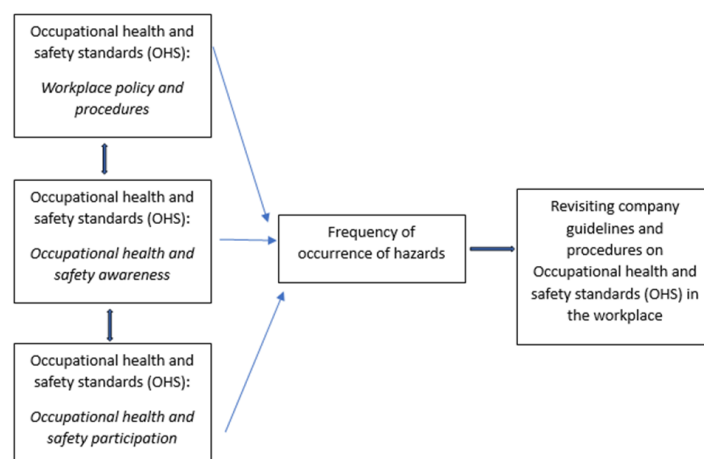
Objective of the study

This research study sought to:

- 1) Determine the frequency level of occurrence of occupational hazards at work;
- 2) Measure the level of implementation of policies and procedures on health and safety at work;
- 3) Determine the level of awareness of the worker-respondents on occupational health and safety;
- 4) Determine the level of participation of the worker-respondents in the implementation of occupational health and safety policies and procedures;
- 5) Measure if there is a significant difference in the indicated occupational safety and hazards when the worker-respondents are grouped based on small and big company classification;
- 6) Determine if there is a significant relationship between frequency of occurrence of hazards, workplace policies and procedures, occupational health and safety awareness, and level of participation in occupational health and safety procedures; and
- 7) Recommend an intervention plan that promotes better occupational health and safety policies and procedures in the workplace.

Conceptual Framework

The variables involved in this research study are illustrated in Figure 1, which presents the following independent variables: 1) workplace policy and procedures; 2) occupational health and safety awareness; and 3) level of participation of employees in occupational health and safety standards. All of these independent variables are perceived as influencing the frequency of occurrence of hazards and accidents in the workplace. Based on the findings of this study, empirical recommendations are proposed in order to improve the implementation of OHS policies and guidelines in the workplace.



RESULTS AND DISCUSSION

The presentation of statistical data relative to the problems posed in the statement of the problem. The corresponding analysis and interpretation of data are incorporated in this portion of the study.

Frequency of Occurrence of Occupational Hazards in the Workplace

Table 1
Mean Scores of the Frequency of Occupational Hazards

		Frequency mean	Descriptive level
1	Manually lift, carry or push items heavier than 20 kgs at least 10 times during the day	6.76	Very high frequency of exposure to occupational hazards
2	Do repetitive movements with your hands or wrists	6.60	Very high frequency of occurrence
3	Perform work tasks or use work methods, that you are not familiar with	1.00	Very rare occurrence
4	Interact with hazardous substances such as chemical, flammable liquids and gases	1.75	Very rare occurrence
5	Work in a bent, twisted or awkward posture	7.00	Very high frequency of exposure to occupational hazards
6	Work at a height that is 2 meters or more above the ground or floor	1.47	Very rare occurrence
7	Work in noise levels that are so high that you have to raise your voice when talking to people less than 1 meter away	1.00	Very rare occurrence
8	Experience being bullies or harassed at work	1.00	Very rare occurrence
9	Stand for more than 2 hours in a row	6.36	Very high frequency of exposure to occupational hazards
Overall mean		3.66	Less Frequent

Legend: 6-7 Very frequent exposure/ 5.0-6.9 High Frequency/ 4.0-5.9 Moderate Frequency/ 3.0-4.9 Less Frequent/ 2.9 below Very Rare exposure to hazards

The study reveals that workers are exposed to nine occupational hazards in the workplace, with the highest frequency being "work in a bent, twisted, or awkward posture." This poses significant health and safety risks, particularly in large industrial firms. Studies have shown a link between noise and vibration exposure and hearing loss, particularly in construction industries. Additionally, repetitive movements with hands and standing for more than two hours in a row are also rated as high-frequency. Out of the nine occupational hazards, five conditions are considered not alarming, as respondents reported that their exposure to these conditions is rare or may never occur.

