

**THE STUDY OF SAFETY AUDIT  
AT DEPARTMENTS IN HEALTH CAMPUS  
UNIVERSITI SAINS MALAYSIA KUBANG KERIAN,  
KELANTAN**

**By**

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## **ABSTRACT**

The primary purpose of this research was to study the compliance on Occupational Safety, Environment Health, Organization Management, and Occupational Welfare aspect based on OSHA 1994 (act 514), FMA 1967 (act 139), EQA 1974 (act 127), UBBL 1984 and Ministry of Health requirement. The first step of the research was data collection from 42 departments conducted through the safety audit form combining from DOSH, NIOSH, and MOH. Number of 42 from 56 Department in Health Campus USM is done as respondent from Head of Department, Sister and Chief Supervisor. The result of normality test is  $p > 0.05$ . Then there are significant comparisons mean by Occupational Management, Occupational Safety, Environmental Health and Occupational Welfare among 3 Departments that have been categorize. Seconds, comparison means by department among of Occupational Management, Occupational Safety, Environmental Health and Occupational Welfare, Lastly, comparison of mean percentage among 3 categorical departments. The comply sum is as 90.90% from 38 departments and non-complies as 9.09% from 4 departments that are get the low marks in Safety Audit. Conclusion, the result of the study showed that the percentage of compliance is moderate. Therefore the further enforcement on compliance to the act by the legislation authority should be conduct in frame time in order to enhance the great result to identify the hazard of safety and health at work place.



## ABSTRAK

Tujuan utama kajian ini ialah untuk menilai pematuhan 4 aspek iaitu Keselamatan Serkerjaan, Kebajikan Pekerja, Kesihatan Persekitaran dan Pengurusan Pekerja yang telah di diekstrak daripada kombinasi Borang Audit Keselamatan yang dikeluarkan oleh NIOSH, JKKP dan KKM. Keempat-empataspeck ini pula termaktub di dalam OSHA 1994 (act 514), FMA 1967 (act 139), EQA 1974 (act 127), UBBL 1984 and Ministry of Health requirement. Langkah pertama dalam kajian ini ialah pengumpulan data 42 jabatan dari jumlah keseluruhan 56 jabatan. Ketua Jabatan, Ketua Jururawat dan Ketua Penyelia di Jabatan tersebut menjadi responden dalam sesi tinjauan dan temuramah yang dijalankan. Ujian normality dijalankan dan didapati nilai p ialah significant  $p > 0.05$ . Kemudian, dari situ kajian dilakukan untuk melihat perbezaan mean antara Keselamatan Serkerjaan, Kebajikan Pekerja, Kesihatan Persekitaran dan Pengurusan Pekerja diantara 3 department yang telah dikelaskan. Kedua, ujian dilakukan untuk melihat perbezaan mean setiap Jabatan Keselamatan Serkerjaan, Kebajikan Pekerja, Kesihatan Persekitaran dan Pengurusan Pekerja. Akhir sekali ujian dilakukan untuk melihat perbezaan mean peraturan yang diperolehi diantara 3 jabatan yang telah dikategorikan . jumlah keseluruhan pematuhan ialah 90.90% dari 38 jabatan dan yang tidak mematuhi ialah 9.09% dari 4 jabatan yang mendapat markah rendah di dalam Borang Keselamatan. Kesimpulan, keputusan kajian mendapati jumlah mematuhi adalah sederhana. Walaubagaimanapun, penguatkuasaan terhadap pematuhan akta dan perundangan yang melibatkan akta dan peraturan perlu dijalankan secara berkala untuk memastikan keberkesanannya dalam mengenalpasti bahaya keselamatan dan kesihatan di tempat kerja.



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## LIST OF ABBREVIATION

%	Percentage
&	And
<	Less Than
>	More Than
Adm	Administration
ANOVA	Analysis of Variance
CCU	Critical Care unit
D	Department
DOSH	Department of Occupational Safety and Health
EQA 1974 (act 127)	Environmental Quality Act (act 127)
F	Female
FMA 1967 (act 139)	Factory and Machinery 1967 (act 139)
HUSM	Hospital Universiti Sains Malaysia
ICU	Intensive Care Unit
ILO	International Labor Organization
JEPeM	Jawatankuasa Etika Penyelidikan Manusia USM
JKK	Jawatankuasa Keselamatan dan Kesihatan
KRK	Klinik Rakan dan Kakitangan
M	Male
MED	Medical
MOH	Ministry of Health
MRSA	Multi Resistance Staphylococcus Aureus
Neuro	Neurology
NICU	Neonatal Intensive Care Unit
NIOSH	National Institute Occupational Safety and Health
Ortho	Orthopedic
OSHA 1994 (act 514)	Occupational safety and Health 1994 (act 514)
P & B T	Pathology and Blood Transfusion
PEAD	Pediatric
PMA	Perakuan Mesin Angkat

