

# Contractor's Awareness on Occupational Safety and Health (OSH) Management Systems in Construction Industry

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**Abstract.** Occupational Health and Safety Management Systems is part of the overall management system that facilitates the management of the OS&H risks associated with the business of the organization. This includes the organizational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the organization's OS&H policy. The purpose of this research is to determine the level of awareness of contractors on OSH management systems. A total of 34 numbers of class A contractors in Kelantan registered with Pusat Khidmat Kontraktor (PKK) were randomly selected. Data was collected using self-administered questionnaire. The findings indicate that most of the Class A Contractor in Kelantan aware that the occupational safety and health management system are important and should be practiced to achieve zero accident and death on site.

## 1 Introduction

Construction industry is a very unique industry and more dangerous than other industries. The construction sites are constantly changing and temporary. Each construction sites involve of many sub-contractors and they perform different types of work in close proximity to each other. The safety of workplace is an essential component of efficiency and productivity. Safety is the state of being "safe" (from French *sauf*), the condition of being protected against physical, social, spiritual, financial, political, emotional, occupational, psychological, educational or other types or consequences of failure, damage, error, accidents, harm or any other event which could be considered non-desirable. This can take the form of being protected from the event or from exposure to something that causes health or economical losses. It can include protection of people or of possessions

A management system is a proactive process with an organized set of components which enable an organization to accomplish a set of goals. Management systems usually focus on continuous improvement using the plan-do-check-act model [1]. Occupational Health and Safety Management Systems is part of the overall management system that facilitates the management of the OS&H risks associated with the business of the organization. This includes the organizational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the organization's OS&H policy.

Besides that, the management system specific to occupational health and safety is comprised of four interrelated components. These include management leadership and employee involvement, worksite analysis, hazard prevention and control and safety and health training [2]. OHSMS are performance oriented as opposed to compliance oriented.

Even though the studies of (OSH) management systems have found that the implementation of (OSH) management systems by the construction participants in Malaysia still at the infant stage, but the level of awareness amongst the specific construction participants is still not yet identified. Hence, a further research will be carry out in order to find out the level of awareness that affect to the level of application and practice of (OSH) management systems for the construction project by focusing at Kelantan State only. This research only focuses on the identifying level of awareness on (OSH) management systems amongst contractors in Kelantan State.

## 2 Elements of the Osh Management System

OHS management system includes to the whole organisation system which comprises to the six (6) main elements; policy, organizing, planning and implementing, measuring performance, audit and initial & periodic status. This research is only focuses on the policy and organizing elements. The other elements will be done on further research.

### 2.1 Policy

The OS&H policy shall:

- a) be appropriate to the nature and scale of the organization's OH&S risks,
- b) include a commitment to continual improvement,
- c) include a commitment to at least comply with current applicable OH&S legislation and with other requirements to which the organization subscribes,
- d) be documented, implemented and maintained,
- e) be communicated to all employees with the intent that employees are made aware of their individual OH&S obligations,
- f) be available to interested parties, and
- g) be reviewed periodically to ensure that it remains relevant and appropriate to the organization.

In implementing OSHMS, the companies should be obliged and compliance to legal requirements. Many employers have not established comprehensive accident prevention policies but instead concentrate on maximizing profit. They do not emphasize on safety because they do not know how high the actual cost of an accident is until it occurs [3]. According to Charles, the company should formulate and practice the Safety and Health management policies within the organization. Continual training and education are therefore indispensable to keep their knowledge updated on the relevant S&H issues [4]. According to Construction Occupational Health and Safety Management System (COHSMS) Guidelines by JCOSHA, to avoid and eliminate accident and workplace hazard, the contractors should establish and implement procedures for education and training of their employees about OSH.

### 2.2 Organizing

The organization shall construct a list that include all work hazards, risk assessment of each hazard and the required measures for controlling the risk of each hazard. The list shall at least include:

- a) Hazards reported by the manufacturers of all material, equipment, and tools used at the organization.
- b) Hazards reported by workers
- c) Hazards identified by incidents/accidents
- d) Hazards identified by any non-conformances to safety standards, regulations or other requirements.

The safety management system, after being developed at the corporate level, should be communicated to the project managers, supervisors and workers level. Measures should be taken to raise the awareness of workers and motivate them to take responsibilities of their own safety [4].

