

**STUDY ON PROMOTE OCCUPATIONAL SAFETY AND
HEALTH PRACTICES IN CONSTRUCTION PROJECTS**

EBRAHIM AWADH MUBARAK BIN SHAHNA

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DEDICATION

This thesis is dedicated to my beloved parents, may Allah preserve and nurture them, to my support in live brothers and sister, to my dearest thing that I have my daughters Ruba & Rim ,to my lovely wife for tremendous love, care and courage during the cause of my studies and journey to produce this thesis.



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ABSTRACT

The unsatisfactory OSH record of the construction industry has always been highlighted. It is because the OSHP system is a neglected area and a function that has not been pursued systematically in the construction industry. Safety is an important issue, but many employers do not feel it is vital to the success of companies. For a long time, the construction industry has been labeled as with poor OSHP and performance, which needs stern attention and in-depth research to put forward solutions to this issue. The objectives of this research are to investigate problems of OSHP in construction projects, to study the benefits of OSHP in construction projects and to recommend measures to promote OSHP in construction projects. The research was take place in Johor Bahru the capital of Johor State. The research based on quantitative research by using questionnaire to carry out the research. The questionnaire was designed based on the objectives each objective has ten statements with one option, in order to get accuracy results. A total of 67 questionnaires were gathered from a total of 217 contractors of G7 distributed at Johor Bahru, where the respondents were project manager, site supervisor, safety officer and site engineer. Data collected was analysed using the Statistical Package for the Social Science 22.0 software. The method of analysis that had being used in this research is percentage, frequency and means score value. The study proves that there are OSHP problems faced by contractors; workers' attitude (3.85 of mean value), insufficient budget allocated (3.69), lack of enforcement of safety policies (3.64). Moreover, there is high benefits of OSHP when its implement well; increase responsibility(97% percentage of yes answer), higher on employees morale(92%), build a positive work place environment(88.1). Furthermore, majority of the respondents agreed to the recommendation provided by the study to promote OSHP; management Penalties(4.36 of mean value), provision of necessary safety gears(4.36), allocate a sum of money resources(4.25). In conclusion, this paper will be beneficial to practitioners and academicians who study the practices of safety and health and work in construction site in order to improve the implementation of safety and health practices in the construction industry.

ABSTRAK

Rekod OSH yang tidak memuaskan industri pembinaan selalu ditonjolkan. Ia adalah kerana sistem OSHP adalah kawasan yang diabaikan dan fungsi yang tidak dijalankan secara sistematik dalam industri pembinaan. Keselamatan adalah isu penting, tetapi banyak majikan tidak merasa penting untuk kejayaan syarikat. Untuk masa yang lama, industri pembinaan telah dilabelkan sebagai OSHP yang lemah dan prestasi, yang memerlukan perhatian tegas dan penyelidikan mendalam untuk mengemukakan penyelesaian kepada isu ini. Objektif penyelidikan ini adalah untuk menyiasat masalah OSHP dalam projek pembinaan, untuk mengkaji manfaat OSHP dalam projek pembinaan dan mencadangkan langkah-langkah untuk mempromosikan OSHP dalam projek pembinaan. Kajian ini dijalankan di Johor Bahru, ibu negeri Johor. Penyelidikan ini berdasarkan kajian kuantitatif dengan menggunakan soal selidik untuk menjalankan penyelidikan. Soal selidik itu direka berdasarkan objektif masing-masing mempunyai sepuluh kenyataan dengan satu pilihan, untuk mendapatkan hasil ketepatan. Sebanyak 67 soal selidik telah dikumpulkan dari 217 kontraktor G7 yang diedarkan di Johor Bahru, di mana responden adalah pengurus projek, penyelia tapak, pegawai keselamatan dan jurutera tapak. Data yang dikumpul dianalisis menggunakan pakej statistik untuk perisian Social Science 22.0. Kaedah analisis yang telah digunakan dalam kajian ini adalah peratusan, kekerapan dan nilai skor nilai. Kajian membuktikan terdapat masalah OSHP yang dihadapi oleh kontraktor; Sikap pekerja, Anggaran tidak mencukupi diperuntukkan, Kurangnya penguatkuasaan dasar keselamatan, kurang sokongan pengurusan, dan lain-lain. Lebih-lebih lagi, terdapat manfaat yang tinggi dari OSHP apabila dilaksanakan dengan baik; Meningkatkan tanggungjawab, Kesan terhadap semangat pekerja, Membina tempat kerja yang positif Persekitaran, Mengurangkan kadar ketidakhadiran, Menghapuskan kecederaan dan kematian, dan sebagainya. Tambahan pula, majoriti responden bersetuju dengan cadangan yang disediakan oleh kajian ini untuk mempromosikan OSHP; Penalti Pengurusan, Penyediaan gear keselamatan yang diperlukan, Memperuntukkan sejumlah sumber wang, Penghargaan dan motivasi pengurusan, dan lain-lain. Kesimpulannya, makalah ini akan memberi manfaat kepada pengamal dan ahli akademik yang mempelajari amalan keselamatan dan kesihatan dan bekerja di tapak pembinaan dalam rangka untuk meningkatkan pelaksanaan amalan keselamatan dan kesihatan dalam industri pembinaan.