PMT	Perakuan Mesin Tekanan
Post-Op	Post-operative
PSY	Psychiatric
Rad	Radiotherapy
Rehab	Rehabilitation
SHC	Safety Health Committee
SOP	Standard Operating Procedure
SUR	Surgical
UBBL 1984	Uniform Building by Law 1984
USM	Universiti Sains Malaysia
WHO	World Health Organization
USECHH	Use and Standard of Exposure of Chemical Hazardous to Health Regulation 2000

## **CHAPTER 1:**

### **INTRODUCTION**

Every organization had own safety audit method internally and bound with the responsible body to implement the safety audit. Safety audit is an official inspection of an organization's to follow the International Organization for Standardization (ISO) typically done by government body. However there is no specific method that been use in all organization in Malaysia. According to Safety Consultant Australia a safety audit may be conducted against the few following standards OHSAS 18001 for Occupational Health and Safety Management System, ISO 14001 for Environmental Management System, ISO 9001 for Quality Management System, Integrated Management System and Self-Insurance Audits

(Note from *Safety Audit Conduct Against ISO* for Safety Consultant Australia, 2015).

#### **1.2 Study Background**

Malaysia also having their own safety measure based on Department of Occupational Safety and Health (DOSH) that include all aspect such as welfare of the workers, safety and healthy workplace environment based on Occupational Safety Health Act 1994 (act 514). Safety measure on machinery and factory are based on requirement in Factory and Machinery 1967 (act 139), environmental health at workplace based on requirement in Environmental Quality Act (act 127) and safety measure regarding building construction based on requirement in Uniform Building by Law 1984. All these requirement act are



implement in all sector and workplace based on OSHA Act in schedule one (1) accept army or naval based and vessel under sail.

Safety Consultant Australia (2015) recommends that there are eight (8) common elements referred to under this criterion and includes general workplace hazards in auditing there is hazard identification, risk assessment and control next is work environment, noise, plant, electrical, next is hazardous substances, manual tasks, lastly is an information, instruction, training and supervision. However these eight (8) aspects are too general to describe the safety approach at work place.

In order to maintain safety and healthy workplace environment for the workers, facilities and welfare aspect of the worker, the organization should be prioritizing any safety measure as long as practicable. Employer should follow the Occupational Safety Health Act 1994 (514) Part IV: General Duties of Employers and Self-Employed Persons (Section 15) that is it shall be the duty of every employer and every self-employed person to ensure, so far as is practicable, the safety, health and welfare at work of all his employees and without prejudice to the generality of subsection (1), the matters to which the duty extends include in particular (a) the provision and maintenance of plant and system of work that are, as far as is practicable, safe and without risk to health. (b) The making of arrangement for ensuring, so far as is practicable, safety and absence of risk to health in connection with the use or operation, handling, storage and transport of plant and substance. (c) To wear or use at times any Personnel Protective Equipment or clothing provided by the employer for the purpose of preventing risk to his safety and health". (d) So far as is practicable as regards any place of work under the control of th employer or

self-employed person, the maintenance of it in a condition that provision and maintenance of the means of access to and egress from it that safe and without such risk..." (e) The provision and maintenance of a working environment for his employees that is, so far as is practicable, safe, without risk to health and adequate as regards facilities for their welfare at work.

Occupational Safety Health Act 1994 (514) also include the responsible of the employees in Part VI: General Duties of Employees. Section 24: General duties of employees at work. Subsection (1) It shall be the duty of every employees at work: (a) To take reasonable care for the safety and health of himself and of other person who may be affected by his act or omission at work. (b) To co-operate with his employer or any other person in the discharge of any duty or requirement imposed on the employer or that other person by this Act or any regulation made thereunder. Occupational Safety Health Act 1994 (514) also is mentioning the responsible of employer and employees. Therefore both parties should actively involve to create healthy and safely workplace environment. For example if any pollutant or exposure are recognize at work place the employer should provide complete Personnel Protective Equipment to all level of worker and enforcement to wear Personnel Protective Equipment attire.

