Commuting Accidents Within Construction Sectors: A Review of Case

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Abstract. Road traffic accidents are the leading cause of death in most countries, and the eighth leading cause of death worldwide. In Malaysia, this situation is particularly alarming when data obtained from the Road Safety Department shows an increase in the number of road accidents over time. Zooming in to accidents involving employees working in organizations, a major concern emerged since a recent statistic from the Social Security Organization (SOCSO) of Malaysia shows that accidents reported to SOCSO increased from 61,552 cases in 2012 to 69,980 cases in 2017. Although covering both industrial and commuting accidents, SOCSO’s data on the latter for the construction sector recorded a total of 1,913 accidents in 2012 and continues to increase dramatically to 3,386 accidents in 2016, which among the highest within all industry sector. Defined as an accident while travelling back and forth to official business (from or to the workplace), previous data on commuting accidents for one of the nation’s crucial sector are further dampened the existing negative image of safety in construction. Furthermore, this issue has resulted in an increase in mortality, an extensive compensation claims, and losing valuable talent. Thus, following the hard-cold data presented by the paper, an initiative for a full-fledge research undertaking are in the pipeline. This to ensure a holistic solution for the problem in hand and ensuring improvement for safety and health of construction personnel particularly during commuting.

1. Introduction
According to Peden et al 2004, road traffic injuries are the leading cause of death in most countries, with an estimated 1.2 million fatalities, and the number of victims of injuries can reach 50 million worldwide each year [1]. Additionally, it is also the eighth leading cause of death throughout the world and the leading cause of death for young people aged between 15 to 29 years old as reported by global status report on road safety [2].

In general, by referring to Figure 1, the statistics of road accidents in 2014 is 476,196 cases in which 6,674 cases of fatalities, and were dramatically increased with 45,270 cases difference in 2016 (Road Safety Department of Malaysia, 2016). As shown in Figure 2, the rate of deaths of road accidents rose beginning from 2011 to 2013 (approximately 6,915 death cases in 2013), and the rate of death of road accidents have slightly decreased in 2014 (6,674 death cases in 2014) but gradually increased from 2015 (6,706 death cases) to 2016 (7,152 death cases) [3]. In other words, it is equivalent to 18 to 20 lives were lost in accidents every day.
Due to that, a major concern emerged towards organization when it is involving their human capital [1]. Commuting accidents can be happened while employee is travelling (back and forth) on the direct way between the place of work to their place of residence (or stay), or to the place where for any reason which is directly connected to their employment, or to the place where they usually takes their meals during any authorized recess [4]. Unfortunately, in line with overall nation’s accident data, the number of accidents during commuting was also increasing every year and it became a major problem in the organization and the government.

2. Commuting accidents in Malaysia
Commuting accidents are defined as accidents occurring on the route between the worker's home and the job site as well as the route from worksite to residence [1]. Apart, the definition of commuting accident can be found in Section 24 of the Employees’ Social Security Act 1969 which states that “commuting accidents are accidents arising out of and in the course of employment occurred while the employee is travelling on the direct way between the place of work and: (a) the worker’s place of residence or stay; (b) the place where for any reason which is directly connected to his employment; or (c) the place where the worker usually takes his or her meals during any authorised recess” [4]. Meanwhile, the International Labour Organisation (ILO) defines the commuting accidents as “an accident occurring on the habitual route, in either direction, between the place of work or work-related training and: (1) the worker’s principal or secondary residence; (2) the place where the worker usually takes his or her meals; or (3) the place where he or she usually receives his or her
remuneration; which results in death or personal injury” [5]. Therefore, by looking at the definition provided by several sources, the difference between "normal accidents" and "commuting accidents" is very clear. In short, the commuting accidents would bring meaning to an accident that occurred on the route authorized by the employee on a daily or intended basis.

In Malaysia, the occurrence of accidents becomes a major concern with the increase of cases every year, especially on commuting accidents. Commuting accidents are often linked and are considered equal to road accidents because they both happen when on the road. Both types of accidents are seen as serious until the World Health Organization (WHO) has held consultations since 2001 and has provided a 5-year WHO strategy to provide preventative measures related to road traffic [6]. According to Peden et al., 2004, road traffic injuries are a major cause of death in many countries, with approximately 1.2 million mortalities, and the number of injured people could be as high as 50 million worldwide annually [1]. As reported by SOCSO, in 2011, there were 3 cases of work-related deaths that occur every day in which 2 cases were associated with accidents while commuting.