The overall mean score for the frequency of occurrence of these hazards is "less frequent," meaning workers are rarely exposed to them, indicating that exposure to adverse effects from accidents and untoward incidents is also less frequent. This highlights the urgent need for careful monitoring and preventive measures to protect workers' health across different job settings.

Level of Implementation of Workplace Policies and Procedures

Table 2 shows that out of seven aspects of workplace policies and procedures, five are considered very high level, indicating that these guidelines are present in the respondents' firms. These include receiving training on workplace safety, regular communication with management, a systematic policy to identify and prevent hazards, workplace safety being considered important, and a quick investigation of accidents. The highest rated statement is workplace safety being at least as important as production and quality, with a mean score of 4.84. The least rated item is the presence of an active and effective

health and safety committee or worker health and safety representative. Research studies have highlighted the importance of effective workplace policies and standard procedures in industries like construction, emphasizing the need for preventative protection against accidents and dangers.

Table 2
Mean scores of workplace policies and procedures

	Statements on workplace policies and procedures	Mean scores	Descriptive level
1	Everyone receives the necessary workplace health and safety training when starting a job, changing jobs or using new techniques.	4.65	Very high level
2	There is regular communication between employees and management about safety issues.	4.60	Very high level
3	Systems are in place to identify, prevent, and deal with hazards at work.	4.63	Very high level
4	Workplace safety is considered to be at least important as production and quality.	4.84	Very high level
5	There is active and effective health and safety committee and/or worker health and safety rep	4.28	High level
6	Incidents and accidents are investigated quickly in order to improve	4.51	Very high level
7	Communication about workplace health and safety procedures is done in a way that I can understand.	4.33	High level
	Overall mean score	4.54	Very high level

Legend: 4.5-5.0 Very high level/ 4.0-4.49 High level/ 3.0-3.9 Moderate level/ 2.0-2.9 Low level/ 1.9 below very low level or the policy is not in place

Level of Awareness of Worker-Respondents on Occupational Health and Safety

Table 3
Mean scores of the occupational health and safety awareness

	Statements on workplace policies and procedures	Mean scores	Descriptive level
1	I am clear about my rights and responsibilities in relation to workplace health and safety	4.77	Very high level
2	I am clear about my employer's rights and responsibilities in relation to workplace and safety.	4.52	Very high level
3	I know about how to perform my job in a safe manner.	4.85	Very high level
4	If I became aware of a health and safety hazard at my workplace, I know who (at my workplace) to report it to.	4.67	Very high level
5	I have the knowledge to assist in responding to any health and safety concerns at the workplace.	4.36	High level
6	I know what the necessary precautions are that I should while doing my job.	4.31	High level
	Overall mean score	4.58	Very high level

Legend: 4.5-5.0 Very high level/ 4.0-4.49 High level/ 3.0-3.9 Moderate level/ 2.0-2.9 Low level/ 1.9 below very low level or the policy is not in place

Table 3 shows the mean scores of six statements about occupational health and safety awareness. Four of the six statements scored very high, indicating a high level of awareness. The highest rated statement was "I know about how to perform my job in a safe manner," while the least rated statement was "I know what the necessary precautions are." The overall mean score for occupational health and safety awareness is 5.54, indicating a high level of awareness in preventing and responding to accidents and hazards.

Level of Participation of Worker-Respondents in Occupational Health and Safety Standards

Table 4
Mean scores of the worker-respondents' participation in occupational health and safety

	Statements on workplace policies and procedures	Mean scores	Descriptive level
1	I am clear about my rights and responsibilities in relation to workplace health and safety	4.47	High level
2	I am clear about my employer's rights and responsibilities in relation to workplace and safety.	4.60	Very high level
3	I know about how to perform my job in a safe manner.	4.69	Very high level
4	If I became aware of a health and safety hazard at my workplace, I know who (at my workplace) to report it to.	2.00	Low level
5	I have the knowledge to assist in responding to any health and safety concerns at the workplace.	4.40	High level
	Overall mean score	4.03	High level

Legend: 4.5-5.0 Very high level/ 4.0-4.49 High level/ 3.0-3.9 Moderate level/ 2.0-2.9 Low level/ 1.9 below very low level or the policy is not in place

Table 4 shows worker-respondents' perceptions of workplace policies and procedures related to their participation in implementing health and safety measures. There is a high level of clarity among employees regarding their rights and responsibilities regarding workplace health and safety, with mean scores ranging from 4.47 to 4.69. However, there is a low level of awareness about who to report hazards to, suggesting workers are not trained or aware of their role in accidents. The overall mean score across all statements in occupational safety participation is $X=4.03$, indicating a high level of understanding and awareness of workplace health and safety policies and procedures. Studies have highlighted the importance of worker participation in occupational health and safety initiatives, resulting in a reduced occurrence of accidents. Organizations can create a culture of safety by involving workers in safety planning, training, and accident investigation processes, leading to a safer work environment.

