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**THE INFLUENCE OF EMPLOYER AND SUPERVISOR SAFETY
MANAGEMENT ON SAFETY PERFORMANCE IN SME
MANUFACTURING**

BY

ALICE KHO HUI FEEI



Thesis Submitted to

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Management



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ABSTRACT

This study was conducted with the purpose to determine the influence of employer and supervisor safety management on safety performance in Small Medium Enterprise manufacturing sector registered under an audit firm based in Selangor. Set of questionnaires encompassed of the independent variables namely safety concern, safety motivation, safety policy and supervisor safety management and the dependent variables represented by safety performance dimensions were distributed to the employees in the manufacturing sector. A total of 165 questionnaires were distributed randomly. Correlation and multiple regression test were used to analyse the data. The correlation results showed that all the variables were positively and significantly related with the dependent variables. Based on the multiple regression test, the findings of the study revealed that safety concern, safety policy and safety motivation were significantly and positively related to safety performance. However, supervisor safety management influence on safety performance was not significant.

Keywords: Employer Safety Management, Supervisor Safety Management, Safety Concern, Safety Motivation, Safety Policy, Safety Performance

ABSTRAK

Kajian ini dijalankan bagi menentukan hubungan antara kepimpinan majikan dan penyelia dalam pengurusan keselamatan dengan prestasi keselamatan di kalangan pekerja perusahaan kecil sederhana dalam sektor pembuatan di Selangor yang didaftarkan dalam rekod sebuah syarikat audit. Borang kaji selidik yang merangkumi pembolehubah tidak bersandar iaitu keperihatinan keselamatan, motivasi keselamatan dan polisi keselamatan dan pembolehubah bersandar iaitu prestasi keselamatan telah diedarkan kepada pekerja di sektor pembuatan. Sebanyak 165 borang soal selidik telah diedarkan kepada populasi sasaran secara rawak. Dalam kajian ini, ujian korelasi dan regresi berganda telah digunakan bagi menganalisis data kajian. Hasil kajian menunjukkan bahawa keperihatinan keselamatan, motivasi keselamatan dan polisi keselamatan mempunyai hubungan yang positif dan signifikan terhadap prestasi keselamatan. Walaubagaimanapun, kajian menunjukkan bahawa pengaruh pengurusan keselamatan penyelia terhadap prestasi keselamatan adalah tidak signifikan.

Kata Kunci: Pengurusan keselamatan majikan, Pengurusan Keselamatan Penyelia, Keperihatinan Keselamatan, Motivasi Keselamatan, Polisi Keselamatan, Prestasi Keselamatan

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LIST OF ABBREVIATIONS

DOSH	Department of Occupational Safety and Health
SOCSSO	Social Security Organization
SME	Small Medium Enterprise
GDP	Gross Domestic Product
FMA	Factories and Machinery Act
OSHA	Occupational Safety and Health Act



CHAPTER 1

INTRODUCTION

Workplace injuries and accidents are still the most significant problems in industries today (Takala et al., 2014). Workplace injuries and accidents resulted in damaging consequences for employees as well as the organizations (Sheehan, Donohue, Shea, Cooper, & De Cieri, 2016). On top of that, performance of SME may be disrupted as the accidents may lead to economic losses and contribute a direct cost to SMEs. Safety is also one of the major concerns for an organization as it not only impacted the direct costs but also the indirect costs as well (Neal & Griffin, 2006). Direct costs consist of medical costs, employer expenses, administrative expenses and loss in production and other immeasurable costs that can adversely affect the organization such as lost time of production due to stop work, repair of machinery, training the new replacement worker and overtime (Grindle, Dickinson, & Boettcher, 2000). The costs to the injured employees and their families in terms of emotional misery are inestimable.

Worldwide, it is projected by International Labour Organization and other bodies, where around 2.7 million of women and men die due to the work associated accidents or diseases, which is 19% higher than 2.33 million estimated in 2014. Around 380,500 work associated accidents and 160 million suffered due to occupational related illnesses reported annually. This update indicated a rise in the number of accidents and ill health (ILO, 2018).

While looking in Malaysia statistic based on PERKESO Annual Report, total number accidents reported recorded at 69,980 in 2017, 66,618 in 2016, 62,837 in 2015, 63,331 in 2014 and 63,557 in 2013. The number of industrial accidents reported are

36,661 in 2017, 35,304 in 2016, 34,258 in 2015, 35,294 in 2014 and 35,898 in 2013 from overall number of accidents reported. Statistics showed that number of cases reported for industrial accident at year 2015 decreased. However, a continual increase of cases showed in 2016 and 2017 (PERKESO Annual Report, 2017).

According to DOSH record, the number of accidents resulting in temporary disability remain relatively high and the number of cases showed a rebound in number of cases between 2014 from 1,510 to 1,906 in 2015 then dropped to 1,751 in 2016. Up to October 2017, the number of cases reported recorded at 1,559 (DOSH Annual Report, 2017).

Tan Sri Lee Lam Thye also indicated that the increase of accident rate in manufacturing at 3.84 percent from 35,305 cases in 2016 to 36,661 cases in 2017 is worrying and hope that this statistic number will create awareness among the society and the employer (Harian Metro, 2018).

In order to realize the country strategy towards better health and safety of the workers to protect our human resource, Occupational Safety and Health Master Plan (OSHMP) 2020 has identified some of the objective and action required which included reduction of death rate to 4.36/100,000 workers, reduction of accident rate to 2.53/1,000i as well as thirty percent increment in reporting of disease and poisoning of workers by year 2020.

Accidents take place due to various contributing factors. Main category including unsafe environments and unsafe practices (Chan et al., n.d.). Health and Safety Executives (2002) concluded that approximately 80% of the accidents is contributed by human behaviour factor. Various studies were carried out by different researchers to study and identify the root causes associated to safety performance among workers

consisting of industry including nuclear plant, manufacturing, mining, oil and gas as well as construction (Wu, Wang, Zou, & Fang, 2016; O'Dea & Flin, 2001; Martínez-Córcoles, Gracia, Tomás, & Peiró, 2011; Amirah et al., 2013; Grindle et al., 2000).

In 1930, Heinrich presented about domino theory or also known as the accident causation theory (Heinrich, 1950). Research on thousands of insurance and injuries including illness reports were carried out by. In the reports, 73% of the accidents due to human fault. Heinrich concluded that negligence of workers caused up to 88% of accidents, unsafe conditions caused up to 10% of accident; and the remaining by acts of God. Heinrich further research and review that the injuries are attributed by the workers involved in unsafe actions. Several reasons which motivates unsafe behaviour including work pressure and lack of safety participation among workers. Implementations of engineering control measures are essential to abate the unsafe acts and unsafe work behaviour amongst workers.

In the study, Heinrich reviewed that the interaction between machine and man, the relationship between rate of occurrence and severity, the reasons behind the perilous action, the cost of accidents, the role of management in prevention of accident along with the effect of safety on efficiency were interlinked under the theory of accident causation. Accident prevention is defined as activities that is directed to control the unsafe individual performance and unsafe environments by applying certain knowledge with the right abilities and attitudes. Later on, Petersen (1982) described that the fundamental reason behind accidents are due to human being and management has the capability to prevent accident and need to be accountable in prevention of accidents based on Heinrich works.