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CHAPTER 1

1.1 Introduction

In the construction industry, workplace accident is cannot be avoided and it can be cost billions of money each year (Shamsudin, 2016). Nowadays, all organizations in Malaysia should be exposed to Occupational Safety and Health Practices (OSHP) to avoid accident in the workplace because the accident happen in the workplace can affect operation of business around the world (Hamid, 2015).

Occupational Safety and Health Practices (OSHP) are the strategies, policies, activities and procedures that can be implementation by the organization targeting safety of their employees (Vinodkumar, 2010). Safety and Health Practices may reduce the chances of an accident happen in the construction workplace (Hamid, 2015). Prevention of accidents can be prevented by the existence of awareness among employees, industry and wider society. Company that provides a well OSHP can affect employee to enhance their safety performance in workplace. In addition, a good OSHP apply in the organization will reduce the accident rate and also led a lot of positive impacts for the organization (Huang & Fang , 2003).

1.2 Research Background

According to International labour Organisation (2003), approximated 6,300 people die every day, more than 2.3 million deaths a year and 317 million accidents occur each year as a result of misuse of safety and health policies in construction projects. Because of these erroneous policies lead to huge humanitarian losses, in addition productivity losses to work, economic burdens do not harm the individual, but the country in general. At the global level, four per cent of Gross Domestic Product GDP is lost due to poor safety and health procedures and practices in projects and is

considered to be the direct loss of unsafe and unhealthy working conditions. In principle, indirect losses are estimated to be two to three times the direct losses of unsafe and unhealthy labour policies that may increase the global share of lost GDP (ILO, 2003).

According to International Labour Organization (ILO, 2003) allocates occupational safety and health (OSH) as a conclusion to the comprehensive protection of workers from diseases, injuries and illnesses resulting from the work environment. The ILO adheres to the idea that it is necessary to respond to workers views and to have equal status with those of other stakeholders in the workplace in order to ensure proper results and work. safety and health in the work environment are important to ensure that people are not distracted during work, and to avoid injuries, suffering and loss of life. The lack of injury to people ensures an increase in the working life of employees and works to increase economic growth and prosperity. The benefits of practicing occupational safety and health in work projects enable people to live more well off lives , strengthen economic activity of the country, reduce demand for social and health services, and reduce disease and injury losses at all individual and community levels (Khalid, 2010 & Ragheb, 2010).