Figure 3. Number of accidents reported to SOCSO in 2012 to 2017 [7–13]

Aside, focusing on segregated data, Figure 3 shows the number of industrial accidents and the number of commuting accidents in Malaysia. It can be seen that the number of accidents reported to SOCSO which including the industrial and commuting accidents were increased steadily over the year [7–13]. Within the figure, the statistics of industrial accidents do not show any sign of reduction for the last three (3) years, where topped by 36,661 cases in 2017 [14]. Whereas a quite similar trend can be seen for commuting accidents’ data, the number keeps swelling over the years, and finally reaching to 33,319 cases in 2017 [14].

Therefore, the case is seen as paramount to many parties and more effort is needed to prevent this problem – given the spill-over effects to the persons involved as well as the sustainability impacts to organizations. For instances of significant downsides, accidents may greatly affect the employer due to the costs of compensation, loss of workdays, and reduced the productivity in an organization. Nevertheless, it can be said that the impact of commuting accidents is greater when compared to industrial accidents be-cause commuting accidents normally involve multiple injuries and the injuries sustained during these accidents are far worse and traumatizing when compared to the workplace accidents [5].

2.1. Accidents reported to SOCSO

In order to delve deeper into available data which focusing on organizations workers’ accident, record from Social Security Organization (SOCSO) are obtained. Given that SOCSO is a sole government-led body that maintains Malaysian workers’ social security and responsible to disburse compensation-claim, their insight on industrial accidents is commensurate. According to their latest record, as shown in Figure 4, the number of accidents continues to rise steadily and finally reaching to 69,980 cases in
2017. This, in a way, indicates that efforts at realizing Sustainable Development Goals (SDGs) which require a 50% reduction in road fatalities by 2020 are still far from sufficient [2].

![Number of Accidents Reported to SOCSO (2012-2017)](image)

**Figure 4.** Number of industrial accidents and commuting accidents reported to SOCSO in 2012 to 2017 [7–13]

### 3. Commuting accidents in Malaysia

In assuring the economic growth, the construction industry plays a key role in providing facilities and infrastructure for the country. According to the Tenth Malaysia Plan (10MP), in 2011 until 2015, the construction sector has shown a positive impact on innovation and productivity aspects [5, 15]. However, this achievement is slightly disfigured and affect the image of the construction industry as a whole due to the number of accidents in the construction sector. An increase in the number of accidents contributes to the safety issues where statistics have shown that the construction industry is a very dangerous industry due to the high mortality rate [5]. Although the construction sector is not the highest sector which contributes to the increased of commuting accidents, the construction sector was ranked fourth and slightly affected by the increase in accidents in Malaysia (Referring to Table 1). When it comes to the construction industry, the industrial accidents are often attributed as the number one cause of accidents, but the fact is, the percentage of accidents related to industrial accidents is not constantly increasing over the years. As shown in Figure 5, the statistics obtained from SOCSO clearly show that the number of industrial accidents in the construction sector has increased in recent years. However, the amount of the increase is seen not too significant compared to the increasing number of accidents while commuting from year to year.
Table 1. Number of accidents reported to SOCSO according to sector for 2012 to 2016 [11]

| Sector                                           | 2012  | 2013  | 2014  | 2015  | 2016  |
|--------------------------------------------------|-------|-------|-------|-------|-------|
| Agriculture, fisheries and forestry              | 2,267 | 2,249 | 2,135 | 1,848 | 1,946 |
| mining and quarrying                             | 426   | 411   | 453   | 346   | 363   |
| Manufacturing                                    | 16,684| 16,145| 15,323| 15,153| 15,768|
| Electrical services, gas, water and sanitation   | 791   | 791   | 905   | 875   | 922   |
| Construction                                     | 5177  | 5,908 | 6,552 | 6,301 | 7,338 |
| Trading                                          | 9902  | 10,133| 9,618 | 9,185 | 9,125 |
| Accommodation and food and beverage service      | 2129  | 2,209 | 2,052 | 2,037 | 1,904 |
| Transportation and storage                       | 3894  | 4,002 | 4,178 | 4,008 | 3,619 |
| Financial activities and Takaful insurance       | 1088  | 1,231 | 1,452 | 1,648 | 1,800 |
| Real estate, renting and business activities     | 5384  | 5,438 | 5,445 | 5,156 | 5,223 |
| Public administrators and defense / security     | 13810 | 15,040| 15,218| 16,280| 18,610|
| activities are mandatory                         |       |       |       |       |       |
| **Total**                                        | 61,552| 63,557| 63,331| 62,837| 66,618|