Studies also revealed that employees unsafe work practices are the cause of injuries and accidents rather than unsafe working environments (Garavan and O'brien, 2001). Mullen, (2004) also indicated that organizational and social factors influenced safety performance. Safety performance is important because it shaped and promoted the context of development of individual safety attitudes (Zohar, 1980).

1.1 Background Study

Safety performance referred to numerous types of safety output ranging from employee safety behaviours such as usage of personal protective equipment, compliance to the procedures, participation in meetings related to safety, till the extend of organizational level safety outcomes such as injuries. Safety performance is also used interchangeable with safety behaviour by the researcher for instance in the research conducted by Mullen et al (2017), the study reviewed on safety performance based on safety participation and safety compliance as independent variables. In the study conducted by Kapp (2012) reviewed how safety compliance and safety performance is influenced by the leadership styles as the elements of employer safety behaviour in construction industries. In another study conducted previously by Griffin and Neal (2010) where the researchers indicated that work behaviours relevant to safety can be conceptualized in the same way as work performance and proposed two major components of performance which are safety compliance and safety participation. The study conducted by Vinodkumar and Bhasi (2010) also interchanged the terms safety performance and safety behaviour and define the elements as safety compliance and safety participation. Whereas in the study conducted in a Spanish firm used the term safety behaviour that incorporated the same dimensions namely safety compliance and safety participation (Fernánidez-Muñiz, Montes-Peón, & Vázquez-Ordás, 2014).

Gilbert (1998) indicated that behaviour is the element of performance which has two aspects, consist of the means and its consequence being the end. Behaviour is defined as action or attempt of an individual to bring some state of changes from one to another or to maintain an existing state (Bergner, 2011). While in another study conducted, behaviour is defined as the way a person acts or behaves. It describes the reaction of people towards something under a specific circumstance (Hong, Surienty, & Mui, 2011). Behaviour can be seen as how people react according to his or her motivation under specific conditions (Johnson, 2003).

Safety performance is also introduced as safety compliance, safety participation and risky behaviour in another study conducted by Martínez-Córcoles, Gracia, Tomás, & Peiró (2011). Empowerment of the leader influenced the employees' perceived safety behaviours and this is positive in both weak and robust safety cultures.

Safety performance is conceptualized as two types of major behavioural components namely safety compliance and safety participation (Cooper & Philip, 2004; Neal et al., 2000). Safety compliance refers to the core activities individuals need to carry out to maintain workplace safety. Flin (2000) described safety compliance as the behaviours focusing on meeting minimum safety standards at work in order to maintain workplace safety such as complying to certain set of safety procedures, wearing personal protective equipment and carrying out work in a safe manner. These behaviours include adhering to standard work procedures and wearing personal protective equipment. In the study done by Flin (2000) indicated safety participation refers to the behaviours that indirectly contribute to individual's personal safety but assist in developing an organization environment that supports safety (Neal & Griffin, 2002) such as voicing out the concern on the matters about safety (Tucker and Turner,

2015) or the initiative in participating safety activities and programs voluntarily (Creei andi Kelloway, 1997). This is also indicated in the study conducted by Vinodkumar and Bhasi (2010) that safety participation describes behaviours that indirectly contribute to an individual's personal safety and in the same time help to develop an environment that supports safety.

Safety performance could be assessed by two dimensions including safety compliance and safety participation. This is adapted from Campbell et al. (1993), Borman and Motowidlo (1993), Neal et al (2000), Neal and Griffin (2002, 2006), Lu and Yang (2010). Safety performance measured primarily based on accident or injury data traditionally. The use of proactive measures of workers' perception of safety is thought to be one of the most useful indicators of safety performance (Borman and Motowidlo, 1993; Broadbent, 2004). In another study conducted by Shang, Yang and Lu (2011), safety performance is measured with alternative measurement which is perceptual based measures which is also adapted in this study based on self-report of safety behaviour and perceptions. This is also used by several researchers including Neal et al., (2010), Lu and Shang (2005).

According to Henrich theory, safety performance in employee leads to accident. Bowander (1987) later concluded that factors contributing to workplace accident are namely engineering factor, system failure factor, technological factor as well as human safety behavioural factor. In another research done by Gyekye (2010) it was identified that apart from the unsafe condition of the working environment, workers safety performance (unsafe act) is the fundamentals which contributed to work-related accident.

Thus, human factor is one of the significant factors that should be studied as it is the main contributor to the occurrence of workplace accidents. This is also supported based on the research carried out where it is believed that positive safety performance could lead to prevention of accident at workplace (Makin & Sutherland, 1994; Christian, Bradley, Wallace, & Burke, 2009).

1.2 Problem Statement

Regardless of the uncertainties in the world economy, small and medium enterprises (SMEs) in Malaysia has expended at a fast pace and contributed to Malaysia growth of economic where in accordance to SME Annual Report 2016/2017, Gross Domestic Product (GDP) growth of 4.2% were recorded by SMEs during the year of 2016 and contributed to 36.6% of the country's GDP and reflected across all major economic sectors with manufacturing contributing to the biggest percentage of 7.9% after services at 21.8%.

Beside that, majority of SME also focused within peninsular Malaysia. The highest percentage of SME recorded at 19.8% in Selangor, trailed by 14.7% in Wilayah Persekutuan Kuala Lumpur. Johor came third with 10.8% followed by Perak 8.3% out of total 907,065 SME establishment according to Economic Census, 2016, Department of Statistics Malaysia (DOSM).

Rapid growth of the economic via industrialization has resulted in positive significant influence to the income and quality of life. However, the drawback of the industrialization included increasing number of occupational accident (Amirah et al., 2013). In Malaysia, a similar trend was observed where the number of SME in Malaysia expended at a fast pace, the number of incidents in Malaysia remained high despite various action taken (Koo, Surienty, & Hung, 2011). Looking at Malaysia statistics

based on DOSH report, the number of non-permanent disability still remain relatively high and the number of cases showed a rebound in number of cases between 2014 from 1510 to 1906 in 2015 then dropped to 1751 in 2016. Up to October 2017, the number of cases reported recorded at 1559 (2017).

SME is also noted as one of the main contributors to the occupational accidents where SME recorded about 80 (Thye, 2010) to 90 percent of the total occupational injuries according to SOCSO (Surienty, 2012).

The level of occupational safety and health in multinational companies and SMEs varies. It was identified that SMEs generally has a more inferior level of OSH compliances compared to large organization. In the bigger multinational companies, they often have the sufficient financial funding and manpower to effectively implement the good occupational system and health as compared to SMEs (Surienty, Hong, Kee, & Hung, 2011). While in SMEs, the implementation may face many challenges that may directly or indirectly hamper the implementation as they are mainly consisting of family business with no clear structure and division of responsibilities with limited financial resources from the owner and family members. Safety measures such as setting up of documentation system, training and establishment of department in the organization requires certain financial capital which is often neglected as it could not generate direct income for the company or help in strengthening the organization. On top of that, SME may not have experienced any serious work-related injury and tend to result in them giving lower priority to health and safety compared to other issues that may affect their businesses on a more frequent basis (McKinney, 2002).