Summary of the levels of the 3 OHS aspects

Table 5
Summary of the Mean Scores of the Three Occupational Health and Safety Aspects

	Occupational health and safety aspects	Mean scores	Descriptive level
1	Workplace policies and procedure	4.54	Very high level
2	Occupational health and safety awareness	4.58	Very high level
3	Participation to occupational health and safety	4.03	High level
	Overall mean score	4.38	High level

Legend: 4.5-5.0 Very high level/ 4.0-4.49 High level/ 3.0-3.9 Moderate level/ 2.0-2.9 Low level/ 1.9 below very low level or the policy is not in place

Table 5 shows the mean scores of workplace policies and procedures, occupational safety awareness, and participation in occupational health and safety. The high-level scores for workplace policies and procedures and occupational safety awareness are high, while the lowest score for participation in occupational health and safety is low. The overall score for these aspects is high, indicating that companies generally have in place workplace policies and procedures, and workers are highly aware of these guidelines. Research emphasizes the importance of workplace safety policies, awareness, and participation in promoting a safe work environment and reducing accidents.

Correlation of Frequency of Hazard with the 3 OHS Variables

Table 6

Correlation of the Frequency of Hazard Occurrence with Workplace Policies, Occupational Health and Safety Awareness, and Participation in Occupational Health and Safety using Spearman's Rank Coefficient

Variables Correlated	Correlation coefficient	Level of relationship	P value	Descriptive interpretation
Frequency of hazard occurrence and Workplace policies and procedures	-0.035	Very weak negative correlation	0.763	No significant relationship
Frequency of hazard occurrence and Occupational health and safety awareness	-0.04	Very weak negative correlation	0.974	No significant relationship
Frequency of hazard occurrence and Participation to occupational health and safety	-0.013	Very weak negative correlation	0.911	No significant relationship

Level of significance set at ≥ 0.05

The study reveals a weak negative correlation between the frequency of workplace hazards and workplace factors such as policies, procedures, occupational health and safety awareness, and participation in occupational health and safety measures. The data suggest that these factors do not significantly affect the frequency of workplace hazards. However, the negative correlation suggests that as these factors are effectively implemented, the frequency of workplace hazards reduces. Other studies have also found a negative correlation between safety culture, worker involvement in hazard identification processes, and effective leadership behaviors. These findings highlight the importance of workplace safety policies, awareness of occupational safety guidelines, and active participation in implementing safety measures in ensuring a safe work environment. Clear policies and procedures protect employees, awareness of safety guidelines creates a culture of safety, and active participation improves safety outcomes and organizational commitment to safety. Overall, these findings underscore the critical role of workplace safety policies, awareness, and participation in creating a safe and healthy workplace.

Interrelationships of the Three OHS Variables

Table 7

Correlation of the 3 Variables using Spearman's Rank Coefficient

Variables Correlated	Correlation coefficient	Level of relationship	P value	Descriptive interpretation
Workplace policies and procedures and Occupational Safety and awareness	0.073	Very weak positive correlation	0.531	Not significant relationship
Workplace policies and Participation to occupational health and safety	0.366	Moderate positive correlation	0.001	Significant relationship
Occupational safety and awareness and Participation to occupational health and safety	0.237	Weak positive correlation	0.041	Significant relationship

Level of significance set at ≥ 0.05

This research study examines the correlation between workplace policies and procedures, occupational safety awareness, and participation in occupational health and safety. It found no significant relationship between these variables, but a moderate positive relationship between workplace policies and occupational safety awareness. However, there was a low positive relationship between occupational safety awareness and participation. The study suggests that awareness leads to higher

participation in preventing hazards and accidents. Other studies show a positive correlation between well-defined workplace health and safety policy procedures and active participation in safety procedures. The study emphasizes the importance of fostering a safety-oriented culture within organizations, where employees are not only aware of the policies but also motivated to participate in their implementation. The study concludes that promoting awareness and providing education on workplace health and safety can strengthen employee engagement in safety procedures, ultimately promoting a safer work environment.