## **2.3 Planning and implementing**

Organizations adopt a planned and systematic approach to policy implementation. It includes the management arrangement such as organization activities, adequate and appropriate resources, measuring performance and audits. The organization shall establish and maintain documented procedures for the ongoing identification of hazards, the assessment of risks, and the implementation of necessary risk-control measures. The scope of these procedures shall include routine and non-routine activities, activities of all personnel having access to the workplace (including subcontractors and visitors) and facilities at the workplace, whether provided by the organization or others.

## **2.4 Measuring performance**

Under this element is about the method of monitoring and measuring the OSH performance. It describes the purpose and types of monitoring such as proactive monitoring and reactive monitoring. Performance monitoring and measurement shall:

- a) be used as a means of determining the extent to which S&H policy and objectives are being implemented and risks are controlled,
- b) include both proactive and reactive monitoring, and not be based only upon work related injury, ill health, disease and incident statistics, and
- c) be recorded.

The monitoring shall provide:

- a) feedback on H&S performance,
- b) information to determine whether the day-to-day arrangements for hazard and risk identification, prevention and control are in place and operating effectively, and
- c) the basis for decisions about improvement in hazard identification and risk control, and the S&H management system.

## **2.5 Audit**

An OSH audit is far more comprehensive than the measurement of a simple parameter or a routine safety inspection. The organization shall establish and maintain an audit program and documented procedures for periodic S&H management system audits to be carried out, in order to:

- a) determine whether or not the H&S management system:
  - conforms to planned arrangements for H&S management including compulsory requirements,
  - has been properly implemented and maintained, and
  - is effective in meeting the organization's policy and objectives,
- b) review the results of previous audits.
- c) provide information on the results of audits to management.

## **2.6 Initial and periodic status review**

The initial status review will provide information on the current system where enable the decision can be made based on its scope, adequacy and implementation. Besides that, it is also act as a baseline for the progress that can be measured. Further, the periodic status review will determine the outcome of the systems implemented and identify the necessary cause of action to be taken to improve any deficiencies.

## **3. The Level of Awareness of Contractors on OSH Management System**

The safety and health management is important and must be applied in construction site. Ignoring safety can result in accident and ill-health which not only losses of the profits but it also crippling of the company. Furthermore, providing a safe and healthy workplace is one of the most effective

strategies in for holding down the cost of doing construction business. Accidents cause not only delays in operations and project deliverables but also directly and indirectly incur costs [5].

According to Master Plan for Occupational Safety and Health in Construction [6], the number of fatalities encountered in the construction industry is alarming. Out of the total of 73,858 industrial accidents reported to SOCSO by the year 2003, 4,654 were recorded in the construction industry. From this figure, almost 2.0 percent or 95 cases resulted in death, while 12.2% or 566 cases resulted in permanent disabilities. There many issues involved in implementing safety and health management in construction project. Almost all of the occupational injuries are preventable through measures including strengthened safety regulations, safety training, better planning and engineering controls, awareness, and cooperation among industry stakeholders. Such efforts should focus on high-risk areas for construction workers [7].

Besides that, efforts to increase awareness of employers, employees and the general public on the need for a safe workplace with no health hazards require diligent efforts and the participation of numerous parties. Effective safety can only be achieved when there is a proper management of the interaction between technological systems and people. Accidents in the workplace do happen when the “people” elements tend to engage in safe and unsafe behavior according to their interpretation. The prime motivation of safety culture is the recognition that attitudes and behaviors of employees are crucial to safe behavior at work [8].

Awareness of contractors on Occupational Safety and Health (OSH) management systems also one of important things to be consider to make sure all of projects can be done successful without any problems such as accidents and injuries at construction site. The lack of awareness of contractors on Occupational Safety and Health (OSH) management systems in construction capable contribute to the accident at construction site. Many of the injuries at the workplace are a direct result of the attitude and actions of the individual themselves [8]. Besides that, the high rates of injury are primarily due to inadequate or non-existence of an OSH management systems. Many occupational accidents and injuries are due to a breakdown in the existing OSH management system [9].

Due the above problems, this research will be done to study the level of awareness of contractors on Occupational Safety and Health (OSH) management systems in construction industry. Many occupational health and safety professionals believe that the application of effective occupational health and safety management systems will lead to a better OHS performance [10].