Figure 5. Statistics of commuting accidents and industrial accidents for construction sector in 2012 to 2016 [11]

On the other hand, Figure 6 shows the percentage of commuting accidents occurred according to the occasion. As shown in Figure 6, commuting accidents often occurred on the way to or from work with a percentage of 90.03%. Meanwhile, 5.03% occurred during lunch hour and 4.94% occurred due to other issues. This situation seems very worrying because due to the 90.03% of commuting accidents that occurred on the way to or from work can lead to fatal accidents by 89.9%, as shown in Figure 7. While 5.03% of commuting accidents occurred during lunch hour can lead to 4.5% death, and 4.94% of commuting accidents occur due to other issues also contribute to 5.6% accidents resulted in death. Commuting accidents are seen as very serious as the number of fatal accidents resulting from commuting accidents increases each year. In addition, based on reports obtained from SOCSO (as seen in Figure 8), commuting accidents often occur at locations located only 1 km to 5 km from the workplace. The distances between 1 km to 5 km from the workplace recorded the highest percentage (31.9%). Whereas, for location less than 1 km from the workplace had the second-highest percentage, with the percentage of 23.1%, 23% for location of the distance between 5 to 10 km, and 22% for the area above 10 km from the workplace. This situation is particularly alarming as the frequency of commuting accidents only occurs 1 km to 5 km from the workplace.
3.1. Accidents reported to SOCSO in construction sector

By referring to the unpublished statistics of sectoral commuting accidents by SOCSO (see Table 1), the construction sector is listed among the top four sectors which contribute to the increase in the number of commuting accidents and this phenomenon is considered as alarming. Figure 5 shows the number of commuting accidents in the construction sector in 2012 amounted to 1,913 cases, and this number keeps increased to 3,386 cases in 2016. The reported number of commuting accidents in the construction sector has steadily increased over the years as shown in Figure 5.

Referring to reports obtained from SOCSO (refer to Figure 9), the commuting accidents in the construction sector often occurred while travelling to or from work. As can be seen, in 2012, there were 2,458 cases occur due to accidents while commuting, and 1,678 cases occurred when going to and from work, 119 cases occurred during official business, and the remaining 116 cases occurred during break time. In 2013, the number of commuting accidents increased further to 3,030 cases. There are 2,145 cases during the journey to or from work, 112 cases during official business and 121 cases occurred during breaks. In 2014, the number of commuting accidents continued to increase to 3,487 cases. There are 2,351 cases occur when going to and from work, 183 cases during official business and another 151 cases occurred during breaks. In 2015, there were 3,604 cases of commuting accidents reported to SOCSO. There are 2,375 cases of accidents occurred while commuting to or
from work, 199 cases of commuting accidents occurred during official business, and another 150 cases occurred during break time. In 2016, there were 4,336 cases of commuting accidents reported to SOCSO. A total of 2,994 cases of commuting accidents occurred on the way to or from work, 237 cases occurred during official business, and another 155 more commuting accidents occurred during lunch hour. Figure 9 shows the number of accidents reported specifically for the construction sector and the number of commuting accidents that occur while travelling from or to the workplace the highest reading per year. While the difference in the occurrence of accidents during official business and at break time showed no significant differences. However, the pattern of accidents while performing official duties keep increased from 119 cases of commuting accidents in 2012 to 237 cases of commuting accidents in 2016. However, the number of commuting accidents occurred during break time does not show a significant increase each year, and the incremental increase each year is very little, but the accident rate also shows a year-over-year increase of 116 cases in 2012 to 155 cases of accidents involving commuting accidents during the break time. Although the increase in the number of accidents is not noticeable, the situation is particularly alarming as the number of accidents continues to increase over the years.

![The Number of Accidents According to The Time of The accident Focused on The Construction Sector (2012-2016)](image)

**Figure 9.** Number of Accidents Reported to SOCSO According to the Occasion of Accidents Specifically for Construction Sector (2012-2016) [12].