The owners cum management hold an important role in instilling safety performance among the employees, increasing safety performance of the enterprise and

further decrease the industrial accident in SMEs. It was indicated that an effective management system program requires commitment from both the management and supervisor function where the managers developed and implement the program while the success of the program depends upon the supervisory personnel ability during the day to day operation (Agrilla, 1999).

Various studies were carried out to address the relationship between managers leadership with safety, however lesser research has been published on the relationship between the role of senior or mid-level managers with occupational safety (O'Dea & Flin, 2003; Wu, Lin & Shiau, 2010). The importance of supervisor as the key man in safety management to prevent industrial accident is also acknowledged (Heinrich, 1959; Flin, Mearns, Connor, Bryden; 2000). Study conducted by Maurino et al. (1998) also indicated that it is significant to recognize the role of supervisor and senior manager as they played an important role in organizational safety. Senior management played the role in motivating the team members to perform better as well as taking ownership in the operation (O'Dea and Flin, 2001).

Another study conducted in the construction industry also supported this where the study indicated that first level safety supervisors played the key role in translating management commitment to safety into safety practices and values within the workgroup (Lingard et al., 2012). As the supervisors have the most regular contact with the workers on site as compared to other tier management of an organization, they are one of the important elements in developing the importance of safety concept to the subordinates (Zohar and Luria, 2004). Supervisor also act as a conduit carrying out safety practices and values of top management at work site (Lingard, Blismas, & Wakefield, 2005).

In the study conducted by Zin & Ismail (2011) also indicated that a good safety performance reflected good safety compliance. It was indicated that without the intervention from the employers with particular set of behaviours, safety issue cannot be tackled effectively. Numerous levels in the organization structure as well as the various roles and responsibilities accountability, the management behaviour also poses different manifestations resulting in different workers' behaviour. Supervisor is deemed as having the most contacts with workers as compared to other management level and are the directly accountable person to promise a good safety performance.

A study conducted previously supported that the organization perceived by the employees as supportive and employees that have high quality relationships with their leader are more likely to feel the positive effect of the management commitment to safety, safety training, return to work policies and post injury administration to be of the execution of organizational safety policies, Huang et al. (2004) established that the execution of organization safety policies on safety outcomes positive effect is strengthen under robust supervisor support.

Various researches have examined supervisor management and safety (Flin and Yule, 2004, O'Dea and Flin, 2001; Zohar, 2002, Lingard et al., 2012; Lingard et al., 2005; Fang, Wu and Wu, 2015). However, not much study has been done to examine how managers' and supervisors' safety management affect safety performance. The aim of this study is to examine the effects of managers and supervisors safety management on safety performance in SMEs as the studies on these topic are very limited and mainly the focus tend to be on big firms as generally big firms employ a higher percentage of employees and have the sufficient man power to support the policy

development and research (Legg, Olsen, Laird, & Hasle, 2015 & Champoux and Brun, 2003).

1.3 Research Question

This research attempted to identify the answers for the following questions:

1. Is there an association between safety motivation and safety performance among the workers of Malaysia's SME manufacturing?
2. Is there an association between safety policy and safety performance among the workers of Malaysia's SME manufacturing?
3. Is there an association between safety concern and safety performance among the workers of Malaysia's SME manufacturing?
4. Are safety motivation, safety concern and safety policy significantly associated with safety performance among workers of Malaysia's SME manufacturing?
5. Does the perception of supervisor safety management associated to safety performance among workers of Malaysia's SME manufacturing?
6. Does the perception of supervisor safety management will significantly influence safety performance among workers of Malaysia's SME manufacturing?

1.4 Research Objectives

Founded on the problem statement identified as above, this study aims to evaluate the employee's perceptions on the manager's safety leadership and the influence towards safety performance in small medium enterprise. The research objective is to study the following:

- a. To determine whether there is an association between safety motivation and safety performance among the workers in Malaysia's SME manufacturing

- b. To determine the existence of relationship between safety policy and safety performance among the workers in Malaysia's SME manufacturing
- c. To identify the association between safety concern and safety performance among the workers in Malaysia's SME manufacturing
- d. To examine whether safety motivation, safety concern and safety policy could influence safety performance of Malaysia' SME manufacturing.
- e. To determine the relationship between perceived supervisor safety management and performance within SME manufacturing.
- f. To distinguish whether perceived supervisor safety management could influence safety performance of SME manufacturing.

1.5 Scope of Study

Despite the uncertainties in the world economy in 2016 and the lowest global growth rate in 2016, Malaysian economy registered a Growth Domestic Product (GDP) growth of 4.2% in 2016 and a strong growth at 5.7% in first half of 2017 and expected to grow more. SMEs in Malaysia continued to expand at a fast pace and despite the challenges recorded growth of 5.3% GDP. SME contribution towards GDP as well as creating the employment opportunity, in both developing countries and developed countries is undeniable (Zafar & Mustafa, 2017). While SME contributed to the country's GDP, SME is also the main contributor to the industrial accident cases as per the DOSH statistics (2018). SME's safety compliance is still relatively weak and poor (Yahaya, 2002; Surienty, 2019).

SME consist of different sectors including service line, manufacturing, construction, agriculture etc. SMEs constituted a total of 98.5% of the overall business establishments in Malaysia. While manufacturing industry is the second largest sector

after services sector, SME manufacturing sector recorded the highest growth of number of employments. On top of that, rapid growth of SME in the near future corporation is highly anticipated (SME Development, 2016).

The small medium enterprise is also the biggest contributor of the industrial accidents cases as compared to large company with a rough estimation of 80% of total occupational accident in spite of becoming the core contributor towards the country's GDP (Surienty et al., 2011). Malaysia SMEs safety standard at workplace are below the acceptance level and safety behaviour among the SME workers are found to be lacking. Furthermore, SME also possess a higher risk of workplace accident as compared to larger manufacturing firms as the latter possess a better control of workplace hazard (Saad, et al., 2011). Due to the nature of work, manufacturing sector is still one of the most unsafe industries (Walters& James, 1998).

As SMEs is lacking in the resources such as manpower, time and money for contribution, they are more vulnerable and prone towards workplace accidents and injuries thus SMEs should be given more attention. Research done by Said et al (2012) indicated that firm size determines the figure of workplace accidents in Malaysian manufacturing sector. Another research done also indicated that the fatal accidents in SMEs with fewer than 250 employees are found to be 4.9 times in Europe as compared to larger companies recorded at 1.8 (Arocena and Nunez, 2010). Despite the high accident rate, SMEs is reported to have poor implementation of safety and health legislation as reported by European Commission (Beary, 2004). SMEs involvement in the economic with the potential influence to the flourish of economic as well as social development have received growing recognition as contributor to the economy growth in term of employment and gross domestic. In most of the modern economy, SMEs

comprises of a very high percentage of total enterprises in majority of the countries and in the same time employed a large percentage of workforce (Legg *et al.*, 2015). This scenario is also the same in Malaysia where manufacturing sector comprised of 24.3% employment chances the second largest sector after services industries (DOSM, 2016).

The study aims also narrow down the scope to the SME manufacturing in Selangor as Selangor recorded the highest registered SMEs in Malaysia which contributed to 19.8% of total SMEs in Malaysia (SMECorp, 2018). Selangor manufacturing sector also contributed overall 29.4% for the state GDP and expected to be the main contributor of growth. On top of that, Selangor is also the main contributor to the growth of the GDP recorded at 23% in year 2017, increased by 7.1% as compared to 2016 and expected to grow for 2018.

