

Contractors' Attitude towards Enhancing Safety Performance: Case Study on Construction Firms in Penang

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Abstract. A qualitative study was conducted to investigate the contractors' attitude towards enhancing the safety performance in construction site. Despite the fact that there are many safety initiatives established by the government, the rates of accidents are still in a critically high condition. Thus the purpose of this research is to study the contractors' attitude towards enhancing the implementation of safety management system in construction site in order to increase the safety awareness of construction practitioners in construction site and improve the safety condition of construction sites. This study is conducted through oral interviews with the construction practitioners, and visual inspection of construction sites. The attitudes of contractors are evaluated from 3 aspects: Contractors' efforts in implement and enforce the safety rules, Contractors efforts in overcoming the rate of accidents, and Reasons given by the contractors for not implement safety law.

1 Introduction

The construction industry is important for its contribution to the development of the country. At the global scale, the construction industry is vitally important because of its mega size and huge output, which underpin various economic activities and contribute to the delivery of social and environment objectives of a nation (1). Although it is important, the construction industry is considered as the most hazardous and unsafe industries. Construction accidents and failures are common incidents in almost every construction site. The rate of fatalities and accidents in construction industry are considerably higher across all others industries (1); (2) such as mining & Quarrying sector, trading sector and electricity, gas, water & sanitary services (3). Result, analysis and discussion. Accidents can occur at can anytime in construction site: before work begins, during site survey and investigation of a project, and even after the construction is completed. The victims are not only the workers on site, but also the people who are not employed in the site including the passer-by or local tenant were killed and injured in construction sites because of the construction activities. V. J. Davies, Ken Tomasin, [1] states that, in the construction industry the risk of major injury is almost twice that for manufacturing and the risk of a fatal accident nearly five times greater than in the manufacturing industry. Therefore, it is necessary to take several initiatives to manage its safety condition and improve its safety performance. The government sector has taken several initiatives to improve the construction industry safety performance, such as the establishment of Occupational Safety and Health Association (OSHA), National Institute of Occupational Safety and Health (NIOSH) and Construction Industry Development Board Malaysia (CIDB). Construction sites safety

condition can be improved by adhering strictly to the safety rules and regulations which are written in safety manuals. The construction practitioners also need to possess positive working attitudes and high safety awareness towards enhancing the safety management system.

2 Methodology

The purpose of this study is to investigate the contractors' attitude towards enhancing the safety performance on construction firms in Penang Island. The study is carried out by conducting interview with related construction practitioners and visual site inspection. The qualitative research method of interview was chosen in conducting this particular study. The respondents were selected using purposive sampling (4). Purposive sampling method was chosen because the targeted samples fit a specific requirement and characteristics. Six respondents are selected from 5 construction sites in Penang Island. The respondents were selected among the employees in those construction sites such as contractors, site supervisors, labourers and safety and health officers. They have a few years of working experience in the construction industry. The sampling method also enabled the researchers to select the respondents from a different positions and background. This allows the researchers to collect a comprehensive understanding of a working behaviour under different contexts and pressure.

The interview questions were designed based on the elements of the safety factors. They were designed to be simple, brief and easy to be understood. The durations of the interview sessions were approximately one hour and all the interviews were recorded by using a digital voice recorder for analysis purposes. Visual site inspections were also carried out once the interview sessions were done. The labours working attitude and behaviours were thoroughly observed, as well as the site safety conditions. The photos of construction site condition were taken for further reference. The data collected was analysed using a grounded theory (5). Grounded theory is a data analysis method which provides systematic and organized way of classifying and grouping the data into the related or common theme.

3 Observation, Result and Discussion

Five construction sites in Penang were visited which are the construction for:

- Proposed Development of Kompleks Mahkamah Syariah Negeri, 7 floors with others facilities on part of Lot 704 & part of Lot 705, Seksyen 2, Jalan Batu Gantung/Jalan Scotland, Daerah Timur Laut, Penang.
- Proposed Development of Sekolah Kebangsaan Minden Height, Gelugor, Penang. With 10 Classrooms and other Related Facilities.
- Proposed Development of 11 unit residential housing, 2 floors and 1 basemen floor under "strata title" Lot 1060, 1061, 1062, 1063 & 1066, Seksyen 2, Bandar George Town, Daerah Timur Laut, Jalan Brook, Penang.
- Proposed Development of Sekolah Kebangsaan Sg. Gelugor, Penang.
- Demolished works and development of Masjid Jamek Sg Gelugor, Lot 3386, 3387 & 5574 Daerah Timur Laut, Penang.