The construction industry continues to be labeled as one of the most dangerous industries due to its high mortality rate [13], and indirectly affect the reputation of the construction sector. Therefore, immediate action is essential to address these issues from being worse, and at the same time, the improvement of the construction industry image can be achieved. In addition, Rahim et al. (2008) also emphasized that safety aspects are often considered insignificant, and many employers do not set comprehensive policies for accidents and prevention, and only focus on maximizing profitability in the business [6]. This situation often occurs in the construction sector. On the contrary, it is thought that by providing a safe and healthy work environment, the cost of running the construction business can also be minimized. This situation considers being true, especially when the loss of property and accidents frequencies directly resulted in the delay of the operation which led to an increase in costs [6]. Therefore, through the national agenda of the Construction Industry Transformation Program (CITP) by Construction Industry Development Berhad (CIDB), through its mission, is to mitigate the safety standards and administrate within the industry. As one of the key pillars in the CITP agenda, several forward initiatives are being undertaken to assist in improving the level of safety in the construction industry [6].
4. Commuting accidents in Malaysia

The increasing number of accidents involving Malaysians commuting to work has seen the SOCSO paying out a staggering Ringgit Malaysia (RM) 720 million compensation in the last one and a half years of 2011. A total of RM 400 million was paid out to SOCSO contributors in 2010, while up till June of 2011, RM 320 million was disbursed. A large portion of the compensation was disbursed to the motorcyclist who suffered serious injuries as a result of accidents. The effect of the compensation paid by SOCSO, an increasing number of injuries, disability and death faced by workers were also increased.

Figure 10 shows the number of cases related to the commuting accident reported by SOCSO specifically to the construction sector. Based on Figure 10 below, it can be seen that commuting accidents involving temporary disability recorded the highest number of cases each year. Meanwhile, the accidents resulted in permanent disability are the second-highest cases and the accidents resulting in death, recorded the lowest amount that contributes to commuting accidents in the construction sector. As can be seen in Figure 10, the number of accidents in 2012 involving permanent disability was 545 cases, accidents involving temporary disability were 1,860 cases, and another 53 accidents causing accidents leading to death. In 2013, the number of commuting accidents involving permanent disability further increased to 652 cases, while cases involving temporary disability decreased by 21 cases of 1,838 cases in 2013, while the number of accidents involving fatalities increased by 486 cases in 2014 to 539 cases. In 2014, an accident that results in permanent disability further increased to 802 cases, the number of cases related to temporary disability continued to increase to 2,605 cases, and accidents resulting in death was reduced to only 80 deaths. By 2015, the number of accidents resulting in permanent disability further increased to 880 cases in 2015, an accident involving temporary disability was also increased from the previous year to 2,651 cases in 2015, and accidents involving death was reduced to 73 cases. In 2016, accidents related to disability continued to rise and recorded a total of 949 cases, accidents involving temporary disability in 2016 also continued to increase and recorded the highest number during 2012 to 2016, with 3,294 reported. While accidents involving death also increased by 19 cases and recorded a total of 92 cases reported in 2016.

According to the unpublished statistics regarding the number of cases reported to SOCSO, the number of accidents that resulted in injuries to employees is increasing from year to year. If the problem persists, the amount of compensation to be paid by SOCSO will also continue to increase from year to year. Therefore, strategies and preventive measures are needed to ensure a safe and healthy working environment in order to reduce the cost of doing business in the construction sector. In addition, the frequent occurrence of accidents and property losses have a major impact on construction companies. Not only causes delays in operations but also may result in direct and indirect loss such as life and property (direct losses) and social and economic (indirect losses). Therefore, the issues related to commuting accidents cannot be taken lightly as the implications for these issues are significant.
5. Conclusions

Globally, road traffic injuries are a leading cause of death in many countries including Malaysia. It is a major concern when accidents involving employee when they work in an organization and it is equivalent to commuting accidents because the employee is commute under the arrangements relating to the organization. This is also a concern for the construction sector is an industry sector that contributes to the country's development. However, at the same time, the construction sector is also associated with dangerous sectors when it comes to safety aspects. The reports obtained from SOCSO reinforced the facts on the construction sector, as the construction sector is dominated by the highest sector which also contributes to the increasing number of commuting accidents in Malaysia. Through this study, the issues related to commuting accidents, especially to the construction sector, have been gathered to see clearly how far accidents affect a country as well as employers. Commuting accidents not only affect the workers but also to the employer and the country. For example, if the recurring accident continues to be left unmanaged, employers will also need to find new workers and employers will lose skilled workers and will have to invest capital to provide training for new workers. This is a loss that most people, especially employers, have to deal with. Referring to the problems presented, the author believes to take steps to further research through qualitative and quantitative approaches to demonstrate the strategic implementation of safe handling of travel among construction practitioners.

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