The study limited to all the SMEs manufacturing sector in Selangor that is registered with GCL International Sdn Bhd as the above explained reasons. On top of that, it is beneficial for the organization to identify the safety performance level of this SMEs and the commitment of the management to understand the organization implementation stages with the additional benefits of easier management and operational purposes due to time frame. Audit of performance compliance has been conducted based on ISO 9001 management system audit but not on health and safety compliance. Based on the previous study, SME performance in health and safety is low and this could be an initial step and reference for the company to venture into client 's occupational health and safety management system.

1.6 Significance of Study

The aim of this study is for the contribution as an academic reference to the body of knowledge. On top of that this could also contribute to policy maker or

government body as additional reference in establishing the policy and guidelines. It could also contribute as reference for replication to other state and other critical sector apart from manufacturing sector.

On top of that, this study also aims to determine the factors that would contribute to the relationship between employer's safety leadership and employees' safety behaviour mainly on the safety compliance and safety participation and with the hope that the findings of this study could contribute to the SMEs by providing an alternative in their execution of the safety management system despite the shorthanded.



CHAPTER 2

LITERATURE REVIEW

Firstly, this chapter will review on the literature pertaining OSH development, OSH related rules and regulations, as well as OSH emerging issues in Malaysia. Secondly, this chapter will explore the level of OSH performance in Malaysia's SMEs, including the context of manufacturing set up. Thirdly, this chapter will review previous empirical studies on safety performance, including the its dimensions as well as distinguishing its determinants. Lastly, previous researches on supervisor safety management and safety performance within an organisation will be reviewed.

In conclusion, this chapter is expected to contribute to provision of empirical evidences on the influence of employer's safety management and supervisor's safety management attributes towards safety performance. Research conceptual framework will also be developed based on the evidences in the literature reviews.

2.1 Occupational Safety and Health Development in Malaysia

Occupational safety is a discipline which manpower's is protected from the accident related to their work (World Health Organisation, 1995; Kohn, Friend & Winterberger, 1996; Alli, 2008). The history of Occupational Safety and Health (OSH) began since 1800s in Malaysia. Department of Health and Safety (2008) recorded that Malaysia's OSH movement started in 1878 by the appointment of the first Machinery Inspector. Later on during year 1967, the Parliament approved the Factory and Machinery Act (FMA). Due to the newly enacted law, Jabatan Kilang dan Jentera (Factory & Machinery Department) was established where the post of Machinery Inspector was later on upgraded to Factory and Machinery Inspector and also Assistant Factory and Machinery Inspector with the duty to inspect the safety matters within

factories, construction sites and mining fields including the machinery. In approximately 24 years, Occupational Safety and Health Act (OSHA) 1994 (Act 514) was approved and gazetted. Considering that Factory and Machinery Act 1967 only covers occupational safety and health in certain industries which are manufacturing, mining, quarrying and construction industries, Occupational Safety and Health Act 1994 was established to covers all the industrial sectors except for the armed forces and the sea fearers. Due to this newly enacted act, The Department of Occupational Safety and Health (DOSH) was established to replace The Factory and Machinery Department. Since then, DOSH has become the custodian of occupational safety and health in Malaysia.

2.2 Industrial Accident Statistics in Malaysia

Based on PERKESO Annual Report, total number accidents reported recorded at 69,980 in 2017, 66,618 in 2016, 62,837 in 2015, 63,331 in 2014 and 63,557 in 2013. Out of this reported cases, number of industrial accidents reported are 36,661 in 2017, 35,304 in 2016, 34,258 in 2015, 35,294 in 2014 and 35,898 in 2013. Based on the reported number of cases, only in year 2015 showed a decreased of cases in both the number of cases reported as well as the number of industrial accidents reported. Continuous year showed increased in the statistical data. The accident rate per 10,000 employees reported at 103 in 2017, 101 in 2016, 99 in 2015, 102 in 2014, and 104 in 2013. Out of this, the number of industrial accidents rate out of 10,000 employees are 54 in 2017, 2016 and 2015, 57 in 2014 and 59 in 2013 (PERKESO Annual Report, 2017).

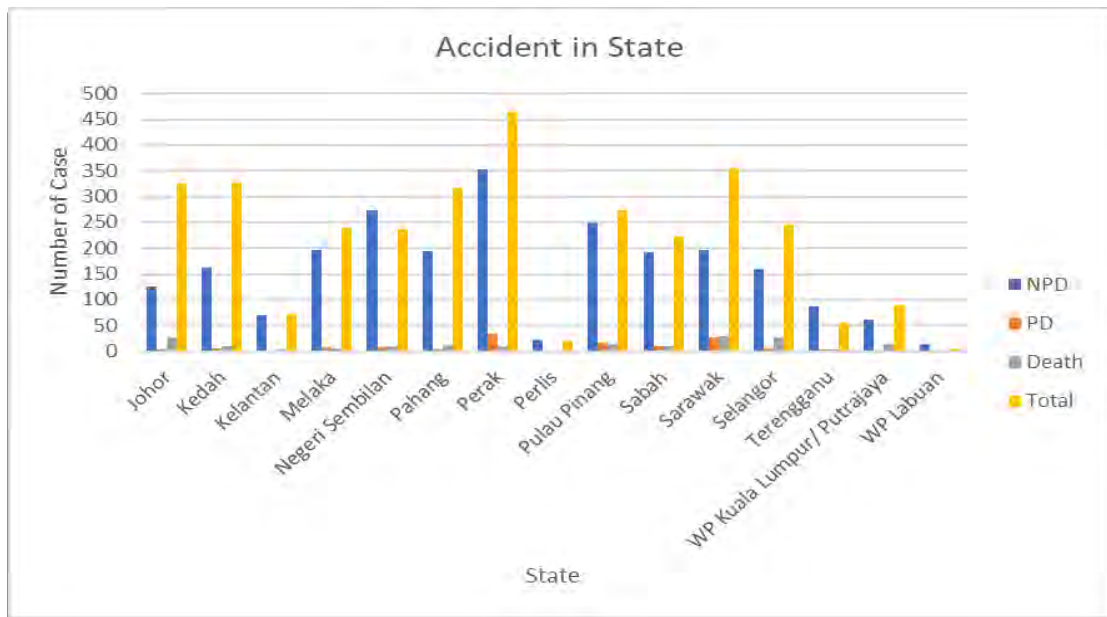


Figure 2.1
Accident recorded in each state

Based on the data obtained from DOSH up till 2018, the breakdown of accident in accordance to state indicated that total non-permanent damage in Selangor recorded at 160 cases out of 2360 cases with the highest cases reported recorded from Perak. The cases reported for permanent damage recorded 6 cases out of 127 cases with the highest record reported in Perak. Whereas death cases reported recorded 26 cases. The number of permanent damages reported in Selangor reported at 6 cases and total of 26 death cases reported. The second highest accident rate reported in Negeri Sembilan with a total of 290 cases with 274 case of non-permanent damage, 7 cases of permanent damage and 9 cases of death (Department of Occupational Safety and Health, 2019).

