

# Knowledge, Attitude and Practice on Occupational Safety and Health Awareness: An Exploratory Study in Technology Industry

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DOI: <https://doi.org/10.30880/peat.2024.05.01.085>

## Article Info

Received: 27 December 2023

Accepted: 18 January 2024

Available online: Day Month Year

## Keywords

KAP, OSH awareness, Risk management, Industry workers, OSH risks.

## Abstract

This study aimed to assess the influence of knowledge, attitude, and practice on occupational safety and health (OSH) risk management in Malaysia. A cross-sectional study was conducted using a 30-item self-administered questionnaire addressing information on sociodemographic, knowledge on OSH, attitude and practice in OSH among workers. A total of 60 technicians participated in the survey. The mean scores of knowledge level and attitude level were found to be higher among individuals aged 50-59 years ( $M=4.40$ ,  $SD=0.26$ ), individuals with a working experience of 16-25 years, and those with more than 25 years of working experience. The lowest mean scores in attitude were observed among individuals in the age group 30-39 years and the second lowest was from the youngest age group, 20-29 years. The data analysis of the study found that there was no significant influence between the factors of knowledge and practice with demographic which is age, working experience, and designation, with probability values greater than  $p > 0.05$ . Furthermore, the implementation of a suitable, adequate, and continually improving system was crucial and needs to be implemented to manage OSH risks in the organization. The findings of this study were crucial in determining the organizational characteristics that can impact the effectiveness of risk management implementation to address issues, especially in Malaysian organizations.

## 1. Introduction

Safety and health were important components of well-being in all aspects of life, including the workplace. Safety and health at work involves the identification, classification, and management of risks to prevent harm to workers and others. Workplace hazards include physical, chemical, biological and psychological risks, and employers have a responsibility to ensure the safety and health of their workers. Creating and maintaining safe and healthy places requires a comprehensive approach that includes policies and procedures, employee training

and education, hazard identification and control measures, and ongoing monitoring and evaluation. In addition to preventing harm to workers, a focus on workplace safety and health can also lead to increased productivity, better morale and reduced costs associated with workplace injuries and illnesses. Employers were required to comply with these regulations and take proactive measures to protect their employees. Additionally, employees have the right to work in a safe and healthy environment and to report hazards and concerns without fear of retaliation. Therefore, safety and health were essential components of a productive and sustainable workplace, and employers have a responsibility to prioritize and invest in these areas.

Occupational safety and health (OSH) were an important part of workplace management that tries to safeguard employees from potential dangers that could result in injury, disease, or death. Despite significant efforts by governments, employers, and organizations to increase OSH awareness and compliance, there were still instances where workers lack the requisite knowledge, attitudes, and practices to protect their safety and health at work. Research has shown that many workers lack knowledge of OSH regulations, policies, and procedures. A study conducted by Al-Hemoud et al. in Kuwait found that many workers were unaware of OSH laws and regulations, resulting in low levels of safety compliance. Attitude towards safety was another critical factor that affects employee safety behaviour [1]. Studies have found that employees who have a positive safety attitude were more likely to comply with safety procedures and report safety incidents [2].

### **1.1 Research Objective**

This study was aimed to:

- a. To determine the level of knowledge, attitude and practice of OSH awareness among project staff.
- b. To analyse the factor (knowledge/ attitude/ practice) that influences OSH awareness among project staff in the technology industry.
- c. To recommend control measures to increase the level of OSH awareness in the workplace.

### **1.2 Problem Statement**

The problem of lack of knowledge, attitude and practice (KAP) about OSH whether in terms of law, training and knowledge about the environment, experience and employment demographics factors has caused an increase in industrial accidents. The purpose of this study was also based on the data collected by the Quality Assurance department regarding the level of employee KAP of OSH, which was very unsatisfactory because they take for granted the importance of safety and health in the workplace. Thus, awareness of the importance of a safe and healthy workplace was an important aspect of every job.

## **2. Material and Method**

### **2.1 Sample Collection**

This study was aimed at Project staff in Technology Industry, Kuala Lumpur. The technique that was used to select the respondents was a survey. Survey research was conducted based on references related to matters related to sampling and data analysis. The respondents were among the workers that working in the technology industry. Using Krejcie and Morgan, about 59 respondents were chosen from 70 populations of workers. This was the minimum sample size that was needed in this research project [3].

### **2.2 Study Design**

This study was a quantitative study. It was carried out by distributing questionnaires to the participants through google form. Dependent variables for this study are KAP on OSH. Independent variables for this study were gender, age, working experience and designation.