Figure 1: Waste disposal in site Proposed Development of Kompleks Mahkamah Syariah Negeri, 7 floors with others facilities on part of Lot 704 & part of Lot 705, Seksyen 2, Jalan Batu Gantung/Jalan Scotland, Daerah Timur Laut, Penang.



Figure 2: Pathway for vehicles and pedestrian in site “Proposed Development of Kompleks Mahkamah Syariah Negeri, 7 floors with others facilities on part of Lot 704 & part of Lot 705, Seksyen 2, Jalan Batu Gantung/Jalan Scotland, Daerah Timur Laut, Penang.”

Meanwhile, construction site, “Demolished works and development of Masjid Jamek Sg Gelugor, Lot 3386, 3387 & 5574 Daerah Timur Laut, Penang”, is no worker friendly than others because they do not have organized site set up. They do not set up signboard for safe or danger zones, do not have proper pathway for vehicles and pedestrian, and do not have a proper waste disposal area.



Figure 3: Improper waste disposal in site Demolished works and development of Masjid Jamek Sg Gelugor, Lot 3386, 3387 & 5574 Daerah Timur Laut, Penang.



Figure 4: Materials were leaf stray after being used in site Demolished works and development of Masjid Jamek Sg Gelugor, Lot 3386, 3387 & 5574 Daerah Timur Laut, Penang.

4 Labours working behaviours and performance

The labourers are majority from foreign countries such as Bangladesh, Indonesia, and Myanmar. During site inspection, their working behaviours and performance is observed. In every construction site, there are several labourers that do not obey and implement the written rules. They do not wear personal protective equipment (PPE), especially safety helmet and safety boots when they are doing their work. However, there are some obedient labours that will wear PPE when they doing their task no matter it is internal or external works.



Figure 5: The labours in site Demolished works and development of Masjid Jamek Sg Gelugor, Lot 3386, 3387 & 5574 Daerah Timur Laut, Penang.

5 Result and Discussion

The research questions were intended to identify a broad array of contractors' attitudes towards enhancing the implementation of safety law. The different attitude of contractors related to implement were not expressed by every individual, nor did they play an equal role in shaping safe workplace. Furthermore, some of the factors were much more commonly shared and expressed by individuals than others.

The analysis revealed several different organizational and social factors that explained the contractors' attitudes. Related factors were further classified into common themes

Table 1: List of data collected from interview

Interviewees	A	B	C	D	E	F
Questions						
Contractor awareness	✓	✓	✓	✓	✓	x
Opinion on Penang construction safety condition	✓	✓	✓	✓	✓	✓
Own site safety condition	✓	✓	✓	✓	✓	✓
Safety officer	✓	✓	✓	✓	✓	x
Common site accident	Minor accident	Minor accident	Minor accident	No	No	Minor accident
Recording accidents	✓	✓	✓	✓	✓	x
Safety program/ plan	✓	✓	✓	✓	✓	✓
safety manual	✓	✓	✓	✓	✓	✓
Written PPE	✓	✓	✓	✓	✓	✓
Given training	✓	✓	✓	✓	✓	x
Explained to workers the scope of works	✓	✓	✓	✓	✓	x
Enforcement of safety program	x	✓	✓	✓	✓	x

Table 2: Contractors' efforts in reducing the risk of accidents

Interviewees	A	B	C	D	E	F
Efforts						
Enforcement of the law	✓	✓	✓	✓		
Warn	✓	✓	✓	✓		
Fine	✓	✓	✓	✓		
Capture pictures	✓	✓	✓	✓		
Expel from work		✓				
Remind each other					✓	
No action						✓

Table 3: The reasons given by the contractors for not implement safety law.

Interviewees	A	B	C	D	E	F
Reasons						
Management staffs' attitude	✓			✓	✓	✓
Labours' attitude		✓				
Troublesome and burden	✓		✓			

The purpose of this study is to investigate the contractors' attitudes towards enhancing the safety performance at construction sites. Table 1 shows the data collected from interview sessions. From the data collected, it shows that majority of the contractors have the awareness of the safety at workplace. They had implemented several actions such as having the initiatives to employing safety and health officers at their workplace, making a record when accident happen, proposing site safety plan and manual, executing personal protective equipment (PPE) policy, conducting training and giving instructions to labourers before starting to work. Table 2 shows the contractors' efforts in reducing the risk of accidents, while Table 3 shows the reasons given by the contractors for not implement safety law. Those data were analysed and to evaluate the contractors attitude towards enhancing the safety performance at construction site.