The development of occupational safety and health practices in construction projects given benefit for all levels in the community. It is before clarifying the guidelines of the principles of occupational safety and health by the International Labour Organization (ILO). In 1959, employers were not interested in safety and health requirements of their employees (Khalid, 2010). Safety and health tools are also not available by employers and as a result many of their employees have received several degrees of injuries during work. Sometimes, the injured person had to apply a complaint for compensation for the loss, but he often did not respond to those requests. In contrast, the costs of making those requests made most of the affected employees refrain from pursuing such compensation in court. The ILO made a set of specific recommendations on the establishment of specific occupational safety and health services in companies aimed at enhancing the concerns of safety and health personnel. These recommendations include, employment protection against any form of health damage and participation in the physical and mental adjustment of the labour force. All industries in Malaysia, private and government organizations, have had to comply with the Occupational Safety and Health Act 1994

to fulfill their responsibilities as employers to ensure that workers have a safe workplace (Ragheb, 2010).

Based on a study by the Malaysian Ministry of Human Resources (2006), the reasons given by employers for the increased numbers of accident from 1998 (85,338) to 2000 (95,006), includes: (1) not being aware of the Occupational Safety and Health Act 1994; (2) no time for Occupational Health and Safety (OHS) matters; (3) insufficient allocation of resources for OHS; (4) OHS is not an important element in business; and (5) the “accidents will not happen to me” syndrome. As for employees, their noncompliance was basically due to reasons such as (1) not aware of health and safety rules and regulations; (2) OHS rules and regulations are difficult to follow; and (3) feelings of discomfort when complying with OHS rules and regulations. Even worse was the common belief that “accidents will happen, no matter what” instead of “accidents can be prevented if the right precautions are taken” (Malaysian Ministry of Human Resources, 2006). Furthermore, the Human Resources Minister, also stated that many employers and employees perceive safety in the workplace as something "forced" upon them by legislation and said that “at present, Malaysia has still not reached a stage where safety and health concerns are adopted as part of the working culture” (Carvalho, 2008).

In addition, the Department of Occupational Safety and Health (DOSH), a government enforcement agency, stated that compliance with the Act and its regulations still needs significant improvement. Due to limitations of manpower, DOSH only managed to comprehensively enforce legislation in certain sectors such as manufacturing, construction, mining and quarrying. In other sectors, DOSH's enforcement has been reactive, such that it was conducted based on imminent issues, complaints or accidents (Malaysian Ministry of Human Resources, 2006). As a result, DOSH needs to carry out inspections on organizations to find out how well they have complied with the legislation and ascertain if the health and safety requirements of their employees at the workplace are being met (Cruetz, 2006). The Occupational Safety and Health Act 1994 requires employers to perform minimum duties to ensure the safety, health and welfare of their workers, and joint responsibilities between employer and employees in government organizations are expected to ensure safety in a workplace (Almeida, 2006).

Moreover, the scenario of OHS management systems in Malaysia shows that since 1999, OHSAS 18001 has been the only OHS management system being

implemented with 268 companies certified to this system (SIRIM, 2009). Most transnational companies operating in Malaysia have their own OHS management systems, the government developed the Occupational Safety and Health Management Systems – Malaysian Standard, based on the ILO standards, in 2003. Until 2005, OSH-MS1722 was introduced but so far only private organizations are certified to the standard.

1.3 Problem Statement

The construction industry tends to have a low awareness of the long-term benefits of safety practices, while the tendering process often gives little attention to safety, resulting in cost and corner cutting (Biggs et al, 2005). Sometimes, safety is found to be the first item to face cost cutting. This is because some of the employers often believe that the implementation of OSHP system will cost more. In Malaysia, people are still not much aware about the safety and health for the worker on construction industry. They are lack of knowledge on safety consciousness. Several studies shown that, employer is little or no attention to employee safety and health (Othman, 2012).

