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CASE STUDIES ON THE CURRENT SAFETY ISSUE AND WORK BEHAVIOUR OF CONSTRUCTION SITE WORKERS IN MALAYSIA

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Abstract: *Vast developing countries like Malaysia are often linked to an excellent economic growth and rapid construction development. Therefore, the operational safety issues have always been a hot topic in the construction sector due to the near misses and accidents are still at an alarming rate. Although various studies and initiatives have been made to reduce the accident rate but in reality, accidents still occur, especially at the operational level. Hence, a study has been conducted to explore the current safety issue and work behaviour of construction site workers in Malaysia. This study was started out by reviewing accidents statistic report published by the Department of Safety and Health (DOSH). Then, literature from various sources mainly; journals, articles, conference papers and books were examine to strengthen the issue. Semi structured interviews were carried out to obtain data from informants who are mainly site safety personnel who are well versed with the construction safety. The finding of this study reveals that near misses, incidents and accidents are still occurring at the operational levels due to poor workers behaviours and attitudes. Despites initially, various approach such as constant supervision, strict safety policies and regulation, implementation of safety clauses and safety training have been conducted by the management to enhance safety awareness among the construction workers.*

Keywords: *Construction accident, Causes, Negligence, Worker Behaviours*

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Introduction

The construction sector in Malaysia is one of the largest sectors that can be categorized as dangerous and hazardous area due to its nature of work that is often closely associated with the use of dangerous substances and equipment as it can affect their health mentally or physically. Referring to the accident statistics reported by Department of Safety and Health (DOSH) shows a clear picture that the Malaysian construction industry needs a major improvement from the current safety practises. Hence, various occupational safety studies have been conducted to address this problem from continuing. However, accidents are still occurring at construction sites and the actual causes need to be identified so that the efforts to reduce accidents can be achieved. This paper aims to explore the current safety issue and work behaviour of construction site workers in Malaysia.

Literature Review

Accident can be defined as an unfortunate event that happens by chance, unexpectedly, unplanned, undesirable and uncontrollable, typically resulting in damage and injury (Aouad, Angela, & Song, 2006). Accidents are difficult to predict and they should be concern regardless of the nature of the damage or loss suffered. Therefore, occupational safety and health are one of the most important human resource management activities that aims to prevent near misses, injuries and accidents among the construction workers at site (Salleh, N.A., Hussin, A.A., Nawi, M.N.M., Ibrahim, 2015).

Construction Accidents Issue

It is vital to study the data and the statistic of accidents issued by the Social Security Organization (SOCSO) in determining the accident trend from year to year. A total of 7,870 accident cases involving injuries and fatality were reported in 2017, reflecting an increment of 532 cases or 6.75% in comparison to 7,338 cases in 2016 (PERKESO, 2018). Therefore, from the total number of accidents reported at the year 2017, it was found that construction accidents and work related commuting accidents showed an increase in comparison to 2016. Furthermore, as the report published by the Department of Safety and Health (DOSH) showed a similar trend which in 2017, a total of 8 cases of permanent disability, 106 cases of Non-permanent disability and 118 cases of fatality were reported respectively (DOSH, 2019). Obviously, the illustration of the accident cases at the construction site characterizes the construction sector in Malaysia. In general, accidents will disrupt the project progress and increase the overall construction cost. Therefore, the safety at the construction site should be preferred to maintain the reputation of the company (Ayob, Shaari, Zaki, & Munaaim, 2018). Ayob, Shaari, Zaki and Munaaim (2008), also agreed that accident at the construction site is associated with the poor safety awareness among the construction workers. In addition, accident occur due to safety attitude and behaviours of the construction works was not regularly monitored. On top of that, one of the factors leading to the behavioural problems is due to the workers poor mentality, laziness or a perception that one will not be involved in the accident (Mohammed & Ishak, 2013).