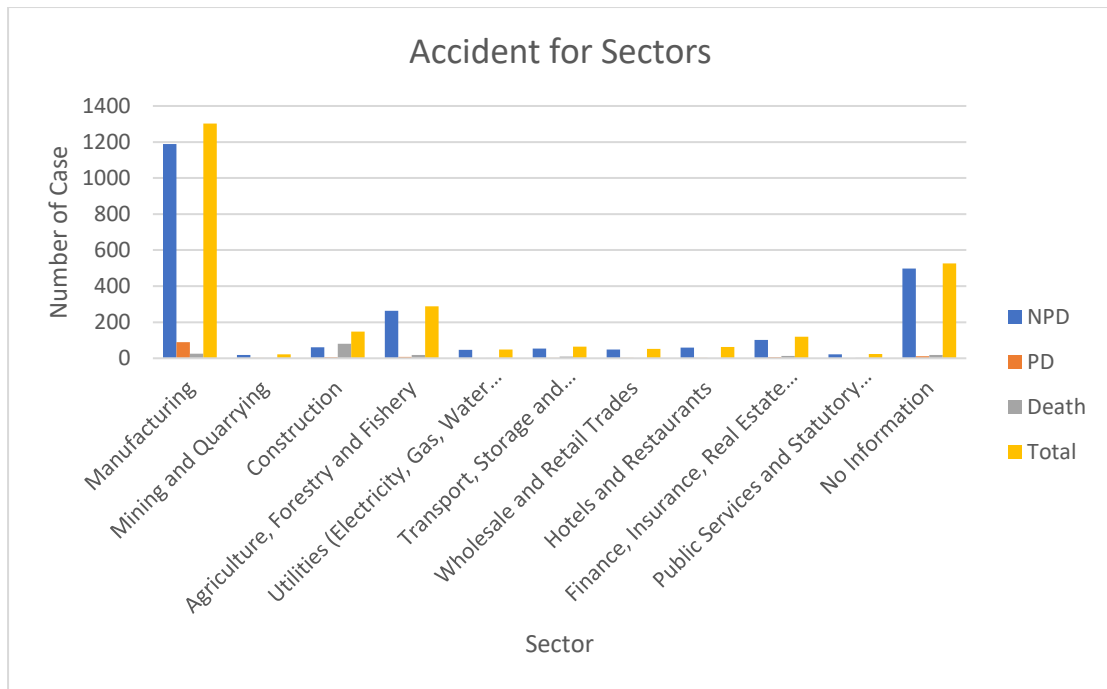


Figure 2.2
Accident recorded in each sector

Based on the recorded cases from DOSH up till 2018, the number of accident cases reported in manufacturing is recorded the highest with total of 1303 number of cases reported and the number of cases breakdown to 1188 non-permanent damage cases, 90 permanent damage cases and 25 cases of death respectively. This is followed by cases from non-identified sector with a total of 527 cases. Agriculture, forestry and fishery reported total of 289 cases and followed by construction industry with total of 148 cases. The number of cases reported respectively for mining, utilities sector, transportation, wholesale and retail trades, hotels and restaurants and public service all reported with number of cases below 100. Whereas 120 number of total cases reported for finance, insurance, real estate and business services (Department of Occupational Safety and Health, 2019).

2.3 Occupational Safety and Health in SMEs

Malaysia has robustly pushed its economic development in recent years. As the results, SMEs become vital component contributing to the growing economy in the country. Previous researchers had also agreed on the important of SMEs' contribution towards the nations' economic growth (Omar, Arokiasamy, & Ismail, 2009; Smolarski & Kut, 2009; Saleh & Ndubisi, 2006). This is supported by the statement of Phoon (2001) who affirmed that the SMEs generated 30 to 60 percent of the developing countries' GDP, showing that SME sector is the main contributor of countries' economic growth and sustainability. Moreover, Fan (2003) has identified that SMEs help in reducing poverty of many countries as they contribute to the biggest employment provider.

SMEs are defined and interpreted in many ways throughout the world in accordance to various different criteria including sales or assets, level of capital and number of employees (Mohammad, 2012). SMEs have a different set of criteria that distinguished these organization from the large sector. Organisation with less than 100 employees is defined as small business in Canada (Statistics Canada, 2013). In Malaysia, SMEs is categorized by SMEcorp based on the organization annual sales turnover or effective number of full time employee, the central coordinating agency under the Ministry of International Trade and Industry Malaysia effective 1st January 2014.

According to SME corp (2014), SMEs is defined based on criteria of sales amount and number of employees. Small enterprise for manufacturing including sales turn over between RM300,000 to less than RM15 million or employees ranging from 5 to 74 people. For business with the sales turn over in between RM15 million to less than RM50 million or employees ranging from 75 to 199 peoples is classified under medium

enterprise whereas for micro enterprise is any business with turnover of sales that is less than RM300000 or employees of less than five.

The summary of the definition is as below table:

Table 2.1
Definition of SMEs

Sector	Micro Enterprise	Small Enterprise	Medium Enterprise
Manufacturing	Turnover of sales less than RM300,000 or Employees of less than five	Sales turn over between RM300,000 to less than RM15 million or Employees from five to less than seventy-five	Sales turn over from RM 15 million to less than RM50 million or Employees from seventy-five to less than two hundred
Services and Other Sectors	Turnover of sales less than RM300,000 or Employees less than five	Sales turnover from RM300,000 to less than RM3 mil or Employees from five to less than thirty	Sales turnover from RM3 mil to not exceeding RM20 mil or Employees from thirty to not exceeding seventy-five

Source: SME Annual Report 2016/2017

Nevertheless, with the positive growth of SME projected (SME Annual Report, 2017), manufacturing sector still contributed to the high occupational accidents and injuries (DOSH statistic report, 2018; Surienty, Hong & Hung, 2011). Research also reported that during 2010 and 2012, the number of occupational accidents reported in Malaysia SMEs is between 80 and 90 percent (Aziz et al., 2015). In Malaysia, the occupational accidents still indicated that manufacturing is the highest source of contributor where the total number of injury including permanent disability, non-

permanent disability and death contributed 64% to total recorded (DOSH Statistic report, 2018).

The safety level in SMEs is weak as compared to the bigger corporation as this bigger corporation have the adequate resources financially and sufficient manpower to implement proper and effective occupational system and health as compared to SMEs (Surienty, Hong, Kee, & Hung, 2011, Masi et al, 2014). This also supported in other research indicating that small medium enterprises (SMEs) has a higher rate of major injuries, fatalities and lost days as compared to the larger enterprises due to limitation of human, economic and technological resources (Fabiano et al, 2004; Mayhew, 2000; Saloniemi and Ohsanen, 1998; Micheli and Cagno, 2010). Research conducted by McVittie et al. (1997) indicated that the size of organization does affect the number of injury where the bigger firm size indicated that frequency of injury decreases, higher level of occupational health and safety awareness, higher rate of unionization.

The study conducted by Micheli and Cagno (2010) and other publications reviewed by Cagno et al. (2011) also supported that SMEs have a higher accident rates and worse consequences compared to larger firm. Frequency of fatalities due to workplace accidents are up to eight times higher (Mendeloff et al., 2006) and 50% more chances of nonfatal are likely to happen in SMEs (Fabiano et al., 2004). It was noticed that throughout the industrialized world, the OHS performance in SMEs is poorer (Champoux and Brun, 2003; Vickers et al., 2005).