Then, the employer should provide Occupational Health Doctor to do their medical surveillance at least once in a year for the workers. The measurement and monitoring of contaminant should be done following the NIOSH based on USECHH regulation 2000, and Factory and Machinery Act 1967 requirement. For example, noise exposure regulation 1989. Regulation 5 state that no employee be expose to continuous sound level of >90dB



(A) or exceed limit and regulation 6 is mention of impulsive noise not exceeding noise exposure of an employee to various sound levels. If the finding of exposure monitoring are above the limit value the audiometric testing are require. Therefore, regulation 22 is mention that every year for those exposed to noise level above limit. Two yearly for those exposed to noise at or above action level but less than limit prescribed in regulation 5.

To ensure safe condition of the workplace from any hazard is responsible of all workers and employer. The workers should avoid the unsafe action than can be contribute to unsafe condition. In this situation, employer should provide related facilities as long as practicable for the workers. By doing this, all employees can increase alertness and sensitivity on their environment especially at workplace and take preventive measure such as in safety and health aspect.

### **1.2.1 The Purpose of Conducting Study in Health Campus Universiti Sains Malaysia as Study Population.**

This study is conducted among department in Health Campus of Universiti Sains Malaysia in order to evaluate current status of compliance of requirement in OSHA 1994, FMA 1967, EQA 1974 and Ministry of Health requirement regarding occupational safety, environment health, organization management and occupational welfare at workplace. Based on current condition of government agency in Malaysia, the compliance of Safety Audit is consider as an ongoing process in which not all government agency in Malaysia comply with the regulation and legislation in OSHA 1994. Health Campus Universiti Sains Malaysia consists of more than 40 departments that include the wards, hospital, school,



hostel residency and administration department therefore the chosen of Health Campus of Universiti Sains Malaysia is the pioneer for the safety audit at workplace to be evaluate.

### 1.3 Rationale of the Study

In Malaysia the safety audit regarding health issue especially Vector Borne Disease, Communicable Borne Disease, infection of biological hazard and epidemic is follow the format by Ministry of Health but there is no specification approach on safety, environment and occupational perspective. Safety audit by Ministry of Health are mention more to health aspect. Ministry of Health publishes the scoring standard of safety audit but there is no comprehensive aspect of hazard. Occupational Safety and Health Administration, United States Department of Labor (2015) reported in real situation, the workplace setting are include physical, biological, chemical, ergonomic, safety and work organization. The typical type of hazard is mention in figure 1.3 as below:



Figure 1.3: Typical Type of Hazard.

(Note from *Circle of Hazard* for Occupational Safety & Health Administration, United States Department of Labor, 2015)

Occupational Safety & Health Administration, United States Department of Labor (2015) recommends that every type of hazard has its own unique and specific spectrum measurement. Here, we still need the new method or approach to describe the safety aspect includes all type of hazard. However, American Chemical Society Committee on Chemical Safety (2000) recommends that an audit is a systematic review of operations and practices to ensure that relevant requirements are met. Traditionally, the term *audit* is associated with principles of accounting. Indeed, the safety audit may apply similar methodologies used in financial audits to mitigate safety risks within any facility or operation. Safety surveys frequently reveal potential causes of accidents and, thus, provide an opportunity to take corrective action before an injury occurs. Surveys are conducted at the line or operating levels; audits. Besides, safety audit are a managerial or corporate activity. Safety surveys are effective ways of identifying hazard and preventing accidents. On other hand, safety audits are report cards on the success of safety and health programs, environmental programs, and process safety management. Occupational Safety & Health Administration, United States Department of Labor (2015) describe in details about every type of hazard in table 1.3.1 below:

