INVESTIGATION ON THE COMPLIANCE OF OCCUPATIONAL SAFETY AND HEALTH (OSH) LEGISLATIONS AMONG CONTRACTORS AND POTENTIAL INTERVENTIONS TO IMPROVE CONSTRUCTION SAFETY PERFORMANCE

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• Significance
The construction industry has unique characteristics from other sectors of the economy and is also known as the most dangerous industry due to the high incidence of accidents and fatalities.

A lack of awareness in providing provisions to guarantee the safety, health and welfare of the workers by the employers is one of the factors that contribute to the number of accidents increasing on construction sites. (DOSH, 2019)

In the construction industry alone, the fatality rates per 100,000 workers showed an increment at almost 106% from 7.26 in 2014 to 14.94 in 2017 (DOSH, 2017).

Main legislation relating to health and safety in the workplace is the Occupational Safety and Health Act (OSHA) 1994 and Factory and Machinery Act (FMA) 1967.

In order to cover a more various employee base and the latest risks presented in the working environment, comprehensive legislation is introduced (Abas, 2015).
A legislative framework in the Malaysia construction industry enforced by DOSH which is known as the Occupational Safety and Health Act (OSHA) 1994 (Act 514).

It is the regulation to ensure the safety, health and welfare of workers and to secure other people against hazards or health issues at work.

The safety and health requirements in OSHA 1994 and FMA 1967 must be followed by contractors to minimalize the accident happen in the construction workplace (Dorji, 2006).

The awareness of contractors in managing project management on its compliance towards the OSH legislation is still lacking (Yakubu & Ishak, 2013) (Mohd Kamar, 2015; Vijayan & Riyana, 2018), although numerous construction companies had prioritized OSH regulations in their construction projects (Asari, 2018).

This study suggests that it is very important for the safety and health of workers at the worksite in a managed system in ensuring smooth transition in working at the building construction sites while worker safety is assured.
OBJECTIVES

- to investigate the contractors’ compliance of OSH legislation in the Malaysian construction industry; and
- to attain construction stakeholder’s perceptions on the current situation and intervention to improve OSH performance in the construction industry.
METHOD

An interview method in order to attain the information required.

There were two interviews conducted between the contractors and enforcers.

Two different interviews were conducted, which involved different participants and questions for each interview, in regards to the objectives of the study.

These two groups of interviewees had been asked about their experiences and knowledge about OSH requirements.

Interviews were carried out face-to-face with the agreed participants and took around 30 to 60 minutes to finish.
Interview 1

The objective was to investigate the contractors’ compliance of OSH legislation in the Malaysian construction industry. Interviews were conducted with five Grade 7 contractors who were involved in building construction projects. The interview was conducted to get their views on the implementation of OSH requirements in their construction projects. Participants were selected among those who were responsible for managing safety and health at construction sites. Participants were asked about safety and health at the construction site.
The backgrounds of the participants are as follows:

<table>
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<tr>
<th>Participant ID</th>
<th>Interviewee ID</th>
<th>Position</th>
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<tbody>
<tr>
<td>Company A</td>
<td>A</td>
<td>Position: Safety and Health Manager</td>
</tr>
<tr>
<td>Company B</td>
<td>B</td>
<td>Position: Safety and Health Officer</td>
</tr>
<tr>
<td>Company C</td>
<td>C</td>
<td>Position: Safety and Health Officer</td>
</tr>
<tr>
<td>Company D</td>
<td>D</td>
<td>Position: Safety and Health Officer</td>
</tr>
<tr>
<td>Company E</td>
<td>E</td>
<td>Position: Safety and Health Officer</td>
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The participants were asked about safety and health at the construction site as follows in interview 1:

i) **Question 1**: Do you implement OSH management at your construction site?

ii) **Question 2**: Do your management team comply with OSHA 1994 and FMA 1967 in managing the safety and health at the site?

iii) **Question 3**: Which source do you get the OSH legislations i.e. Act, Regulations, Guidelines, etc?

iv) **Question 4**: Do you have any standard guidelines or checklist in implementing OSH management at the construction site?
• Meanwhile, for objective 2, the interview was carried out to attain construction stakeholder’s perceptions of the potential intervention to improve OSH performance in the construction industry.