The owners cum management hold a significant role in instilling safety performance among the workers and further decrease the industrial accident in SMEs. It was indicated that commitment from both the management and supervisors is required for a successful management system program where the managers developed

and implement the program while the success of the program depends upon the supervisory personnel ability during the daily operation (Agrilla, 1999). However, under the conditions of uncertainty of economic, SMEs managers are more unwilling to spend time and funding on occupational health and safety issues (MacEachen et al., 2010, Agumba and Haupt, 2012). This could also due to the reason that the managers of SMEs are not particularly informed and no significant occupational health and safety knowledge (Masi et al., 2014).

Occupational safety and health implementation are considered as an investment to the company as it may require a large amount of financial resources. In return of the huge investment, company expected it to benefit employees within the organization. A bigger corporation with higher number of employees would benefits more people from the program and in return lower down the cost per person. However, this is irrelevant in SMEs as they have a smaller workforce and the implementation of OSH could not be measured with direct monetary gain, thus deemed as insignificant for the company survival (Lahm, 1997; McKinney 2002).

Studies shown that employer and management has the control of safety performance where on of the study conducted in the nuclear power plants supported that leaders' behaviours will influence employee safety performance during the presence of either weak or strong safety culture (Martínez-Córcoles et al., 2011). Huang et al. (2004) also established that safety outcomes was strengthen due to the positive effects of the implementation of organisational safety policies under the strong supervisor support for safety.

2.4 Safety Performance

Safety performance could be defined as the behaviour or action of a person contributing to safety of oneself and others, examples through the activities including training related to safety, compliance with requirements of occupational safety and health in workplace accidents prevention (Lee & Dalal, 2016; Zin & Ismail, 2012). Safety performance is also described as an objective to measure the attitudes and perception towards safety and health issues (Oyle, 1996).

Safety performance term is used to refer to numerous types of safety outcomes ranging from employee safety behaviours such as adherence to procedures, use of personal protective equipment, and participation in meetings related to safety, to organizational level safety outcomes like accident and injury rates (Morrow et al., 2014). Safety performance is also perceived as commitment to safety within organizations (Walker & Hutton, 2006). It is also described as employee perceptions and beliefs of safety responsibilities of the organization that is derived from societal and organizational influences (Burt et al, 2012, Walker and Hutton, 2006). Safety performance is also defined as series of event carried out by the departmental head in order to safeguard the personnel (Wu et al., 2009). Morrow et al. (2014), described safety performance as employees' beliefs and attitudes towards safety and safe working behaviours.

Safety performance is conceptualized as two types of safety behaviours namely safety compliance and safety participation. Safety performance is often measured by workplace accident rate and fatality statistics (Vinodkumar & Bahsi, 2010; Cooper and Philip, 2004). However, in the research done by few researchers Cooper and Philip (2004) suggested that safety performance should be measure with more proactive

dimensions for example safety compliance and safety participation. This is also supported in other study conducted by other researcher where safety performance is measured with safety compliance and safety participation as the dimension (Borman and Motowidlo, 1993; Broadbent, 2004, Neal et al., 2000; Neal & Griffin, 2002; Neal & Griffin, 2006; Boughaba, Chabane & Ouddai, 2014).

In summary, safety performance can be defined as the employee behaviour towards safety responsibilities which influence their attitudes towards safety.

2.4.1 The Measurement of Safety Performance

Commonly, safety performance is always measured by workplace accident rate and fatality statistics (Boughaba et al, 2014, Hagan, Montgomery & O'Reill, 2001). However, Cooper and Philip (2004) suggested that safety performance should be measure with more proactive dimensions for example safety compliance and safety participation. This opinion matched with some previous studies which emphasised that safety performance should be measured by worker's safety compliance behaviour (e.g., Cheyne et al., 1998; Griffin & Neal, 2000; Komaki, Heinzmann, & Lawson, 1980; McDonald et al., 2000; Hagan et al., 2001). Study conducted by Boughaba et al., (2014) also conceptualized safety performance based on two types of safety performance namely safety compliance and safety participation. Moreover, Ford and Tetrick (2011) stated that safety performance is multidimensions, which consists of several behaviours contributing to safety of a person.

For safety performance measurements, Burke, Sarpi, Tesluk & Smith-Crowe (2002) applied the four dimensions of safety behaviours namely use of personal protective equipment, workers engagement on reducing workplace safety and health risks, OSH communication and exercising the general OSH responsibilities of an employee as

safety performance dimensions. Similarly, Huang, Smith, and Chen (2006) also measured safety performance using the elements of safety behaviours namely employee safety control and self-reported workplace injury.

Wu, Chen and Li (2008) has developed and measured safety performance by the compliance of the employers towards aspects of OSH legislations. The dimensions are namely safety organization and management, safety equipment and measures, safety training practice, safety training evaluation, accident statistics, and accident investigation. These dimensions were the be replicated by several researches in Malaysia who performed studies in manufacturing (Nurul Hidayu Mat Jusoh & Siti Aisyah Panatik, 2016; Wahab et al., 2014; Wahab, 2011; Chua & Wahab, 2017).

Lu and Shang (2005) has taken different approach in measuring safety performance. In their study, safety performance was measured by four dimensions namely the reduction of accident's frequency, the reduction of equipment failure's frequency, the reduction of good loss's frequency and the reduction of personal injury's frequency. Shang et al. (2011) also used similar approach in measuring safety performance. The study conducted by Shang et al. (2011), safety performance measured with four dimensions namely the frequency of accidents is reducing, the frequency of equipment failure is reducing, the value of cargo loss and damage is reducing and the number of personal injuries is reducing.

Morrow et al. (2014) measured safety performance based on number of shutdown of a nuclear reactor, reported number of claims to the NRC by personnel at site, inspection report findings assigned as attributable to the ROP, human performance, problem identification and resolution area, total substantive cross cutting issue, reactor

oversight process action matrix oversight, index of chemistry performance, rate of human performance error, rate of forced loss and rate of industrial safety accident.

2.4.2 Empirical Study of Safety Performance

In the study conducted by Zin & Ismail (2011) indicated that a good safety performance or safety behaviour reflected good safety compliance. It was indicated that without the intervention from the employers equipped with a particular set of behaviour, safety issue could not be tackled effectively.

Study conducted by Martinez-Corcoles, Gracia, Ines, Peiro and Schobel (2012) conducted a study in a nuclear power plant on the effect of safety leadership on safety performance. The study concluded that effective leadership specifically empowering leaders the potential precursors of safety performance. Safety participation behaviours is enhanced by empowering leader and reduced team members' risky behaviours. This directly influences subordinate's safety performance behaviours (Feng, 2013).

Clarke (2006) proposed a model on safety performance where the model suggested that safety performance is influenced by safety climate. A positive climate encourages safety performance while negative safety climate reinforces unsafe behaviours. In the study, employee behaviour was examined in term of two-dimensional model of safety compliance and safety participation and the relationship of the safety climate to employee safety performance.