SAFETY HAZARDS	These are the most common and will be present in most workplaces at one time or another. They include unsafe conditions that can cause injury, illness and death. Safety Hazards include spills on floors or tripping hazards (blocked aisles or cords running across the floor), working from heights (including ladders, scaffolds, roofs, or any raised work area), unguarded machinery and moving machinery parts (guards removed or moving parts that a worker can accidentally
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	touch), electrical hazards (frayed cords, missing ground pins, improper wiring), confined spaces and machinery-related hazards (lockout/tag out, boiler safety, forklifts, etc.)
BIOLOGICAL HAZARDS	Associated working with animals, people, or infectious plant materials. Work in schools, day care facilities, colleges and universities, hospitals, laboratories, emergency response, nursing homes, outdoor occupations, etc. may expose you to biological hazards. Types of secretion may be exposed to include blood and other body fluids, fungi or mold, bacteria and viruses, plants, insect bites and lastly is animal and bird droppings.
PHYSICAL HAZARDS	Are factors within the environment that can harm the body without necessarily touching the appearance hazard? Physical Hazards include radiation: including ionizing, non-ionizing (EMF's, microwaves, radio waves, etc.), high exposure to sunlight/ultraviolet rays, temperature extremes (too hot and cold) and constant loud of noise.
ERGONOMIC HAZARDS	Chemical hazard are present when a worker is exposed to any chemical preparation in the workplace in any form (solid, liquid or gas). Some are safer than others, but to some workers who are more sensitive to chemicals, even common solutions can cause illness, skin irritation, or breathing problems. Beware of liquids like cleaning products (paints, acids, solvents) especially if chemicals are in an unlabeled container, vapors and fumes that come from welding or exposure to solvents, gases (acetylene, propane, carbon monoxide and

	helium), flammable materials (gasoline, solvents, and explosive chemicals) and pesticides.
CHEMICAL HAZARD	Chemical hazard are present when a worker is exposed to any chemical preparation in the workplace in any form (solid, liquid or gas). Some are safer than others, but to some workers who are more sensitive to chemicals, even common solutions can cause illness, skin irritation, or breathing problems. Beware of liquids like cleaning products (paints, acids, solvents) especially if chemicals are in an unlabeled container, vapors and fumes that come from welding or exposure to solvents, gases (acetylene, propane, carbon monoxide and helium), flammable materials (gasoline, solvents, and explosive chemicals) and pesticides.
WORK ORGANIZATION HAZARDS	Hazards or stressors that cause stress (short-term effects) and strain (long-term effects). These are the hazards associated with workplace issues such as workload, lack of control and/or respect, etc. Examples of work organization hazards include workload demands, workplace violence, intensity and/or pace, respect (or lack of), flexibility, control or say about things, social support/relations and sexual harassment

(Note from *Description Hazard* for Occupational Safety & Health Administration, United States Department of Labor, 2015)

It is clear that the Safety Audit should be done continuously and scheduled. This fact is supported by Queensland Hotel Association (2015) recommends that audits are conducted to determine the effectiveness of management systems and to identify the strengths and



opportunities for improvements, with the initial health and safety audit can be used to establish standards against which future audits can be measured. A Workplace Health and Safety audit will also provide an objective outlook of the status of occupational health and safety management within the workplace.

Not all workers can identify perfectly any potential hazard sometime the workers does not know about near miss at workplace. Most common reason of accident at workplace comes from unsafe action and unsafe condition. Unsafe action is contributed from wrong or bad attitude during working time and lack of knowledge or skill of the workers regarding activities process. Unsafe condition of the work area is contributing from incomplete facilities, affect by whether of the surrounding (such as humidity, slippery floor), and job design or route in work area.

### **1.3.1 The Requirement of Factory and Machinery Act 1967 in Occupational Setting**

Factories and Machinery Act (FMA) 1967 or Act 139, is to provide for the control of factories on matters relating to the safety, health and welfare of persons, and the registration and inspection of machinery. Some high risk machinery such as boilers, unfired pressure vessels, passenger lifts and other lifting equipment such as mobile cranes, tower cranes, passenger hoists, overhead traveling cranes and gondolas, must be certified and inspected by DOSH. All factories and general machinery must be registered with DOSH before they can be installed and operated in Malaysia. An act to provide for the control of

factory with respect to matters relating to the safety, health and welfare of person therein, the registration and inspection of machinery and for matters connected therewith. FMA consist twelve safety regulations and five health regulation. There are:

1. Boiler and Unfired Pressure Vessel 1970,
2. Lifting Equipment Inspection and Certificate (PMA/PMT) 1970,
3. Fencing and safety machinery 1970,
4. Person In-Charge who operate factory and machinery 1970,
5. Safety, Health and Welfare 1970,
6. Administration of Factory and Machinery 1970,
7. Certificate of Competency Examination 1970 (revised 1988),
8. Notification, Certificate of Fitness and Inspection 1970 (amendment 2004),
9. Lead 1984,
10. Asbestos Process 1986,
11. Control of the Building Operation and Engineering Safety Work Construction 1986,
12. Noise Exposure 1989,
13. Mineral Dust 1989,
14. Electrical Passenger and Goods Lifts 1970,
15. Compounding Offense Rules 1978,
16. Compoundable Offenses 1978, and
17. Steam Boiler and Unfired Pressure Vessel 2005.