Management Roles and Responsibilities

Lack of safety training, effective communication and loose supervision can adversely affect an organization, resulting in accidents occurring at the site (Othman, 2012). As suggested by Male (2003), human factors are likely to contribute to accident and the management plays an important role in providing safety exposure to improve safety awareness among safety workers. There are evidence to indicate that most of the accidents happen at the workplace are associated

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with poor training module (Male, 2003). There are numbers of case studies has proven that adequate training would minimize the likelihood of injuries among the construction workers (Steemson, 2000). Lugah et al (2010) suggested that although OSHA 1994 has implemented in Malaysia for more than 10 years, safety awareness among the workers remains comparatively poor. Thus, most of the companies in Malaysia has identify the importance of safety training and willing to spend their resources to implement it at their organisation (Lugah et al., 2010). Organisation are committed to provide safety training programme and safety training due to their belief in perception of influencing the workers safety practises (Rosmani, Hassan, Che Hassan, Basha, & Hanafi, 2007). A study by Rosmani et al (2007) also suggested that the enhancement of safety awareness among site workers are driven by efficient and effective safety training.

Usually, supervisor can identify the common causes and factors that contribute to the near misses, incidents and accidents at the workplace as they can take preventative measures to avoid them from happening (Zakaria, Norudin, & Abdullah, 2012). In short, the supervisor is the key person in controlling the construction accidents. Based on the study by Zakaria, Norudin and Abdullah (2012), most of the company has provide some skilful supervisor that have a clear view on how the workers should work at site and they are able to convey the knowledge the workers. However, the number of supervisors are insufficient to accommodate the number of construction workers who are overwhelmed when in the larger project (Saaidin, Endut, Samah, & Ridzuan, 2017).

Safety policy is an organisation vision and mission in relation to safety management published in statement form (Griffith & Howarth, 2014). It is obligatory for the organisation to define their safety philosophy in a form of safety policy, rules and regulation in order to convince their workers to practise safety in construction site. Various research claimed that the authorities has an important role to ensure safety policies in Malaysia is proven efficient (Shim Mong, 2006). By imposing a safety policy, foreign workers would have to comply with safety rules and enhance their safety awareness respectively (Tan & Razak, 2014). Tan and Razak (2014) added, most of the company in Malaysia implement good safety practises as they displayed their safety policies as safety standard work procedure (SOP) at the main entrance of the construction site, thus making it visible to all workers. Therefore, the workers were aware of the safety policies and implement them during the work (Tan & Razak, 2014).

At project level, safety has become a priority as a specific clause related to safety is mentioned in standard form of contract for construction projects (Rahman & Rozanah, 2015). This approach is one of the initiatives of the Construction Industry Development Board (CIDB) to ensure that every safety matter should be mentioned in a form of clauses in the project contract for the contractor to price them (Hamid, Mohd. Khairolden, Maria Zura, 2008). Therefore, “no provision in the contract” would not be an excuse for employees not to practice safety. Huda, Mohd and Ismail (2015) stressed that, main contractor has to carry out part of the work for which has stated in the main contract which groups the entire contract under quality, safety, health and environment clauses even though there is no standard form or terms in the domestic sub-contract.

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Workers Attitudes and Behaviour

The major problem related to safety culture issue at construction sites would be the attitude of the workers (Hamid, Mohd. Khairolden, Maria Zura, 2008). Most of the construction workers did not practise safety in construction site is due to carelessness, over-confidence, negligence and ignorance (Krishnamurthy, 2006). Rahim (2008) stated that, construction workers in Malaysia are mostly foreign worker who has poor safety awareness due to their nature of survival to live in foreign country. For instance, the workers does not perceives safety as their priority as they are chasing for project progress in order to earn more for their salary (Tan & Razak, 2014). He added, many workers felt that practising safety during the work would be such a burden to them, as it would slow their physical movement. They also often believe that their money is worth much more rather than spending on safety matters (Hamid, Mohd. Khairolden, Maria Zura, 2008). Mohammed and Ishak (2013) agreed that, although a worker is trained to do the job, it is not necessarily he will avoid job hazards due to his laziness and poor mentality toward safety.