• The stakeholders from government agencies (DOSH and CIDB) were approached to, as follows:

<table>
<thead>
<tr>
<th>Interviewee ID</th>
<th>Position</th>
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<tbody>
<tr>
<td>F</td>
<td>Department : DOSH Melaka</td>
</tr>
<tr>
<td></td>
<td>Position : Enforcement Officer</td>
</tr>
<tr>
<td>G</td>
<td>Department : CIDB Melaka</td>
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<td></td>
<td>Position : Enforcement Officer</td>
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• The participants were asked about the current situation regarding OSH management in the industry. For each question, they were required to state their agreement or disagreement with the statement and elaborate on their answer. The questions for interview 2 were as follows:

i) **Question 1**: The construction industry contributes to the highest frequency of incidents and accidents due to lack of knowledge in OSH management among construction stakeholders, such as client, consultant, contractor etc. Do you agree?

ii) **Question 2**: There is no technology or any software to facilitate all parties involved in building construction projects regarding legislations requirement in construction stages. Do you agree?

iii) **Question 3**: SHASSIC (Safety & Health Assessment System in Construction) tool which is developed by Construction Industry Development Board (CIDB) covers 3 main components of assessment namely Document Check, Site and Workplace Inspection and Personnel’s Interview. What is your opinion on the tool?
RESULTS

Interview 1

Question 1:
Contractors implemented OSH management at their construction sites, all participants were complying and implementing the OSH management at their workplace.

- Interviewee B, his company was only partially-complied and implemented OSH management.
- Interviewee A stated that his company always complied and implemented the OSH management at the construction site and monitor the implementation from the early stage of the construction process.
- Company E also implemented OSH management from the construction stage until commissioning (Interviewee E).

Question 2:
The management complied with OSHA 1994 and FMA 1967 in managing the safety and health at the site.

- Interviewee A mentioned only practicing the basic safety procedures and the company did not follow the OSHA 1994 and FMA 1967 in implementing the OSH requirements at their construction site.
- For interviewees B and C, the interviewees answered they knew and aware of the guidelines of the OSH management based on the OSHA 1994 and FMA 1967 but their company did not fully follow the guidelines in their safety practices at the construction sites.
- For interviewee D, their company did carry out SHASSIC but they did not know the main purposes of SHASSIC relating to their job scopes. Lastly, participant E said their company did not follow the OSHA 1994 and FMA 1967 at their construction sites at all.
The participant A got the resources from the DOSH department and CIDB while interviewees B and C got the resources from the DOSH and CIDB websites. Interviewees D and E had the resources from DOSH and the person in charge of the CIDB.

The SHASSIC (Safety & Health Assessment System in Construction) tool which was developed by the Construction Industry Development Board (CIDB) covering 3 main components of assessment namely Document Check, Site and Workplace Inspection and Personnel’s Interview. SHASSIC assessment was not fully related to the OSH legislation.

Interviewee A stated that their company had the guidelines and checklist based on OHSAS 18001:2007. Interviewee B stated that their company had a checklist of safety and health in their construction site that was taken from the previously experienced checklist. For interviewee D, their company did carry out SHASSIC but they did not know the main purposes of SHASSIC relating to their job scopes. Lastly, participant E said their company did not follow the OSHA 1994 and FMA 1967 at their construction sites at all.

Interviewees C and D mentioned that their company only applied a general checklist which had the basic requirement of the occupational safety and health. Interviewee E stated that his company only had the checklist that was based on the Public Works Department guidelines.
Question 1: The highest frequency of incidents and accidents contributed by the construction industry due to lack of knowledge in OSH management among construction stakeholders, such as client, consultant, contractor, etc. The interviewee was asked if they agree on the statement.