A study conducted in Singapore researched on the impacts of safety investments on safety performance and identified the influencing factors that effects safety investments on safety performance. Safety investment comprised of expenses for all kinds of accident prevention activities such as salaries of safety officer, safety equipment, training costs, incentives, inspections and innovation costs. Accident rate

from completed building projects was used as the measurement for safety performance in this study. All these safety investments were categorised into investments in voluntary safety measures and investments in basic safety measures. The hypothesis was supported where safety investments effects on safety performance of building projects varies with project hazard level and level of safety culture. Without corresponding improvement in safety culture, more protection and safer environment does not necessarily improve safety performance.

One of the studies conducted in the construction site studied on the influence of the safety practices on safety performance. The study indicated that the safety performance improved when number of safety practices implemented increased. one hundred and four safety practices were addressed in a yes and no response questionnaire. All the questions were assumed to be equal weightage and number of practices that had been implemented on each of the construction project were analysed. The results showed that better safety performance is demonstrated by projects with more practices. Evaluation was carried out comparing the total number of implemented practices with the safety performance (Hinze, ASCE, Hallowell, ASCE & Baud, 2013).

In another study conducted by Wu, Chang, Shu, Chen and Wang (2011) on effect of safety leadership on safety performance in petrochemical industry was reviewed. The study focused on Taiwan chemical material manufacturing industry with 23 plants in different department. One thousand forty-one responses received from the total of one thousand five hundred fifty-six employees. The study measured safety performance based on safety inspection, accident investigation, safety training, and safety motivation. Based on the data, the effect of safety leadership on safety performance was 0.61 ($t =$

7.79, $p < 0.001$). The safety leadership and effect on safety performance was 0.29 ($t = 4.12$, $p < 0.001$) with safety climate as the mediator.

Study conducted by Morrow, Koves and Barnes (2014) explored on the relationship between safety culture and safety performance in United States nuclear power operations. This indicated that there is an apparent relationship between safety culture and safety performance. There is a significant correlation with safety performance. Site with higher quality training also noted had fewer unplanned immediate shut down of the nuclear reactor.

A study was conducted by Boughaba et al., (2014) in Algerian petrochemical industry studied on the relationship of safety policies, safety procedures and rules, incentives, training, communication, workers involvement, safety managers' commitment and employees' involvement on safety performance. Safety culture was used in the study in determination of safety performance. The study also confirmed that management commitment towards safety is one of the key roles in the employees' safety behaviour determination and affects the workplace accident rates.

In another study conducted indicated that safety climate influence on workers safety performance. Four dimension of group level safety climate were studied which included influence from coworker's, supervisory environment, involvement and competence of workers' (Fang, Wu, & Wu, 2015).

Study done on the long-haul truck drivers from the national trucking company in United State were also carried out to study the psychological safety climate influence on the action of the truckers where safety performance is assumed to be mediating the outcome concerning near misses (Zohar, Huang, Lee, & Robertson, 2014).

Few researches identified study on safety leadership and safety performance. In one of the studies conducted in Spanish firms consisting of different sectors from the industry, construction and services sector that employ at least ten workers to test the proposed model. The study conducted on two type of leadership style namely transactional and transformational leadership and found that type of safety leadership has different influence on the employees' safety performance measured by safety participation and safety compliance. The results from the study indicated that both safety participation and safety compliance is significantly influenced by transformational leadership style whereas transactional leadership influences on safety participation and safety compliance is not significant. Both transformational and transactional leadership also demonstrated direct and positive effect on proactive risk management which consist of preventive planning, active monitoring, communication, training and development of employees. The result indicated these four dimensions are significant in workers safety participation and safety compliance (Fernández-Muñiz et al., 2014).

In the study carried out by Martínez-Córcoles et al. (2010) in nuclear power plants supported that leaders' behaviours influence employee safety performance during the presence of either weak or strong safety culture. When the leaders act as empowering a suitable safety climate shaped and resulted in a greater number of safety performance. The study was conducted based on 566 workers from one nuclear power plant. On top of that, the study also found that safety climate is the mediator between leadership and employee safety performance.

In another one of the studies carried out by O'Dea and Flin (2003) also indicated that a good leadership lead to a good safety performance. The leadership management

factors were categorized into seven items namely safety commitment, safety involvement, safety priority, leadership style, interaction, communication and humanistic management practice. Three dimensions were identified namely safety coaching, safety caring, safety controlling.

Study conducted by Clarke (2012) identified that transactional and transformational leadership affect the perceived safety climate and safety participation. Active transactional leadership ensures safety compliance as well as play an important role in shaping employees' perceptions regarding the importance of safety.

2.5 Safety Management and Safety Performance

Safety management level is accustomed to four factors which included safety activities, safety management system, reward system, and safety reporting system. Safety activities referring to mainly on the way how safety policies communicated by the organization, acquiring of safety knowledge and promotion of safety performance. Safety management system included safety policies formalization and safety procedure formulation, describes how safety problems are identified, investigated, assessed, controlled and solved.

The safety management system needs to emphasize on the important role of the middle management in order for the organization to achieve outstanding safety performance. The middle management need to be responsible for improvement of safety performance and quality and act on it to show how important is safety (Petersen, 2000).

2.6 Supervisor Safety Management and Safety Performance

In one of the study conducted by Andressan (1978) where the research indicated that workers tend to work better with a supervisor who is portrayed as a person that

respects his workers and acknowledge their involvement and is enthused by organization safety policy. The supervisor concern to safety is viewed equally important as production will lead to a positive environment where the workers tend to work safely.

This is also supported in another study conducted in construction industry where the study indicated that supervisor behaviour affects worker safety performance in construction project.

It is concluded that there are two dimensions of supervisory behaviour. First dimension is proactive and preventive behaviour which included safety training and safety instruction, and second dimension is reactive and rectifying behaviour such as monitoring and rectification of workers' behaviours, provision of support and help when required. An indirect effect on the employee safety performance identified for first dimension safety training and safety instruction whereas action such as provision of support and help, monitoring and rectification of behaviours by the supervisor indicated direct effect on worker safety performance (Fang, Wu & Wu, 2015).

The study conducted by Fang (2015), also indicated that positive action of the supervisor has direct effects on worker safety behaviour. Four dimensions were studied including influence of workmate's, supervisory environment, involvement of workers and competency which is grouped under safety climate. Supervisory environment used to measure the supervisor fulfillment of their roles and responsibilities.

Another study conducted in the container stevedoring operations by Shang et. al. (2011) on the relations of supervisor safety management to safety performance. The regression analysis revealed that supervisors' safety management is related to safety performance.

2.7 Safety concern and Safety Performance

In the study conducted by Clarke (2013) studied on safety leadership that incorporated transactional and transformational leadership on safety performance. The findings of the study suggested that active transactional leadership has a positive impact on safety. This study used elements of the safety leadership mainly on the managerial concern for subordinate's well-being.

Shang et al., (2011) also studied on safety concern on safety performance. Five items were used to measure the respondent's perception on their managers emphasis of safety concern at work. The regression analysis conducted demonstrated safety concern is positively related to safety performance.

2.8 Safety Motivation and Safety Performance

Safety motivation could be explained as the willingness of the individual to exert effort to enact safe working practices and participation in safety activities (Neal and Griffin, 2006). Neal and Griffin (2006) studied on the relation between safety motivation and safety performance in an Australian hospital with 135 samples. The result indicated that there is a mutual relationship between safety motivation and safety participation overtime. However, the result indicated that safety motivation does not have a lagged effect on safety compliance.