Difference in the OHS Practices Between Small and Large Companies

Table 8

Difference in the Indicated Variables between Small and Big Companies using ANOVA

Company	Mean score	Mean difference	F value	P value	Descriptive interpretation
<i>Occupational Hazard Occurrence</i>					
Small company	3.61	0.09	0.187	0.667	No significant difference
Large company	3.70				
<i>Workplace policies and procedures</i>					
Small company	4.58	0.06	0.377	0.541	No Significant difference
Large company	4.52				
<i>Occupational safety and awareness</i>					
Small company	4.61	0.20	10.566	0.002	Significant difference
Large company	4.41				
<i>Participation to occupational health and safety</i>					
Small company	4.07	0.08	2.997	0.088	No significant difference
Large company	3.99				

Level of significance set at ≥ 0.05

Table 8 compares occupational hazard occurrence, workplace policies and procedures, occupational safety awareness, and participation in occupational health and safety measures between small and large companies. Small companies have a higher mean score for occupational hazard occurrence and workplace policies and procedures, but no significant difference in frequency.

CONCLUSION

The findings of this research study indicate a notable and strong embrace of workplace policies and procedures by the respondents, as evidenced by overwhelmingly positive responses across all survey variables. This reflects a robust commitment to fostering a safe and healthy work environment, emphasized by a high level of awareness and active participation in the implementation of occupational health and safety standards. Moreover, the frequency of workplace hazards appears to be relatively low, suggesting that the worker-respondents possess a keen awareness of the importance of maintaining safety while carrying out their duties. However, one area requiring attention is the workers' spontaneity in understanding whom to report to and how to report accidents when they occur. Nevertheless, both employees from small and large firms demonstrate high levels of awareness and engagement in occupational health and safety procedures. Collectively, these findings affirm the effectiveness of current workplace health and safety programs and underscore the collective commitment of the surveyed group to fostering a culture of safety and well-being across the companies they are employed in.-being.

Recommendations

1. Ongoing Education and Training: Conduct frequent training sessions and programs for all employees that emphasize workplace health and safety. These sessions should address new hazards

as well as the best practices for basic safety procedures.

2. Strengthen Communication Channels: Promote honest and open dialogue routes for communication between management and staff about incidents and safety concerns reporting, as well as recommendations for development. Make use of several platforms, including gatherings, periodicals, and online media, to guarantee efficient distribution of details.
3. Activity and Participation: Promote the active engagement and empowerment of including workers in safety committees, hazard assessments, and other safety initiatives, decision-making forums, and identification procedures. Acknowledge and compensate staff members for their roles in fostering a culture of safety.
4. Incident Investigation and Learning: Create a methodical investigation process. events and close calls as soon as possible.

REFERENCES

- Abas, N. H., Noridan, M. R., Rahmat, M. H., Abas, N. A., & Ibrahim, N. Q. (2020). Causes of accidents involving scaffolding at construction sites. *Journal of Technology Management and Business*, 7(1), 75-86.
- Al Alawi, M., Al Shahri, M., & Al Ghafri, A. (2020). Framework for investigating the level of compliance to the OHS regulatory by small and medium construction companies in Oman.
- Bandara, S. M. M. S. K., & Perera, G. D. N. (2022). Impact of health and safety practices on employee job performance: Mediating role of employee commitment in selected building construction companies in Sri Lanka. *Partners Universal International Research Journal*, 1(3), 1-12.
- Bunting, J., Branche, C., Trahan, C., & Goldenhar, L. (2017). A national safety stand-down to reduce construction worker falls. *Journal of Safety Research*, 60, 103-111. <https://doi.org/10.1016/j.jsr.2017.04.001>
- Chen, H., Wang, S., & Li, Y. (2022). Safety leadership in small enterprises: A qualitative study. *Journal of Safety Research*, 60, 103-111. <https://doi.org/10.1016/j.jsr.2022.01.003>
- Chen, H., Wang, S., & Li, Y. (2024). Worker involvement in managing occupational safety and construction projects. *Journal of Construction Engineering and Management*, 135(6), 524-533. [https://doi.org/10.1061/\(ASCE\)CO.1943-7862.0002132](https://doi.org/10.1061/(ASCE)CO.1943-7862.0002132)
- Department of Labor and Employment (DOLE). (2012). *Work-related injuries and illnesses of public workers: A review of employees' compensation claims from GSIS, 2010-2012*. <https://oshc.dole.gov.ph/wp-content/uploads/2020/10/2013-Work-Related-Injuries-and-Illnesses-of-Public-Workers-2010-2012-2.pdf>
- Department of Labor and Employment (DOLE). (2018). *Best practices in promoting occupational safety and health in the Philippines*. <https://oshc.dole.gov.ph/wp-content/uploads/2020/10/2018-Best-Practices-in-Promoting-OSH-in-the-Philippines.pdf>
- Department of Labor and Employment (DOLE). (2021). *A study on the compliance to Rule 1070 of DOLE occupational safety and health standard based on the DOLE labor inspection checklist*. <https://oshc.dole.gov.ph/wp-content/uploads/2023/08/2021-02-A-Study-on-the->