Nowadays, we are always hearing that the accident cases are happened in construction industries (Gillespie, 2016). According the statistic of Occupational Accidents by Sector until December 2015 from DOSH, the number of construction industrial accidents is considerably high than other sectors. The result showed that the number of accidents in construction sector was increased 374 victims from 2014 to 2015 in Malaysia (DOSH, 2015). Accidents at work places will impact negatively on countries and the organizations such as the loss of life, property or damages (Chan et al., 2010). The accident will always happen because of poor or do not care to act on Occupational Safety and Health Practices (OSHP) in several companies (Shamsudin, 2016). Therefore, the application of an 'effective' OSHP can lead to safer systems of construction and reduce incidence of injuries and work related diseases (Roelofs et al., 2011). Thus, we can conclude that OSHP in construction industry are very important to be prevents and eliminate the accidents or injury in the workplace (Shekh, 2015).

1.4 Research Question

Based on the problem statement, several research questions have been posed which are:

1. What are the problems of occupational safety and health practices in construction project?
2. What are the benefits of occupational safety and health practices in construction projects?
3. What are the measures to promote occupational safety and health practices in construction project?

1.5 Research Objectives

To achieve the aim of this study, the following objectives have been set:

1. To investigate the problems of occupational safety and health practices in construction project.
2. To study the benefits of occupational safety and health practices in construction projects.
3. To recommend the measures to promote occupational safety and health practices in construction project.

1.6 Scope of Study

This scope of study is construction industry in Johor Bahru. In this study conducting of questionnaire survey was adopted. The respondents involved in data collection are limited to the construction practitioners under G7 aware of content and who have an experience in the construction industry. Besides that, the respondents involved in this study are project manager, site supervisor, safety officer and site engineer as well. Furthermore, this study will identifies the expert opinion for problems affecting occupational safety and health practices in Malaysian construction projects. Since the aim of this study is to recommend the measures to promote occupational safety and health practices in the Malaysian construction industry. The location chosen is Johor

Bahru to investigate as a one of big Malaysian cities. Johor Bahru is earning most of construction project among Johor state compare to other cities in Johor.

1.7 Significance of Research

This study contributes to the body knowledge and study by:

- i. Investigating about the problems of OSHP in construction projects.
- ii. Give the responsible parties in construction industry to know about the benefits of OSHP in construction projects.
- iii. Suggesting measures to promote OSHP in construction projects.

1.8 Research Methodology

The aim of the study is to recommend the measures to promote occupational safety and health practices on construction sites in Johor Bahru. To achieve this, use literature review that focuses on similar past research studies and helps in the identification of factors and categories, research methodology and analysis of data. The method of collecting data will be adopted quantitative research method involving data collection through structured questionnaire survey. Survey will care out amongst potential respondents, project manager, site supervisor, safety officer and site engineer.

Data was be collected from large construction firms that are based in Johor Bahru, which choice randomly from the registered list of the Construction Industry Development Board of Malaysia (CIDB) under Class G7 (tendering capacity of more than 7 million Ringgit Malaysia). A structured questionnaire as the instrument was been used to collect primary data for the study. Analysis of the data was been carried out using SPSS 22.0 data analysis software in assessing the strength of each factor affecting construction performance. The demographic details of the respondents were produced and the mean ranks of the identified measures to promote OSHP were used for the ranking in the analysis. The reliability test was conduct to test whether the quality of data is reliable or not. The cleaned data were then analyzed to obtain frequency, percentage.

1.9 Thesis Structure

The study consists of **FIVE (5)** chapters. The chapter's organisation are as follows:

(i) Chapter 1: Introduction

This chapter consists of introduction to research, background of research, problem statement, research questions, research objectives, scope of research, significance of research.

(ii) Chapter 2: Literature Review

This chapter discusses the review of previous researches on the problems of occupational safety and health practice and also the benefits of OSHP in construction projects. Measures to promote OSHP in the construction industry are presented in detail. Gaps are identified, and how this research is signed to fulfill in these gaps is discussed.

