

Appraisal of Management Understanding of Safety Management System at Construction Sites

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Abstract

Safety management is associated with policies, objectives, procedures, methods roles and functions that aim at controlling hazard and risks in socio-technical system. The commitment of the management toward safety management system can manifest itself into job training program, management participation in safety committee, consideration of safety in job design and review of the pace of work. The aim of this study is to assess the level of understanding of safety management system among manager of safety and health in construction site. A structured questionnaire contain in the construction industry standard CIS 10:2008 were used to interview the management personnel at five different sites within Kuala Lumpur. The average scores of the five sites will justify the level of understanding with the aid of star ranking. The result reveals a good number of management personnel have knowledge and understood all the potential and significant issues contain in the OSH management system practice in their sites, but still there is need for improvement on the knowledge of safety management system. As such the study recommended that in order to improve on the existing knowledge of the management personnel, adequate training program should be incorporated in to the organizational action plan.

Keywords: Management, Training, Safety, Health, Program, Standard.

Introduction

Safety management is all about remaining safe at workplace. Safety management system according to [1] is usually regarded as a sub-system of the total organizational management and is carried out via the organization's safety Management system with the help of various safety management practices. Many researchers like [2, 4,5,7, 11,13,14] revealed that organizations with lower accident rates were characterized by a few of the following factors: safety officers held high rank; management showed personal involvement in safety activities; higher priority for safety in meetings and decisions concerning work practice; more frequent attendance of senior managers at health and safety meetings etc. In any case safety management according to Reiman and Rollenhagen (2011), is associated with the policies, objectives, procedures, methods, roles and functions that aim at controlling hazards and risk in socio-technical systems. Also, [17], that the commitment of the management toward safety management system can manifest itself through job training program, management participation in safety committee, consideration of safety in job design, and review of the pace of work. The objective of this paper is to assess what safety management system means to the management of health and safety and to determine their level of understanding of safety management system in workplace. This study will allow management to realise their potential better, help many researchers in framing an inspiring research questions and make adequate research design for further improvement for management in understanding the dynamics and potential improvement needed for organizations and to strengthening its social innovation. The attitude of management towards the issue of safety management system has had a major role in accident contribution. [1], that various studies have attributed the following factors to workers injury; Supervisor's attitudes, actions, Supervisor's tasks that include safety, Senior management and workers involvement in safety issues, Organisation's commitment to safety and willingness to solve safety problems etc. The accountability and responsibility in the safety and health at construction sites is the function of the senior management as required by the Occupational Health and Safety Act of 1994. In a study conducted by [9] in Kuala Lumpur and Selangor, reveal that ignorance and lack of safety compliance from the management had caused employees to violate the safety procedure and the outcomes were unsafe

acts, hazardous condition, injuries and accident. Also, that the awareness on the importance of safety compliance among construction companies is low.

According to perceived organisational support theory, (POS) employees develop global beliefs about the extent to which their employer values their contributions and is concerned about their well-being [6]. In their review of the POS literature, [10] identified three sets of antecedents of POS: fairness, supervisor support, and organizational rewards and working conditions. Each of these represents some type of favourable treatment or valuation from the organization. The management of organisation provides support to the kind of organisational structure that will ensure effective site safety management. The company's management will ensure that training; personal protective equipment (PPE) and other resources are provided to the project management team in order to demonstrate its commitment. To be successful in safety program implementation, James *et al* (2008), has this, that there must be an understanding of the operation "linking pin" of the management commitment, leadership, and the employee participation. The work place is not linear, where one action, or decision lead directly to another. Having good intention is not enough as there are many professional discipline that are always demanding the attention, time and budget of management.

Material and Method

A structured or standardized questionnaire were used in the management personnel interview at 5 different construction sites i.e. the construction industry standard (CIS), refer to as CIS 10:2008. The CIS was developed by the Technical committee on Safety and Health in construction with the assistance of construction industry development board (CIDB) Malaysia which acted as a moderator and facilitator for the technical committee throughout the process the standard. Management personnel questions were developed as safety and health in construction as among employees interview contain in the CIS. For effective application of the management personnel questionnaires at sites, the five construction sites are; building/ civil engineering construction sites, its contract price is above 20 million Malaysian Ringgit and the progress of the work is between 25% - 75% completion. In the management personnel interview there are 40 questions for the five sites, and the project managers of each site were interview. This interview will provide an understanding of the management as regard OSH programs implemented, enforced and practiced at sites/workplace. The following formula was used to determine the percentage level of understanding of OSH management system among the management personnel;

$$\frac{\text{Total number of 'C' scored} \times 100}{(60 - \text{Number of 'NA'})}$$

=% level of understanding.

Where, C = obtained scores, NA = not applicable.

The percentage level obtain is interpreted from the star ranking table 1.

Basic criteria

The following were the basic criteria consider in the management personnel interview as contain in standard questionnaire of employees interview, refer to as CIS 10:2008;

- a- OSH policy, whether the management personnel (project manager) can be able to describe the statement of the intention of the top management as regard to their obligation toward OSH matters and also to confirm the type of the system adopted by their organization such as OHSAS 18001, OSH MS 1722, ILO OSH MS 2001, ASNZS 4801:2002 OHS MS.
- b- OSH organization, to determine the kind of organizational system had been practice in the organization and responsibility of each person on the chart most especially those of the safety and health committee organizational chart.
- c- HIRARC (hazard identification, risk assessment, risk control.), to determine their understanding of HIRARC and to know their involvement in the HIRARC excesses.
- d- Training and Promotion, to verified management personnel attendance of any formal safety training and to confirmed the answer with certificate or training attendance list or other record.
- e- Material Management, to determine their understanding as regard to Occupational Safety and Health {USECHH (use and standards of exposure of chemicals hazardous to health)}

- and {CPLHC (classification, packing and labeling of hazardous chemical)} regulation under OSHA 1994.
- f- Emergency Preparedness, to determine their understanding of what to do in an event of emergency/action to be taken in an event of an accident.
 - g- Accident Investigation and Reporting. Their understanding of the procedure of accident investigation and reporting, and how to comply with NADOPOD (notification of accident, dangerous occurrence, occupational poisoning and occupational disease) regulation.