Research Methodology

The researcher has collected all data pertaining to the current issues in the industry and the increment of accident rates in construction site from primary sources (preliminary interviews). As for this study, three (3) case studies was conducted by using qualitative method. Semi-structured interview was carried out to collect a more in-depth and extensive feedback from the informants that could not be completed through other mediums. The researcher believes that an expert's opinion towards the area of study would be a useful exploration due to their industry experiences and professional perspective. Three (3) semi-structured interviews was developed in order to achieve the research objectives. This interview structure consists of two sections whereby; the first section pertaining to their demographic information and the second section consist of questions that relate to the current safety issues, their safety practices at the workplace and the construction workers perceptions and behaviours towards safety. Randomly, three (3) informants were selected based on their professional background in order to gather operative and reliable feedback that is relevant to the research problems and research objectives. This study comprises with construction site personnel of three (3) different main contractors and they were selected due to the role they play in the construction site. They often deal with the construction site workers at the operational level when it regards to safety matters. Interview was conducted face-to-face and opinions from the interviewees were recorded with their consent. The time taken for the interview ranged from 40 minutes to an hour and interviewees were free to express their opinions on any issues in regards to safety.

Findings

The theme is defined by the element that has been discussed by the informants and the key words and concepts were identified by coding the data to form sub-themes. Thus, the themes were generated from the patterns or sub-themes such as the conversation topics and vocabulary. Therefore, the sub-themes will then become the foundation for establishing the main themes. This section discussed about an analysis of the findings produced by the interviews. Table 1 showed the profiles featuring the three (3) construction site personnel and it is indicated as follows.

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Table 1: Three Construction Site Personnel Profiles

Construction Site Personnel	A	B	C
Interviewee position in the organisation	Site Supervisor	Site Supervisor	Safety Site Supervisor
Type of Organisation	Main Contractor	Main Contractor	Main Contractor
Years of experiences	5 years	8 years	8 years

Construction Site Accidents

The informant's expertise gained from their working experience in the construction site is one of the major elements in this data collection. Two (2) informants had working experience in the construction site for eight (8) years while another had worked at least for five (5) years, indicating that they had encounter with some accident situations that was happening at the construction site. Based on one of the informants who often deals with the workers at the operational level, stated that the accident is often happen in the construction site due to the dangerous and hazardous working environment.

> *"…in some of the sites that I have been handled, accident definitely would occur and it involves injuries, disabilities and even death".* ***(Informant B)***

The informants has established that there are accidents and injuries occurring throughout their involvement in the industry as this is one of the most common things happened at construction site. Although safety is a priority at work, accidents are still common and each one of them were varies. Furthermore, according to their responses, there are several common types of accidents in the workplace, which have been discussed as follows.

> *"There are accidents occurred related to the machinery whereby our generator set were exploded out of nowhere".* ***(Informant A)***

> *"My worker sometimes careless and stuck his fingers while nailing the scaffold".* ***(Informant A)***

> *"While we excavate a fifteen (15) meters deep pit, one of our works had died due to fall of height and he has fallen over our boring machine".* ***(Informant B)***

> *"…one of our foreign workers has died due to the public negligence during the excavation process. The driver had rammed the safety barriers and hit him…"* ***(Informant B)***

> *"…new workers. While he was cleaning the boring cutters, one of the boring machine operators had turned on the switch and caused the worker to loss his fingers…"* ***(Informant B)***

> *"…as my colleague has fall into the pit and died instantly".* ***(Informant C)***

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"As with the glass installation incident, the glass suction device does not work properly and causes the glass to be dislodged. Then the glass panel has overtaken one of the workers below and was seriously injured in the head". ***(Informant C)***

Top Management Initiative

The informants has also emphasized that some measures have been taken by the management to ensure that the safety awareness and precautions are sufficient among employees. Furthermore, some exposure such as regular safety training, a compulsory toolbox briefing every morning and obligatory safety modules for the new workers were implemented at their construction site. This suggests that safety practices at the management level has been conducted accordingly as shown in the quotes below.