(iii) Chapter 3: Research Methodology

This chapter explains the methodology used in this study. It includes details of the method of data collection and analysis. The rationale of the quantitative (questionnaire) methods chosen for data collection is also presented. In addition, this chapter presents the data analysis techniques of ranking of mean, frequency, percentage and reliability test: and the statistical of SPSS 22.0 software packages used in this study.

(iv) Chapter 4: Data Analysis and Finding

This chapter explains data analysis from quantitative using questionnaire survey, and further discussion in detail data analysis. Finally, findings are highlighted accordingly.

(v) Chapter 5: Conclusion and Recommendations

In this chapter, conclusion is draw out and the limitations of the research will highlight. Furthermore, this research will discuss the finding and provides recommendations for future research.

1.10 Conclusion

This chapter describe briefly the whole study will be carried out. The main focus in this chapter is comprises of the research problem ,the research objectives and significance of the study were elaborated explained . In addition, this chapter describe the scope of study and methodology of the study data among the respondents while, the research methodology describe about the method that will be used to obtain information from respondents in study area inside Johor Bahru city .The detailed explanations of the above items pave the way for the sequent chapters.



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CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter provides a theoretical and empirical review on the concept of occupational safety and health practices in Malaysia with an overview of its problems, benefits and the Strategies to reduce problems in Safety and health Practices. The essence of this chapter is to review studies conducted by researchers under this area and possibly identify issues that are left out.

2.2 Occupational Safety and Health (OSH)

In 1950s, a common definition of occupational health was adopted by the Joint ILO/World Health Organization (WHO) Committee on Occupational Health as its first session was revised at its twelfth session in 1995 with the goal of all OSH programs is to foster a safe work environment. OSH is a basically standard which is set in legislation that aims to eliminate and reduce hazards at workplace. The OSH primary focuses on policies that include the compliances with government guidelines, regulations and laws.

According to Levitt & Samelson (1993), OSH is an interdisciplinary field which encompasses among the disciplines of industrial hygiene, occupational medicine, engineering, epidemiology and toxicology that includes the surroundings, related person and employees condition. OSH involved of all the interactions, which can protect employers, employees and public who are affected by the workplace environment.

Concept of OSH has significant importance where the healthier and safer working environment was very widespread and appreciated in industries to have more standardized OSHMS. In preventing diseases and injuries, the failures to

acknowledge are important in limiting the effectiveness of interventions (Lahiri et al., 2005 and Toffel & Birkner, 2002).

In reducing the risk at workplace, OSH is an important aspect which emphasizes the discipline that concerned on preserving, protecting human and facility resources. There are laws to protect the employees whereby employers must choose to ignore any concern (Laws of Malaysia, 2000). It is mandatory for all companies to provide a safe and conducive working environment for their employees as stated in the OSHA (1994).

According to OHSAS:18001 (2007), OSH means the conditions or factors that affect the temporary employees, contractor personnel's, visitors and any other person at the workplace. OSHMS is a part of the overall management system that facilitates the management of OSH risks and maintaining the OSH organization's policy.

2.3 Review the Laws and Acts Related to Occupational Safety and Health (OSH) in Malaysia

In Malaysia, the role of OSH was existed since 130 years ago. According to the DOSH (2010), the development of safety and health at workplace can be categorized into five eras; (1) Steam Boiler Safety Era took place prior to 1914 (2) Machinery Safety Era took place from 1914 until 1952 where Machinery Enactment 1913 replaced the various steam boiler enactments of Allied Malay States on 1st January 1914 (3) Industrial Safety Era took place from 1953 until 1969. In 1953, the Machinery Ordinance 1953 was enacted to replace all previous legislations.(4) In 1967 the era was called the Industrial Safety and Hygiene Era where, the Parliament had approved the Factory and Machineries Act (FMA 1967). Beginning in 1970, the Factory and Machineries Act 1967 and eight of its regulations were enforced replacing the Machinery Ordinance 1953. In 1980, the application of the Factory and Machineries Act 1967 was extended to Sabah and Sarawak (5) Since the year 1994, it is the OSH Era where the Parliament passed a new legislation known as the OSHA 1994 which was gazette on February 1994.