Compliance-to-Rule-1070-of-DOLE-Occupational-Safety-and-Health-Standard-Based-on-the-DOLE-Labor-Inspection-Checklist-2.pdf

- Dragano, N., Barbaranelli, C., Reuter, M., Wahrendorf, M., Wright, B., Ronchetti, M., ... & Iavicoli, S. (2018). Young workers' access to and awareness of occupational safety and health services: Age differences and possible drivers in a large survey of employees in Italy. *International Journal of Environmental Research and Public Health*, 15(7), 1511. <https://doi.org/10.3390/ijerph15071511>
- Eberendu, I. F., et al. (2018). Workplace health risks associated with diseases and health promotion in the Nigerian banking sector. *International Journal of Advanced Research in Biological Sciences*, 5(2), 197-208. <https://doi.org/10.23979/ijarbs.5.2.197-208>
- Egbu, C. F., Chan, D. W. M., & Sim, J. Y. T. (2005). The impact of safety climate and safety management practices on safety outcomes: A study in the construction industry. *Journal of Safety Research*, 36(2), 125-132. <https://doi.org/10.1016/j.jsr.2005.01.002>
- Eliufoo, H. (2019). Health & safety knowledge at construction sites: Modalities and characteristics. *Public Health Research*, 9(3), 43-49. <https://doi.org/10.29252/phr.9.3.43>
- Eyiah, A. K., Alkanam Kheni, N., & Quartey, P. D. (2019). An assessment of occupational health and safety regulations in Ghana: A study of the construction industry. *Journal of Building Construction and Planning Research*, 7(2), 11-31. <https://doi.org/10.4236/jbcpr.2019.72002>
- Fang, D., Zhao, C., & Zhang, M. (2016). A cognitive model of construction workers' unsafe behaviors. *Journal of Construction Engineering and Management*, 142(9), 04016039. [https://doi.org/10.1061/\(ASCE\)CO.1943-7862.0001154](https://doi.org/10.1061/(ASCE)CO.1943-7862.0001154)
- Forteza, F. J., Carretero-Gomez, J. M., & Sese, A. (2017). Occupational risks, accidents on sites, and economic performance of construction firms. *Safety Science*, 94, 61-76. <https://doi.org/10.1016/j.ssci.2016.11.001>
- Garcia, C., et al. (2020). Workers' engagement in safety committees and its impact on safety policy implementation: A case study approach. *Safety Science*, 25(4), 367-382. <https://doi.org/10.1016/j.ssci.2019.12.009>
- Garcia, L., & Nguyen, T. (2023). Technological advancements and workplace safety: Implications for risk management. *Journal of Risk Research*, 25(3), 324-339. <https://doi.org/10.1080/13669877.2023.1849123>
- Garcia, R., Martinez, L., & Lopez, A. (2022). Occupational Health and Safety Management: Approaches in the Construction Industry. *Journal of Occupational Safety and Health*, 18(3), 120-134. <https://doi.org/10.1016/j.josh.2022.08.004>
- Goetsch, D. L. (2020). *Occupational Safety and Health for Technologists, Engineers, and Managers* (9th ed.). Pearson.
- Griffin, M. A., Ashkanasy, N. M., & Neal, H. M. (2006). The impact of safety leadership on safety outcomes in organizations. *Journal of Safety Research*, 37(4), 223-229. <https://doi.org/10.1016/j.jsr.2006.06.001>