There are requirement specifying for machinery such as steam boiler, prime mover, gas cylinders, gas holder, hosting machine, and tackle, transmission machinery, driven machinery and any equipment for the casting, welding or electro-deposition of metal and

for the spraying by means of compressed gas or air of metal or other material. FMA spell out power of an inspector and obstruction an offense. In FMA also specify duties of person employer and occupier, person in charge, and certificate of fitness of the building or work area such as hanger, yard, ladder, stores etc. All the equipment either static or mobile requires installed machinery to have written approval and certain machinery to have a valid certificate of fitness and periodical inspection by inspector. Under FMA also include the penalty if any person (employer) who commits an offence against these regulation for which no corresponding shall on conviction be liable to a fine.

### **1.3.2 The Requirement of Occupational Safety Health Act 1994 in Occupational Setting.**

OSHA 1994 is an law that provide the legislative framework to secure, health and welfare among All Malaysian workers and to protect other against risk to safety or health in relation with their activities pf person at work stated under OSHA 1994 Part 1 (section 1). This Act is a practical tool cover on existing safety and health legislation. OSHA 1994 is not only to ensure the safety of workers but other people in the workplace also including visitor and indirect workers. Objective of the Act as mentioned in Section 4 there is:

- To secure the safety, health & welfare of person at work against risk to safety or health arising out of the activities of a person at work
- To protect a person at a place of work other than a person at work against risk to safety or health arising out of the activities of a person at work



- To promote an occupational environment for persons at work which is adapted to their physiological and psychological needs
- To provide the means whereby the associated occupational safety and health legislations 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 to maintain/improve the standards of safety and health.

The OSHA 1994 provides the legislative framework to promote, stimulate and encourage high standard of safety and health at work. The aim is to promote safety and health awareness and establish effective safety organization and performance through self-regulation schemes designed to suit the particular industry or organization and by the accumulation of influence and pressure, operating at many levels in a variety of ways. In OSHA 1994 state in details the responsible of employer and employees and their penalty if betray the duty. Therefore OSHA 1994 requirement for all industries:

- |                         |   |
|-------------------------|---|
| ➤ If >5 Employees -     | Safety & Health Policy.                             |
| ➤ ≥40 Employees (S30) - | Safety & Health Policy + Safety & Health Committee. |

For high risk industries (i.e. construction, ship building, gas, chemical, etc.): „

- |                    |  |
|--------------------|--|
| ➤ >100 Employees - | Safety & Health Policy + Safety & Health Committee + a Certified Safety & Health Office. |
|--------------------|--|



For low risk industries (other than the above mentioned industries):

- >500 Employees - Safety & Health Policy + Safety & Health Committee + a Certified Safety & Health Officer.

The long term goal of the Act is to create a healthy and safe working culture among all Malaysian employees and employers as. Lastly, this Act enable previous legislation to be replaced by regulation and approved industry codes of practice operating in combining under OSHA 1994.

(Note from Marwanis, S. Anua (2016) Environmental Health Law, unpublished lecture notes, Occupational Safety and Health Act 1994)

### **1.3.3 Heinrich's Domino Theory of Accident Causation.**

Cleveland State University (2009), according to Heinrich, an "accident" is one factor in a sequence that may lead to an injury. The factors can be visualized as a series of dominoes standing on edge; when one falls, the linkage required for a chain reaction is completed. Each of the factors is dependent on the preceding factor. A personal injury (the final domino) occurs only as a result of an accident. An accident occurs only as a result of a personal or mechanical hazard. Personal and mechanical hazards exist only through the fault of careless persons or poorly designed or improperly maintained equipment. Faults of persons are inherited or acquired as a result of their social environment or acquired by ancestry. The environment is where and how a person was raised and educated. He is the first person recognize the problem of accidental that come from workers behavior and not

from management side (employer) then he come out with the theory of accident and promote control of workers behavior and caused people to think that safety is about policing workers.