### **2.3 Data analysis and statistical comparison**

The data was analyzed using Statistical Package for the Social Sciences (SPSS) Version 29 software. The answer was sorted out into the level of KAP of the subjects. The level of KAP on OSH among technology industry workers were analyzed by using mean and standards deviation.

### 3. Result and discussion

#### 3.1 Reliability analysis of the instrument

The analysis employed the Cronbach Alpha Test, revealing a value of 0.949. This result signifies the questionnaire's reliability, as it exceeds the recommended threshold of 0.7. The pilot study involved a total of 10 respondents. Table 1 displays the results of the Cronbach Alpha reliability test.

**Table 1** Reliability Statistics

Variable	N of Items	Cronbach Alpha
Knowledge	10	0.892
Attitude	10	0.852
Practice	10	0.833
Overall	30	0.949

#### 3.2 Respondents

This study involved a total of 60 respondents from the technology industry in Kuala Lumpur. From the survey conducted, out of 60 of the respondents, there are a total of 47 individuals (78.3%) among the respondents were male, while a total of 13 individuals (21.7%) were female. The analysis highlights that the largest segment of respondents, consisting of 14 individuals (23.3%), falls within the age range of 20 – 29 years. Subsequently, a considerable portion, comprising 26 individuals (43.3%), falls within the age bracket of 30 – 39 years. Additionally, 12 individuals (20%) were situated in the age range of 40 – 49 years, while 8 individuals (13.3%) were aged between 50 – 59 years. This in-depth analysis provides a comprehensive overview of the age distribution of the respondents. For the working experience level, the analysis unveils that a predominant portion of respondents falls into the category of 0 – 5 working experience, constituting 15 individuals (25%). Furthermore, a substantial segment, encompassing 28 individuals (46.7%) among the respondents, reflects a length of service ranging from 6 – 15 years. In addition, 9 individuals (15%) have accumulated a service duration of 16 – 25 years, while a final subset of 8 individuals (13.3%) boasts an extensive service record of more than 25 years. Meanwhile, the analysis data for designation shows that 9 individuals (15%) from Manager position, 36 individuals (60%) were the most respondents from Engineer position, 6 individuals (10%) from Draughtperson, 3 individuals (5%) from Site Safety and lastly 6 individuals (10%) from Executive. Table 2 show demographic respondents.

**Table 2** Demographic respondents

		Frequency	Percentage (%)
<b>Gender</b>	Male	47	78.3
	Female	13	21.7
<b>Age</b>	20 – 29 years old	14	23.3
	30 – 39 years old	26	43.3
	40 – 49 years old	12	20
	50 – 59 years old	8	13.3
<b>Work experience</b>	0 – 5 years	15	25
	6 – 15 years	28	46.7

	16 - 25 years	9	15
	More than 25 years	8	13.3
<b>Designation</b>	Manager	9	15
	Engineer	36	60
	Draughtperson	6	10
	Site Safety	3	5
	Executive	6	10

### 3.3 Level of Knowledge, Attitude and Practice on OSH Awareness

Table 3 provides a clear depiction of the statistical information pertaining to OSH knowledge levels. The standard deviation for OSH knowledge was (SD=0.53), signifying a limited spread of values around the mean. A lower standard deviation generally implies that the data points were closely clustered around the average. The category assigned to the mean value further aids in the interpretation. In this case, a mean of 4.20 was designated as "High." This classification indicates that, on average, the assessed individuals or group exhibit a high level of knowledge regarding OSH. The statistical details suggest a relatively consistent and elevated understanding of OSH among the evaluated population.

**Table 3** *Level of Knowledge on Occupational Safety and Health*

<b>Variables</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Category</b>
<b>Level of Knowledge</b>	4.20	0.53	High

Table 4 presents statistical insights indicating that, on average, the individuals or group under assessment demonstrate a favourable attitude (M=4.26) towards OSH. The modest standard deviation (SD=0.54) suggests a notable level of consistency in these positive attitudes, highlighting a uniform and favourable perspective on OSH within the evaluated population. The classification as "Positive," based on the mean value, underscores that the average attitude towards OSH was affirmative among those being assessed.