6 Overall Analysis

Analyzing the contractors' attitudes towards enhancing the safety performance at construction sites, it can be evaluated from 3 different aspects such as the contractors' efforts in implementing and enforcing the safety rules, contractors' efforts in reducing the rate of accidents and the reasons given by the contractors that influencing the implementation of site safety

6.1 The contractors' effort in implementing and enforcing the safety rules

Contractors' attitude towards enhancing the safety performance can be shown by their efforts in implementing and enforcing the safety rules. Contractors who possess good attitude towards ensuring the safety at the workplace will have the initiatives to implement and enforce the existing written safety rules and regulations which established by the government and their company's policies.

In order to enhance the safety levels at the construction work sites, Construction Industry Development Board Malaysia (CIDB) has established an integrated program, which provides Green Card Training. This program involves registration and accreditation of Construction Personnel, which means all personals who are working at the construction sites, must undergo the training and obtain Green Card before entering the construction site. From the data collected, most of the labours have the Green Card. However, some of the labours from small and medium sized contracting firms do not have it. Besides that, the government sectors such as OSHA, NIOSH, and CIDB have a well-written personal protective equipment (PPE) policy. There are many improvement steps on construction safety taken by government sectors such as the establishment of programs, plans, and manuals as the initiatives to increase the awareness of the contractors towards site safety and reduce the risk of accidents. From the data collected, it can be concluded that the contractors were not implementing the site safety rules and regulations that were established by the government or planned by their own company's policies. This is because the contractors do not possess high concern on labourers' safety and the safety at the workplace. Contractors should implement and enforce the established disciplinary process in order to show good attitude towards enhancing the safety law at the construction site.

6.2 Contractors' efforts in reducing the rate of accidents.

Contractors are the top management personnel at the construction sites. They must possess good attitudes in managing the safety and have initiatives to reduce the rate of accidents happen at the workplace. They must perform their responsibilities as listed in the law of health and safety. They

have to take the right precautions to reduce the risks at the workplace, and dangers to the labourers and the public. They also have to make sure that everyone understands and takes part in ensuring health and safety in the working environment. Contractors' attitudes can be evaluated by their efforts in controlling the rate of accidents because this factor is able to show that the contractors are concerned and having the awareness of the site's safety. They will try their best in thinking the solutions and prevention steps to avoid the accidents. Based on the data collected, there were six methods that had been carried out by the contractors to control the rate of accidents: enforcement of the law based on the written safety manual; give warning to the labour who disobey the safety rules; fine the labours who repeated the mistakes; capture pictures as proof; expel the labours who violate the rules at work as a reminder to all the workers. When the contractors have the efforts in reducing the rate of accidents at the construction sites, the contractors are possessing the right attitudes towards enhancing the safety performance.

6.3 The reasons that influence the implementation of the site's safety

When the contractors gave various reasons for not implementing the safety law, it shows that they do not possess good attitudes towards enhancing the site's safety performance at the construction sites. The contractors should plan more back-up solutions to implement the site's safety instead of giving the reasons for not implementing it. There are 3 main reasons given by the contractors for not implementing the safety law, which are management staffs' attitude, labours' attitudes, and they think it is troublesome and burdening. From the data collected, the most significant reason was the management staffs' attitude. Four out of six interviewees thought that the management staffs' attitude was the main reason in influencing the implementation of the construction site's safety rules.

7 Conclusion

Contractors' attitude is the major factor in determining the implementation and enforcement of the safety law at the construction site. It is also the main factor in affecting the safety condition at the workplace. Their attitude towards safety will affect the labourer's perceptions on working behaviours and performance during site works. They should always emphasize the importance of safe working behaviour and perform positive safe working attitude at the construction sites. These findings provided a valuable guidance for practitioners to identify the processes by which they can improve the safety of the workplace.

References

1. V. J. Davies, K. Tomasin, 1996, Construction Safety Handbook, 2nd ed. Thomas Telford Publishing.