The factor preceding the accident (the unsafe act or the mechanical or physical hazard) and it should receive the most attention. Heinrich felt that the person responsible at a company for loss control should be interested in all five factors, but be concerned primarily with accidents and the proximate causes of those accidents. Heinrich also emphasized that accidents, not injuries or property damage, should be the point of attack. An accident is any unplanned, uncontrolled event that could result in personal injury or property damage. For example, if a person slips and falls, an injury may or may not result, but an accident has taken place. If the hazard are failed to be identifying by all workers the severity of minor accident at workplace might be happed. Therefore the safety audit should be implementing in scheduling as first approach for prevention measure.

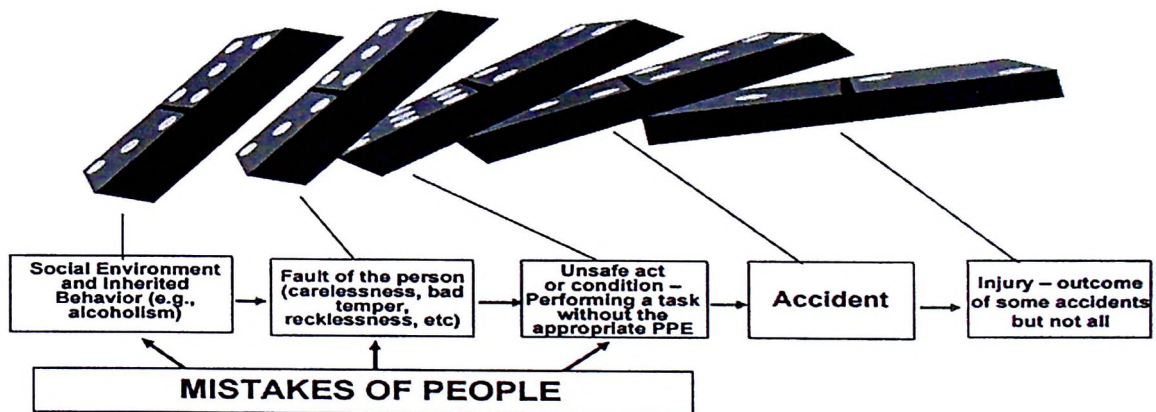


Figure 1.3:2 The First Scientific Approaches to Accident and prevention by H.W. Heinrich

(Note from Cleveland State University, *Work Zone Safety and Efficiency Transportation Center*, 2009)

Heinrich posed his model in terms of a single domino leading to an accident. The premise here is that human errors cause accidents. These errors are categorized broadly as inappropriate worker response to hazards and safety measures (worker's fault) and incompatible work station (management, environment faults) includes physical of lack in knowledge of identifying hazard and psychological factors. He is also describing that inappropriate activities such as lack of training and misjudgment of risk but the structure of this theory is still a cause/effect format. It is also influenced by environmental factors, internal factors, and situational factors. However, Heinrich Domino Theory clearly state that the accident causal at work place come from unsafe action of the workers and unsafe condition at the workplace.

## **1.4 Objectives of the study**

### **1.4.1 General Objective**

To study the compliance on Safety Audit requirement by DOSH, NIOSH, and MOH at Departments in Health Campus Universiti Sains Malaysia, Kubang Kerian, Kelantan.

### **1.4.2 Specific Objectives**

- To determine whether environmental health, organization management, occupational safety, and occupational welfare aspect as mention in Safety Audit form are compliance to every departments.



- To measure of every department with environmental health, organization management, occupational safety, and occupational welfare aspect by Safety Audit form.
- To compare the compliance level with environmental health, organization management, occupational safety, and occupational welfare aspect in Safety Audit form at different departments.

## **1.5 Hypothesis of the study**

### **1.5.1 Alternative Hypothesis (HA)**

- There is significant of each department is comply with environmental health, organization management, occupational safety, and occupational welfare aspect in Safety Audit form.
- There is significant different department between the Occupational Safety, Occupational Welfare, Environmental Health, and Occupational Management.
- There is significant different of Occupational Management, Occupational Safety, Environmental Health, and Occupational Welfare, between department.



## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Safety Audit**

International Organization for Standardization (2015) mention a standard is a document that provides requirements, specifications, guidelines or characteristics that can be used consistently to ensure that materials, products, processes and services are fit for their purpose. International Standards make things work. They give world-class specifications for products, services and systems, to ensure quality, safety and efficiency. They are instrumental in facilitating international trade and related documents, covering almost every industry, from technology, to food safety, to agriculture and healthcare.