2.3.1 Occupational Safety and Health Act (OSHA) 1994

According to Soehod & Laxman (2007), Malaysia is the first Asian country to have enacted the safety and health legislation covering all occupations. The OSHA (1994) covers OSH in both private and public sectors which consisting of 15 Parts ,is an enabling measure which is superimposed over existing safety and health legislations. The long term goal of the act is to create a safety and health working culture among all Malaysian employees and employers.

OSHA (referred to as “OSHA” or the “Act”) that came into force on 25th February 1994 and the Act 514 is an enabling Act which is superimposed over existing safety and health legislation such as the Factories and Machinery Act 1967 (Act 139) (Ahmadon et al., 2006). The main goal of this Act is to ensure that the employers provide safe working condition to the employees. It requires employers to perform minimum duties to ensure the safety, health and welfare of employees, and joint responsibilities with employer in government organizations are expected to ensure safety in a workplace (Almeida, 2006).

The aims of this Act (of persons at work) are: (1) to secure safety, health and welfare against the risks that arising out of the activities, (2) to protect person against risks at workplace in arising safety and health out of the activities, (3) to promote an occupational environment that adapted to psychological needs, (4) to provide the means associated OSH legislation may be progressively replaced by a system of regulations and approved industry codes of practice operating in combination with the provisions of this act designed, and (5) to maintain or improve the standards of safety and health.

The OSHA 1994 provides the legislative framework to promote, stimulate and encourage high standards and wide regulations of safety, health and welfare of person at work. Regulations would normally be formulated on the basis of proposals that submitted by NC for OSH or Director General after consultation with tripartite safety and health's organization. As a main act, the promulgation of the OSHA 1994 has made further provisions for securing the safety, health and welfare of any employees’ activity connection that will help in reducing occupational incidents and accidents in Malaysia. It is based on the concept of self-regulation whereby the act

place certain duties on employers, employees, self-employed persons and all in order to prevent the accidents, ill health's and injuries.

Act 514 of OSHA 1994 provides the promotion, co-ordination, administration and enforcement for OSH and have defined the general duties of employers, employees, self-employed, suppliers and this place certain duties and also emphasis on the prevention of accidents, ill health and injury. Regulations have effect on detailing the specific requirements of the legislation by prescribing minimum standards or having a general application or they may define specific requirements related to a particular hazard or particular type of work. Department of Occupational Safety and Health (DOSH) needs to carry out inspections on government organizations to find out how well they have complied with the legislation and ascertain if the health and safety requirements of their employees at the workplace are being met (Cruetz, 2006).

2.3.2 Department of Occupational Safety and Health (DOSH)

The OSHA 1994 is enforced by Department of Occupational Safety and Health (DOSH), a government department under the Ministry of Human Resources Malaysia. DOSH will be ensured through the enforcement and promotional works that employers, self-employed persons, manufacturers, designers, suppliers and employees always practice safety and health work culture, comply with existing legislation, guidelines and codes of practice, in assistance with OSH" implementation and improvement in the workplace.

Through enforcement and promotional activities, it will ensure the employers, self- employed persons and employees practice a good working culture and will formulate and review on OSH and welfare as a basis in ensuring safety and health at work. It is the secretariat to NC for OSH, a council established under section 8 of OSHA 1994. DOSH has its own roles and responsibilities which to become secretariat and give inputs to the NC regarding safety and health, (2) To study, identify and formulate policies and regulations, (3) To analyze and identify steps to control safety and health dangerous encroachments, (4) To review an instrument related to safety and health industrial hygiene instruments and personal protection equipment (PPE).

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