"Every morning we have a toolbox meeting and even every month we will conduct safety briefing accordance to OSHA requirement…" ***(Informant A)***

"We will run a toolbox meeting every day to explain the work that needed to be done on that day and remind them about the safety practices at the workplace…" ***(Informant B)***

"…we also conduct some pre-task talk before carrying any specialist work so they may aware of the dangers they are facing". ***(Informant B)***

"Apart from toolbox briefing, we will conduct a safety training on a monthly basis and each of the new subcontractor is required to attend the module… including me who is also required to attend the said training". ***(Informant C)***

All of the informants believes that in ensuring the safety at the construction site can be classify as safe, the management has also made some additional precautions such as strict supervision and effective safety polices that are suitable to the site conditions. Although safety is everyone's responsibility, all informants agreed that each construction site requires an individual who will in charge to safety. Moreover, to ensure that safety goals can be achieved, safety regulations and policies are vital in an organization to regulate the safety of the construction workers.

"…sometimes the supervisor may not notice because the numbers of the workers was too much. Therefore, it is important that triple S (Safety Site Supervisor) is responsible in ensuring the safety at site". ***(Informant A)***

"…we will charge for NCR if the employee has violated the safety rules on site". ***(Informant A)***

"…our company has its own safety policy, standard of procedure (SOP), and even safety standard as accordance to the authority requirement…" ***(Informant B)***

"…although we have our own safety SOP and a supervisor assigned to monitor safety at work, it is vital to enhance the safety awareness among the employees..." ***(Informant B)***

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"…my company do provide us with a complete set of safety policy accordance to the authority specification and even me myself has created my own safety checklist and records to monitor…" ***(Informant C)***

Project Based Initiative

It was established during the interview that there are clauses conceived for safety in their project contracts. Although a further improvement needs to be done, safety has become an item that should be priced. Therefore, it has becomes an obligation for each of the subcontractor to price the safety if they wish to participate in the tender. As informed by one of the informer, the authorities have gazetted this approach in order to minimize the safety hitches at the project level.

"Project size will affect the safety as they are often linked to the budget of a project. Therefore, there are safety clauses in our contract which should be priced by the subcontractors". ***(Informant A)***

"In our contracts there is a price for safety. Whether it is MRT or DASH project, we do include one slot for the subcontractor to name their price. Often in the preliminaries section…" ***(Informant B)***

"There is, but only in general and the safety item is priced in lump sum figures…" ***(Informant C)***

Safety Practices at Operational Level

Unfortunately, all informants agreed that the safety practises at the operational level is still weak and should be improved. They all believe that most of the construction workers are lack with safety awareness as carelessness, over-confidence, negligence and ignorance became a part of them. They include some examples and situation of why the construction workers tends to not practicing safety while working in the construction site.

"…they think that wearing safety gloves and masks is a burden and can reduce the senses of sight and touch…" ***(Informant A)***

"…wearing rubber boots is enough and it's easy to climb up scaffolding…" ***(Informant A)***

"…safety harness is not being used because of its complicated method. They claimed that it is very tasty and they are lazy to wear…" ***(Informant A)***

"…despite being told, they are still stubborn to wear them because they want to chase the work progress…by the end of the day, they get their salary…" ***(Informant A)***

"…safety equipment are expensive and they cannot afford it". ***(Informant A)***

'…he is lazy to wear the safety harness because of his working nature requires him to go up and down and cause him to fall…" ***(Informant B)***

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"...we have already ordered them to follow the instructions given. We even pasted a signboard for their gaze and unfortunately, they did not comply with the instructions". ***(Informant B)***

"...it's just a lazy attitude. They are lazy to install and obey..." ***(Informant B)***

"... he walk by himself while phobing and caused him fall to death..." ***(Informant C)***

"...they did not cover the pit because they delayed to do so due to their meal time..." ***(Informant C)***

"...we have already stressed it for so many times but they are still stubborn to follow the instructions and we have no choice but to charge them and their managers with NCR..." ***(Informant C)***