However Information Handling Services Inc. (2015), recommends that the aims of International Standard Organization (ISO) is to improve in three (3) major aspect there is communication, collaboration and interoperability globally. The International Organization for Standardization (ISO) develops more than 25,000 international standards that improve communication and collaboration as well as smooth international trade growth. ISO standards dictate procedures and products for all sectors including assuring product consistency to improve safety, quality and participate in global fair trade.

ISO can promote an organization of their product and services internationally. An organizations not necessarily produce the profit, some organization are more to educational status, healthcare, community services, and welfare aspect. However in achieving the international level some standard need to accomplished. Failure to follow the standard may

cause by few factor such as standard operating procedure, safety, quality, and policy. In occupational safety setting these failure can contribute by failure to identify the hazard, risk assessment and risk control. The effects of failure to comply with the standards, an organization may develop the increasing of the total loss time injury and accident at workplace such as occupational disease, occupational poisoning, unsafe condition and unsafe action. World Health Organization (2015). defined occupational health as deals with all aspects of health and safety in the workplace and has a strong focus on primary prevention of hazards. The health of the workers has several determinants, including risk factors at the workplace leading to cancers, accidents, musculoskeletal diseases, respiratory diseases, hearing loss, circulatory diseases, stress related disorders and communicable diseases and others. Employment and working conditions in the formal or informal economy embrace other important determinants, including, working hours, salary, workplace policies concerning maternity leave, health promotion and protection provisions, etc.

Therefore, California Work Force Safety Training (2013), conclude that an audit is a more in depth survey of one, or a number of, aspects of the Management System. It will follow document trails, check the understanding of the workforce and look for evidence to demonstrate whether or not the management system is functioning properly and the undertakings given in the Health and Safety Policy are being met.

### **2.1.1 Safety Audit at Department in Malaysia**

Malaysia through the Department of Occupational Safety and Health (DOSH) under the Ministry of Human Resources has an enacted on Occupational Safety Health Act (OSHA 1994) that covering all occupational fields. The list of occupational field in OSHA 1994 is listed below:

#### **First Schedule (subsection 1(2)) OSHA 1994**

1. Manufacturing
2. Mining and Quarrying
3. Construction
4. Agriculture, Fishing and Forestry
5. Utilities (electricity, gases, water and sanitary)
6. Transport, Storage and Communication
7. Wholesale and Retail Trade
8. Hotel and Restaurant
9. Finance, Insurance, Real Estate, and Business Service
10. Public service and Statutory Authorities

(OSHA 1994, act 514: Regulation and Order)

Shipping, vessel on sail and armed force are not including in OSHA 1994 because they are follow the SOP of army emergency situation and international boundaries ocean law. The objective of OSHA 1994 is to make further services for securing workers in safety, health and welfare aspect and prevention, against risk to safety or health connection



with the activities of person at work, to establish the National council for Occupational Safety and Health and for matter connected therewith (OSHA 1994). Therefore, all industry sector or an organization either government or private are include in OSHA 1994.

With the OSHA 1994 enacted it is show that our government are concern about the safety, health and welfare of the workers. The occupational Safety and Health Act that was enforced since 1994 had create the legal framework to instill promote and encourage a high quality of safety and health (Ashari and Mohd Nor, 2004). It's important to the government to set clear national policy and legislation regarding safety, welfare and health at workplace. The term “**compliance**” by the employer, refers to the workplace that meet the requirement under OSHA 1994 and other related act.

To establish of safety and health program at workplace OSHA 1994 has highlighted the importance of workers and employer involved and participate by the establishment of Safety and Health Committee at workplace as state in section 30 of the OSHA 1994. Through this section the workplace with 40 or more employees are mandated to establish the Safety Health Committee. Then, the internal safety audit will be conduct times to times among department in the workplace. Beside, this study also reviews on the SHC requirement at workplace as mention in section 30 of act and comply with the regulatory requirement:

- Establish SHC at workplace
- Conduct a meeting regularly every 3 month with the recorded meeting's minutes.
- Conduct election or appointment of person to the committee.



- The composition of SHC must at least have an equal number of management and non-management representation such as:
  - ✓ 40-100 employees with (2) representative of employers and (2) representative of an employee.
  - ✓ 100 employees with (4) representative of employers and two representative of employees.

(Occupational Safety and Health Act 1994, act 514: requirement of Safety and Health Committee)

In order to promote safety, health and welfare at workplace, an efficient and appropriate systematic of Safety Audit are considerable important.