Result and Discussion

The result of Management interview conducted in five construction sites selected were show in table 2. The result shows that site A and D scores 100% which means that the management personnel in those sites have full knowledge of OSH management system. While site B has the lowest scores with just 28.57%, a poor result that the management personnel on the site need to improve on their knowledge on OSH management system at construction sites. On average, the scores from the five sites as regard to management personnel interview is 70.71%. The 70.71% fall within 70 – 84 in star ranking and qualified the management knowledge as 4-star. This is a good result as virtually all the management personnel in the construction sites understood all the potential and significant issues contain in the OSH management system practices in their sites. Table 3 shows the combined scores of the management personnel interview from the five sites. The table provide the difference between the obtained scores and total scores of each of the component and this will enable the management to identify the components that the management need improve upon. And figure 1 shows the performance of various components considers for the interview in a chart form in relation to the total scores.

The total scores of the five sites is 60 and the five sites scores 43. From table 3 Training and Promotion score below average i.e 2 out of 5. Other components that need minor improvement are; HIRARC with 10 out of 15, material management with 6 out of 10. Others need slight improvement. If accident free zone is to be achieved at construction sites, the management most have a full knowledge of the kind of OSH management system practices in their sites.

Conclusion and Recommendation

Understanding of the OSH management system practice at a construction sites most especially by the management personnel is vital to the growth and success of an organisation, as it will aid in maintaining accident free sites. This study identified 7 basic criteria for interviewing management personnel in site. The result reveals a 70.71% level of understanding of the OSH management system practice at the sites among the management personnel, which is encouraging i.e good result. In conclusion, the management personnel have virtually all the potential and significant knowledge of the OSH management system practice in their sites, but still there is the need for improvement in the knowledge of understanding among the management personnel as regard to the safety management system. This study therefore, recommended that in order to improve on the knowledge of OSH management system on sites adequate training program should be incorporate into the organisational action plan. Such training program organised by construction industry development board (CIDB) Malaysia and national institute of occupational safety and health (NIOSH) Malaysia could be of great help in improving the knowledge of OSH management system among the management personnel.

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Table 1: Stars Ranking

SHASSIC (score %).	Star(s) Awarded	Justification
85 to 100	*****	Potential and significant workplace high risks/hazards are managed and documented.
70 to 84	****	Potential and significant workplace high risks/hazards are managed and documented but there are few low risks work activities are neglected.
55 to 69	***	Potential and significant workplace high risks/hazards are managed and documented but there are few medium risks work activities are neglected.
40 to 54	**	Potential and significant workplace high risks/hazards partly managed and not properly documented.
39 and less	*	Potential and significant risks/ hazards poorly managed and not properly documented.

Source: CIDB CIS 10: 2008.

Table 2: % scores, management interview from the five sites.

Site A.	Site B.	Site C.	Site D.	Site E.
100%	28.57%	66.67%	100%	58.33%

Table 3: Combined scores from the five sites. (Management personnel interview).

Components	Obtained scores	Total scores
OSH policy	8	10
OSH organisation	9	10
HIRARC	10	15
Training and Promotion	2	5
Material Management	6	10
Emergency Preparedness	5	5
Accident investigation and reporting.	3	5
TOTAL=	43	60

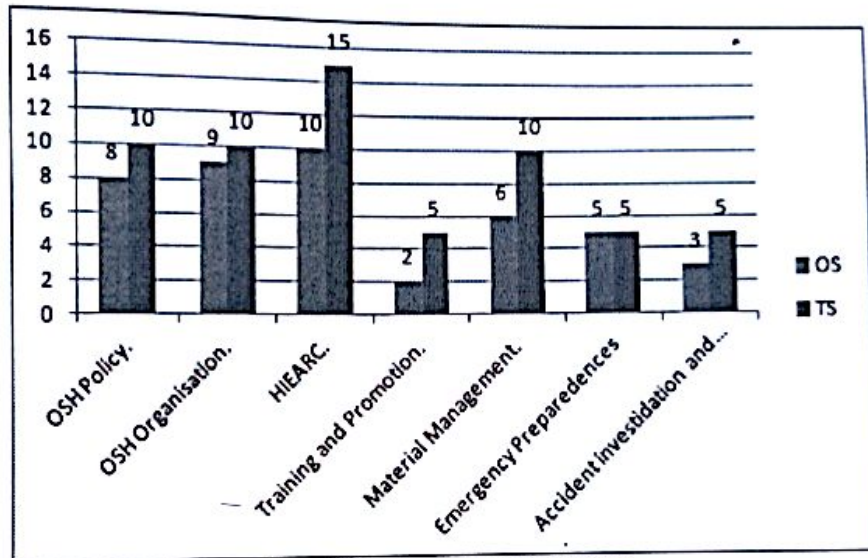


Figure 1: Bar chart of combined scores.