Interviewee F stated that he did not agree with the statement. He stated that from the DOSH statistics of incidents and accidents, the construction industry might be having the highest fatalities rate, but the highest statistics of incidents and accidents had come from the manufacturing industry.

Interviewee F did not deny that one of the significant factors of the accident was due to the lack of knowledge in OSH management.

Question 2: The absence of technology or software to facilitate all parties involved in building construction projects regarding the legislation, regulation, or act requirement in the early stage, construction stage, and commissioning stage.

Interviewee F had informed that there was a perimeter scaffold technology to reduce the fatalities accident in the construction industry. This technology was mostly used at the high-rise building, especially for the scaffolding erection.

For software technology, BIM (Building Information Technology) had been implemented in construction but only for a certain and big project. The BIM obviously could identify and clarifies the hazard and location of danger area based on 3 Dimension (3D) drawing but not relating to the regulations and legislation required for each activity.

Question 3: The SHASSIC (Safety & Health Assessment System in Construction) method checklists from CIDB (Construction Industry Development Board) that only covered 3 main components of assessment namely Document Check, Site and Workplace Inspection and Personnel’s Interview.

The SHASSIC assessment could only be conducted when the physical progress of the project had reached within 25% to 75% and not fully related to legislation, regulation and act requirement, and did not cover from the early of the construction stage.

The interviewee agreed and mentioned that to reduce the hazard, the prevention of the accidents shall start from the planning stage before the construction took place. In Malaysia currently, the enforcement and the site assessment from DOSH and CIDB only focusing on the construction stage.

DOSH Officer had proposed to use a CDM (Construction Design Management) concept in the Malaysian scenario because CDM was a good medium to reduce the rate of fatalities in construction that had been used in the United Kingdom and we needed to explore more on CDM.
### SUMMARY

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<th>Overall the interview showed that the contractors knew about OSH requirements, but they had no knowledge in implementing it and complying with the law.</th>
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<td>Moreover, from the interviews that have been conducted, it had been shown that there was no competent technology or software that can be used which able to focus on compliance with laws and actions in the construction industry.</td>
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<td>This study suggests developing programs that produce checklists that can meet the needs of OSH.</td>
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Based on the result of interview 1, it can be concluded that all contractors did not have a detailed guideline or checklist in applying the safety and health for effective OSH management and planning.

From the interviews, interviewees were clearly had known only the basic procedures and did not know the main purposes of implementing the OSHA 1994 and FMA 1967 in their construction sites.

They also knew that they were compulsory to implement the Acts but were unable to do it due to the lack of guidelines and information about the Acts.

It can be concluded that most of the contractors involved in building construction only met the general execution of safety and health and did not organize any course to make sure the safety of the workers. It was also found that the contractors had no proper guidelines in execution safety and health in a construction site and not comprehensively implemented OSH requirements as stipulated in the legislation.

The authors proposed to develop a system that produces a checklist based on the information project undertaken to enhance the quality and safety of employees while helping to facilitate the implementation of safety and health at the construction site.

This study recommends that it is important to attain the stakeholder’s opinions, particularly from the government enforcement body related to construction safety, before developing the proposed system.

Based on the interview with the representatives of CIDB and DOSH, the interviewees had agreed that the development of the system to facilitate OSH requirements for building construction projects was necessary and needed to improve the safety and health performance in the Malaysian construction industry.

In addition, was incomplete enough which only include just three (3) aspects i.e. document check, work place. It is for the training of a contractor in numerous aspects of the construction work activities. A useful checklist from SHASSIC for safety and health in compliance with the contractors, however, the checklist or site inspection, and worker’s interview.

Proper management of the interaction between technological systems and people can lead to effective safety. It was important to develop a program that produced a checklist based on the information project undertaken to enhance the quality and safety of employees while helping to facilitate the implementation of safety and health at construction sites.
For future studies, it seeks the results of the effectiveness of new systems or technologies that are competent in complying with the laws, regulations, and acts in the construction industry.

It is essential to improve safety performances including by providing the guidelines and enhancing the management at construction sites.
REFERENCES


Thank You