### **2.1.2 The Effectiveness of Safety Audit at Work Place**

Work health and safety auditing is a systematic, ongoing and periodic review of the entire occupational health and safety management system, including the policy and programs used to promote safety audit can prevent workplace accidents/incidents and work related illnesses. Audits are conducted to determine the effectiveness of management systems and to identify the strengths and opportunities for improvements, with the initial health and safety audit can be used to establish standards against which future audits can be measured. A safety audit will also provide an objective outlook of the status of occupational health and safety management within the workplace. These types of audits can be specific and undertaken to determine if workplace practices are meeting legislative requirements. Compliance audits are conducted to ensure the workplace meets the requirements of the Queensland Work Health and Safety Act 2011, Codes of Practice and Australian Standards. A compliance audit will identify hazards, unsafe work practices and

procedures, and systems of work do not meet legislated standards. The hazards addressed during a legislative compliance audit are determined by the workplace environment along with information obtained from specific training, relevant injury data and industry input. The outcomes of legislative compliance audits conducted give results that indicate if compliance is being achieved or if further actions are required to meet legislative standards.

Canadian Centre for Occupational Health and Safety (2015) describe three other types of inspection report is ongoing, pre-operation and periodic. The best and effectiveness audit should be implementing on-going and scheduling at certain workplace. Supervisors and workers continually conduct ongoing inspections as part of their job responsibilities. Such inspections identify hazardous conditions and either correct them immediately or report them for corrective action. Here, at this stage the hierarchy of control will be implementing to diminish the hazard. The frequency of these inspections varies with the amount and conditions of equipment use. Daily checks the equipment especially electrical item by users assure that the equipment meets minimum acceptable safety requirements. However, Pre-operation checks involve inspections of new or modified equipment or processes. Often these are done after workplace shutdowns. It's usually for the first time of the equipment to be operate to run test the SOP. Therefore pre-operation audit and inspection will predict what will happened and what kind of hazard will be develop in further based on function and availability of the equipment. Lastly are the Periodic inspections, planned inspections of the critical components of equipment or systems that have a high potential for causing serious injury or illness. The periodic safety audit may be done internally as a maintenance record keeping. Internally safety audit may help to improve the unsafe action and unsafe condition from time to time. The inspections



are often part of preventive maintenance procedures or hazard control programs. The law specifies that qualified persons periodically inspect some types of equipment, such as elevators, boilers, pressure vessels, and fire extinguishers, at regular intervals.

When we speak about safety audit the really person in charge regarding this matter are remain in our minds. So, safety audit is whose responsibility. Canadian Centre for Occupational Health and Safety (2015) mention it is depend on risk of unsafe action and unsafe condition or situation or situation at workplace. However, Health and safety committee members are obvious choices of personnel to carry out formal inspections, especially if they have received training or certification. The criteria in auditor should be knowledge of regulation and procedure, knowledge of potential hazard and having an experience with work procedure involved. Therefore the expertise will be determine based on their specialist for example engineers, maintenance personnel, occupational hygienists, health and safety professionals, supervisor or managers may be a part of the inspection team or they may be called upon to help with certain aspect of inspection or to help in explaining about the equipment or process. Large industry workplaces such as port, heavy industry, construction site and factory in big scale and section may have more than one inspection team. The various teams can have separate areas to inspect.

### **2.1.3 Relationship between Work and Health Status.**

The term of “occupational disease” define by World Health Organization (2015). state that is any disease contracted primarily as a result of an exposure to risk factors arising from work activity. “Work-Related diseases” have multiple causes, where factors in



the work environment may play a role, together with other risk factors, in the development of such diseases. Health Impact Assessment (in press) reported that many factors combine together to affect the health of individuals and communities. Whether people are healthy or not, is determined by their circumstances and environment. To a large extent, factors such as where we live, the state of our environment, genetics, our income and education level, and our relationships with friends and family all have considerable impacts on health, whereas the more commonly considered factors such as access and use of health care services often have less of an impact. The determinants of health include 3 factors: The social and economic environment, the physical environment and healthy workplace and the person's individual characteristics and behaviors (Aw, Gardiner & Harrington, 2007).

The contexts of people's lives determine their health, and blaming individuals for having poor health or crediting them for good health is inappropriate. Individuals are unlikely to be able to directly control many of the determinants of health. These determinants or things that make people healthy or not—include the above factors, and many others such as: Income and social status, education, physical environment, social support networks, culture, genetics, gender (Aw, Gardiner & Harrington, 2007).