Discussion

This study exploits the significance of qualitative research by portraying the true picture of the current safety cultures at operational level in the construction sites. It demonstrates the initiative that has been done by the management and the true beliefs, values, attitudes and behaviours of the construction workers. Evidently, near misses, incidents and accidents are still occurring in the construction site despite the various measures taken by the authorities as well as management in an organization. The finding reveal that, there are minor and major accidents occurring involving injury, disability and fatality and this is one thing that worries. This statement is strengthen with an argument by Hui-Nee (2004), although the rate of accident showed a decline from 2000 to 2008, statistics seemed to remained constant. In fact, as reported by Department of Occupational Safety and Health, the rate of accident involving Non-disability, disability and death in the construction sector was still high in comparison with other sectors (Hui-Nee, 2014). The statement is supported by a report released by the Department of Safety and Health, entitled Occupational Accident Statistics by Sector 2018, which has recorded about 234 of permanent disability cases, 260 death cases and 4537 Non-disability cases in 2018 (DOSH, 2019).

The findings also highlighted that the management has taken additional initiatives such as safety training, toolbox briefing and safety modules to enhance safety awareness among the construction workers. In addition, to ensure that safety objectives are met, strict supervision by the supervisors and effective safety policies and regulation have been implemented at each site. The result are in line with other research as studied by Rosmani (2007), most of the companies believed that a successful safety control programmes are based on a strong support from the management, including ongoing efforts in securing safety training, regular communication between management and construction workers, an update work procedures, as well as efficient and effective safety policies (Rosmani et al., 2007). Thus, most of the construction project in Malaysia has implemented safety policies and strict enforcement by the authority is a must (Tan & Razak, 2014).

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Based on the findings, in an effort to achieve the safety objectives, a legislative and procurement approach has been implemented whereby; safety items and clauses are included in the contract project and each of the subcontractors is obliged to price the item. This enables the subcontractor to work on the safety aspects of their construction workers. Although there is no standardized form or terms for domestic subcontract, it is procured directly by the main contractor to carry out part of the work for which has stated in the main contract which clusters the entire contract under quality, safety, health and environment clauses (Huda, Mohd, & Ismail, 2015).

Safety practises among the construction workers at operational level is still a concern as stated during the finding. The workers behaviour and attitude of laziness, stubborn and reluctance to obey the safety requirement is the main cause of accident to occur at the construction site. Various reasons such as lazy, difficult, and tasty are often associated with failure to comply with safety instructions and safety procedures. The statement is further support by the arguments by Rahim, Zaimi and Bachan (2008), unclear job scope and incorrect work procedure is one example of unsafe methods and poor safety practises. Furthermore, negligence and careless in obeying to the safety instructions was one of the human factors leading to an accident at the construction site (Abdul Rahim, Muhd Zaimi, & Bachan, 2008). In conclusion, there are various approaches undertaken by the management in ensuring the safety at the site, but the accidents is still occurring due to weak safety practices at the operational level. As stressed by Krishnamurthy (2006) most of the construction workers did not practise safety is due to carelessness, over-confidence, negligence and ignorance. Workers behaviours and attitudes that often disobey with safety requirements lead to accidents. Thus, efforts to reduce accidents and incidents are not achievable.

Conclusion

Based on this study, it is clear that near misses cases, injuries and accidents at the construction site are still occurring although several steps and precautions has been taken at the management level. Many researchers and industrial players are aware of this matter and they have made various approaches to reduce the accident rates in the construction sites. Top management has provided several initiatives such as safety training, toolbox briefing and safety modules in ensuring that the safety practices at the workplace are maintained and complied by every construction personnel at the site. Furthermore, temporary organizations have also had worked to reduce the level of accidents at site and enhance the level of safety awareness among construction workers by implementation of safety supervision, enforcement of safety rules and regulation, and allowance for safety clauses in the construction contract. However, safety practices at the operational level are still weak and unsatisfactory as near misses cases, injuries and accidents still happen among construction workers. Obviously, the level of awareness among construction workers is still low and may result in negligence of the workers. Hence, it is crucial to look at this issue prudently in order to identify the actual problem on why construction workers do not comply with safety practices and how to change this unpleasant culture.

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