**Table 4** *Level of Attitude on Occupational Safety and Health*

<b>Variables</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Category</b>
<b>Level of Attitude</b>	4.26	0.54	Positive

Table 5 reveals that the mean value level of practice in OSH is 4.12, indicating that, on average, the individuals or group being assessed were involved in OSH-related practices at this level. The standard deviation of 0.63 suggests a degree of consistency, signifying that these practices in the dataset were relatively close to the mean of 4.12. This implies a certain level of uniformity or consistency in the OSH practices among the individuals or group under evaluation. The assigned category, "Very good," was based on the mean value, emphasizing that, on average, the assessed population demonstrates a very good level of practice in OSH.

**Table 5** *Level of Practice on Occupational Safety and Health*

<b>Variables</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Category</b>
<b>Level of Practice</b>	4.12	0.63	Very good

#### 4. Conclusion

In conclusion, this study found that a higher level of knowledge was generally closely related to a longer period of working experience within the company. Meanwhile, a better attitude was closely associated with the position held, particularly with higher-ranking positions, and good practice was significantly higher among older age groups and those with longer tenure. Additionally, the implementation of a suitable, adequate, and continually improving system was crucial and needs to be implemented to manage OSH risks in the organization. Effective implementation of OSH will shape the image, work morale, and enhance the productivity of employees. Since employees in the project department need to convey safety and health information to foreign workers as well as other departments' employees, it was essential for them to have good knowledge, attitude, and practices in OSH first. Finally, a stricter system will influence employees to comply more with safety and health regulations during work, thereby preventing accidents from occurring.

#### Acknowledgment

The author would like to thank the Faculty of Engineering Technology, University Tun Hussein Onn Malaysia, and Ms. Elya Atikah Binti Ismail from Willowglen (M) Sdn Bhd.

#### Conflict of Interest

Authors declare that there is no conflict of interests regarding the publication of the paper.

#### References

- [1] Aluko, O.O., Adebayo, A.E., Adebisi, T.F. et al. Knowledge, attitudes and perceptions of occupational hazards and safety practices in Nigerian healthcare workers. *BMC Res Notes* 9, 71 (2016). <https://doi.org/10.1186/s13104-016-1880-2>
- [2] Aziz, S.F.A.; Osman, F. Does compulsory training improve occupational safety and health implementation? The case of Malaysian. *Saf. Sci.* 2019, 111, 205–212.
- [3] Benavides F G, Benach J, Muntaner C, Delclos G L, Catot N. others. 2006. "Associations between Temporary Employment and Occupational Injury: What Are the Mechanisms?" *Occupational and Environmental Medicine* 63 (6): 416–21. [PMC free article] [PubMed]
- [4] Florence Sembe et al. "Effect of Selected Occupational Health and Safety Management Practices on Job Satisfaction of Employees in University Campuses in Nakuru Town, Kenya." (2017).
- [5] Guldenmund, F.W. (2000). The nature of safety culture: A review of theory and research. *Safety Science*, 34, 215-257. Zohar, D. (2010). Thirty years of safety climate research: Reflections and future directions. *Accident Analysis and Prevention*, 42, 1517-1522
- [6] Joseph Oluwatoyin Adebola. "Knowledge, Attitude and Compliance with Occupational Health and Safety Practices among Pipeline Products and Marketing Company (PPMC) Staff in." *Merit Research Journals*::, 2014, <https://meritresearchjournals.org/mms/content/2014/August/Adebola.pdf>. Accessed 9 June 2023.
- [7] Mukhtar, M., Yusof, A., & Isa, M. (2020). Knowledge, attitude and practice on occupational safety and health among workers in petrochemical companies. *IOP Conference Series: Earth and Environmental Science*.
- [8] Mendagudali, R., Akka, K., Swati, I., Shedole, D., & Bendigeri, N. (2016). Knowledge, attitude, and practices of food safety among women of Khaza bazar, the urban field practice area of KBN Institute of Medical Sciences, Kalaburagi, Karnataka. *International Journal of Medical Science and Public Health*.
- [9] Mohamad Yusoff, N. B., et al. "The Educator's Perspective: Knowledge, Attitude and Practices on Occupational Safety and Health at School among Primary and Secondary School Teachers. Malays." *J. Public Health Med* 19 (2019): 1-6.

- [10] Ngah, H.; Mohd Hairon, S.; Hamzah, N.A.; Noordin, S.; Shafei, M.N. Assessment of Knowledge, Attitude, and Practice on Safe Working in Confined Space among Male Water Services Workers in the Central Region of Malaysia. *Int. J. Environ. Res. Public Health* 2022, 19, 7416. <https://doi.org/10.3390/ijerph19>