- Gullo, L. J., & O'Reilly, J. T. (2014). *Accident and Incident Investigation: Principles and Practices* (2nd ed.). Pearson.
- Hamid, A. R. A., Majid, M. Z. A., & Singh, B. (2008). Causes of accidents at construction sites. *Malaysian Journal of Civil Engineering*, 20(2), 242-259. <https://doi.org/10.1016/j.mjce.2008.02.008>
- Healey, B. J., & Walker, K. T. (2011). Introduction to occupational health in public health: A case study analysis. *International Journal of Occupational Safety and Ergonomics*, 38(1), 89-106. <https://doi.org/10.1080/10803548.2011.10902559>
- Jones, K., & Brown, M. (2021). The role of organizational culture in workplace safety: A review of the literature. *Safety Science*, 98, 105-115. <https://doi.org/10.1016/j.ssci.2017.06.019>
- Kiconco, A., et al. (2019). Determinants of occupational injuries among building construction workers in Kampala City, Uganda. *BMC Public Health*, 19, 1-11. <https://doi.org/10.1186/s12889-019-7522-3>
- Lee, X., & Chen, Y. (2023). Leadership influence on workers' participation in safety policies: A cross-sectional study in manufacturing industries. *Journal of Safety Research*, 30(1), 45-58. <https://doi.org/10.1016/j.jsr.2023.03.002>
- Manseau, M. S., Hallowell, D. H., & Moynihan, C. M. (2009). Safety management practices in construction projects. *Journal of Construction Management*, 10(2), 120-132. <https://doi.org/10.1108/17538410910957523>
- Mesaros, P., Spisakova, M., & Mackova, D. (2019). Analysis of safety risks on the construction site. *IOP Conference Series: Earth and Environmental Science*, 222(1), 012106. <https://doi.org/10.1088/1755-1315/222/1/012106>
- Reyes-Garcia, A. J., Arenas, K. R., Manzon, R. D. S., Loria Jr., S. A., & Galang, A. G. (n.d.). Construction safety management assessment of the local government unit of Dingalan, Aurora, Philippines.
- Shao, B., Hu, Z., Liu, Q., Chen, S., & He, W. (2019). Fatal accident patterns of building construction activities in China. *Safety Science*, 111, 253-263. <https://doi.org/10.1016/j.ssci.2018.08.008>
- Small Enterprises: A Systematic Review of Literature. (2020). *Journal of Occupational Health Psychology*, 28(4), 532-548. <https://doi.org/10.1037/ocp0000180>
- Smith, A., & Johnson, B. (2018). Enhancing occupational safety: The impact of training programs on workers' awareness and participation. *Journal of Occupational Health*, 15(2), 123-136. <https://doi.org/10.1177/1048291118758353>
- Smith, J., Brown, M., & Davis, P. (2019). The role of leadership in hazard prevention. *Journal of Safety and Health Programs: Strategies and Best Practices*, 25(4), 567-584. <https://doi.org/10.1016/j.ssci.2018.08.008>

- Smith, J., Johnson, R., & Williams, A. (2020). Understanding the causes of workplace accidents: A comprehensive analysis across industries. *Journal of Occupational Safety and Health*, 15(2), 120-135. <https://doi.org/10.1111/josh.12019>
- Sukiennik, M., Bąk, P., & Kapusta, M. (2019). The impact of the management system on developing occupational safety awareness among employees. *Inżynieria Mineralna*, 21(1), 245-250. <https://doi.org/10.29252/indmin.2021.21.1.245>
- Tan, Z. C., Tan, C. E., & Choong, Y. O. (2023). Occupational safety & health management and corporate sustainability: The mediating role of affective commitment. *Safety and Health at Work*, 14(4), 415-424. <https://doi.org/10.1016/j.shaw.2022.09.014>
- Zaportiza, J. K. (2024). Construction safety and health: Assessment of occupational health and safety practices of the construction companies in Iligan City, Philippines.
- Zaini, N. Z. M., Salleh, M. A. M., Hasmoni, M. F., & Abas, N. H. (2020, May). Effect of accidents due to falls from height at construction sites in Malaysia. *IOP Conference Series: Earth and Environmental Science*, 498(1), 012106. IOP Publishing. <https://doi.org/10.1088/1755-1315/498/1/012106>
- Zerguine, H., Tamrin, S. B. M., & Jalaludin, J. (2018). Prevalence, source, and severity of work-related injuries among "foreign" construction workers in a large Malaysian organisation: A cross-sectional study. *Industrial Health*, 56(3), 264-273. <https://doi.org/10.2486/indhealth.2017-0109>
- Zhang, F., Fleyeh, H., Wang, X., & Lu, M. (2019). Construction site accident analysis using text mining and natural language processing techniques. *Automation in Construction*, 99, 238-248. <https://doi.org/10.1016/j.autcon.2018.11.004>
- Zohar, M. (2010). Safety culture and safety management systems in construction: A review. *Journal of Safety Management Systems*, 16(2), 91-104.