## 4 Methodology

This research will involve compilation from primary and secondary sources, which some are featured for literature review and obtain the data. The secondary data consists of information that was retrieved from journal, magazines, references books, articles, websites and other sources of information. The process of collected the primary data which through the questionnaire distribution. At least 50 questionnaires distribute to class A contactors in Kelantan that registered with Pusat Khidmat Kontraktor (PKK). Data was collected using a self-administered questionnaire. The data collected from questionnaire survey was then analyzed using the Statistical Package for Social Sciences (SPSS). The questions asked in the questionnaire are based on a likert scale and open ended question. Likert scale questionnaire require each respondent to rate the statement on a 5-point. Such as scale 1 = least important, scale 2 = not important, scale 3 = average, scale 4 = important, and scale 5 = very important.

## 5 Result and Discussion

Table 1 shows that, the highest percentage of respondents answered this questionnaire are from the company established for 5-10 years which represent 35.3% (12). While the lowest percentage is the company establish for a period less than 5 years which represent 2.9% (1). It is due to the fact that, they were new in the construction industry, so that they have a reason for not complying with the OSHA provisions because they have less knowledge about safety in construction industry.

Respondents that obtain from distribute the questionnaire is 100.0% answer yes that their company have experience with safety and health regulations. From the analysis that shows in table 2, it can be conclude that most of the respondents are aware and have an experience with the OSHA regulations. Means that, there are no reasons to ignore the compliance of safety and health regulations at construction site and they have to give full commitment to comply with the OSHA provisions.

**Table 1:** Years of establishment of companies

		Size of company			Total	Percentage
		Big	Medium	Small		
Years	Less than 5 years	0	0	1	1	2.9%
	5-10 years	0	11	1	12	35.3%
	11-15 years	1	9	0	10	29.4%
	Over 15 years	7	4	0	11	32.4%
	Total	8	24	2	34	100.0%

**Table 2:** Company experience with Safety and Health regulation

Company Experience with	Yes	34	100%
Safety and Health regulation	No	0	0%

## 5.1 Focus on policy

Table 3 shows the level of awareness of contractors on Occupational Safety and Health Management Systems (OSHMS) in construction industry that focus on policy. Based on the table, most of them aware training for the employees are very important (4.50). In order to minimize the risk of accidents and hazards, the well trained is important to provide to the workers especially to the new workers. It followed by the compliance to legal requirements with score means (4.32). Based on the result, the respondents say that compliance to legal requirements is important. While, the respondent's aware that adequate and appropriate resources are also important with score means (4.29).

The lowest level of awareness of contractors on OSHMS is employee involvement and consultation regarding Safety and Health Management System with score mean is (4.05).

**Table 3:** Level of awareness of contractors on OSHMS focus on policy

No	Statement	Mean	Std
1	Training for employees	4.50	0.826
2	Compliance to legal requirements	4.32	0.638
3	Adequate and appropriate resources	4.29	0.906
4	Equipment inspection and maintenance	4.26	0.898
5	Practices the Safety and Health Program and continuous monitoring	4.18	0.904
6	Employee involvement and consultation	3.76	0.819

## 5.2 Focus to organizing

Table 4, shows the level of awareness of contractors on OSHMS focus to organizing. The highest score means (4.26) of the respondents aware and agree that cooperate in the event of any problems on site are important. It is important in order to minimize risk and accident on site. Furthermore, the respondents also aware that the workers need to have knowledge to use all equipment are important with score means (4.24). Further, having effective communication also is important. The result in table shows that highest percentage is 55.9% of the respondents respond that it is important to be practice in the organization. Besides that, from the result that found out 50.0% of the respondents responds that organizational rule that serve as a guidelines to employee behaviour on an activity that is frequently a very critical risk are average.

**Table 4:** Level of awareness of contractors on OSHMS focus to organizing

No	Statement	Mean	Std
1	Cooperate in the event of any problems on site	4.26	0.666
2	Workers have the knowledge to use all equipment	4.24	0.654
3	Having effective communication	3.94	0.736
4	Have a good organizational	3.94	0.600
5	Have proper Occupational Safety and Health documentation	3.68	0.684
6	Organizational rules	3.53	0.706

## 6 Conclusions

The aim of this research paper is to determine the level of awareness of contractors on Occupational Safety and Health (OSH) management systems. The findings have demonstrated that most of the Class A Contractor in Kelantan aware that the occupational safety and health management system are important and should be practiced to achieve zero accident and death on site. Only a few contractors in Kelantan that still underestimate and not concerned about the importance practice of OSHMS in construction industry. Overall, the safety and health awareness can be improved among the contractors. Besides that, the contractors are required to comply with contract specific OHS requirements.

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