A study conducted by Shang et al., (2011) indicated that safety motivation effects on safety performance is positively significant.

2.9 Safety Policy and Safety Performance

In the study conducted by Sawacha, Naoumi and Fong (1999) indicated that safety performance is linked to organizational factors, mainly safety policy, relationship with the workers, safety representative, safety talks. A positive and significant relationship

between safety performance and organizational factors indicated in the study conducted. Another study conducted by Shang et al. (2011) also supported this where the study showed that there is a significant relationship between safety policy and safety performance.

Lu and Yang (2010) examined on the safety leadership on the safety performance in a container terminal operation. In the study, the dimension studied including safety motivation, safety policy and safety concern. Safety policy is defined as a mission, responsibility and goal that is set clearly by the senior management to ensure the employees achieve a certain standard of behaviour and establishment of safety system to correct the workers safety performance (Lui & Yang, 2010). The study showed a significant relationship between safety policy dimension and safety participation.



CHAPTER 3

METHODOLOGY

3.0 Introduction

Chapter 3 presents and describes the constructs and the systematic analysis of the research design, data collection methodology and sampling methods. In this chapter, the data collection methodology, instrument used to test the validity and pilot testing are presented.

3.1 Research Design

The independent variables and the dependent variables were identified and the relationship between the variables illustrated in Figure 3.1.

Employer Safety Management

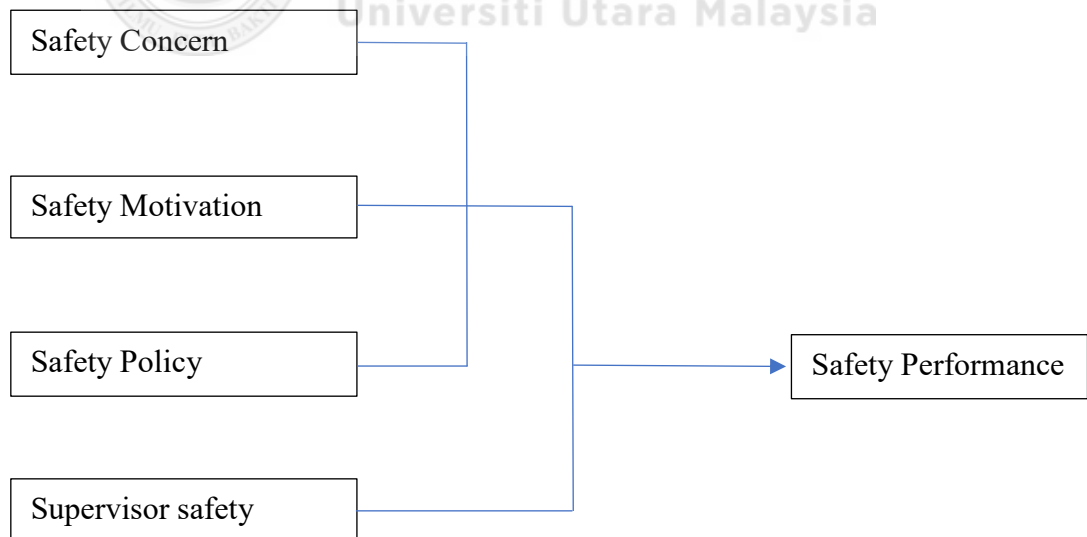


Figure 3.1
Research Framework

Variables were identified and the hypotheses of the study could be developed for the relationships testing. Consequently, the hypotheses of this study have been developed as the followings:

3.2 Research Process

3.2.1 Type of Study

This is a quantitative study. The study quantify the problem by way of numerical data and statistic would be generated based on the data collected. In addition, this study is a cross-sectional study where data is being collected one time via survey method.

3.2.2 Time Frame

This is a cross sectional study where data is collected based on questionnaire and analysed to determine the relationship of the independent variable and dependent variable. Questionnaire is distributed out and collected within a month.

3.2.3 Unit of Analysis

Unit of analysis is based on individual analysis.

3.2.4 Population

Based on the Economic Consensus (2016) report indicated that there is a total of 907,065 SMEs registered in Malaysia and Selangor SMEs is the highest recorded at 19.8% which is equal to a total of 179,599 SMEs registered in Selangor. A total of 37,861 establishment in manufacturing sector in Malaysia and based on the Economic Consensus (2012) a totally of 8,314 SMEs registered in manufacturing industry with a total of 11,071 total number of persons engaged.

There is a total of 173 companies registered with GCL International Sdn Bhd. Out of this, 37 of the companies is categories under the SME for manufacturing industries with a total of 286 operators.

3.2.5 Sample Size

In this study, sample size taken was 165 personnel. The sample size estimation in this case study was done by using the Kijercie & Morgan (1970) methods. Based on the table developed, for the population size of 286, a sample size of 165 would be sufficient to represent a cross section of the population. Questionnaires were distributed to 165 employees. Approximately 4 to 5 questionnaires were distributed to each of the organization.

3.2.6 Sampling Design

The sample questionnaire was distributed to the total population determined. The questionnaire was separated into sections A, B and C. Section A consist of open end questions such as the general information including age, gender and education level. Section B consists of employer safety leadership attributes and Section C employee self-reported safety behaviour attributes. The questionnaires elements were adapted from previous researches.

3.2.7 Sampling Procedure

The sampling procedure which had been utilized for this study was the simple random sampling approach. With this approach, all the population of the study has a probability of being picked as a subject. Data were collected using only quantitative techniques. Subject selection is selected based on random sampling where each subject is assigned a number and randomly picked the number of required subjects.

3.3 Measurement of Variables

Self-administered questionnaire was used to measure the independent variable and dependent variables in this research.

3.4 Questionnaire

Questionnaire was adopted from Shang et. al., (2011) in order to gather information on the independent variables.

For safety concern, the questionnaire's items are including:

My employer/ managers stress the importance of wearing personal protective equipment,

My employer/ managers express an interest in acting on safety policies

My employer/ managers are concerned about safety improvement

My employer/ managers coordinate with other departments to solve safety issues

My employer/ managers show consideration for workers

For safety policy variables, the items are:

My employer/ managers explain the safety policy clearly

My employer/ managers emphasize worksite safety

My employer/ managers have established a safety responsibility system

My employer/ managers establish clear safety goals

For measuring safety motivation, the items are including:

My employer/ managers reward those who set an example in safety behaviour

My employer/ managers praise workers' safety behaviours

My employer/ managers have set up a safety incentive system

For measuring supervisors' safety management, the items include:

My supervisor discusses safety issues with others

My supervisor conducts safety procedures

My supervisor provides safety information

For dependent variables, the measurement items are including:

The frequency of accidents is reducing

The frequency of equipment failure is reducing

The value of product defect and damage is reducing

The number of personal injuries is reducing

3.5 Translation

To ensure the reliability of the instrument, pilot testing was carried out in this research. The adopted questionnaire was in English. The questionnaire was then translated to bilingual forms and addition of Bangladeshi language to facilitate the respondents to understand and answer the question. The questionnaire was translated by the expert in language translation to ensure the accuracy of the questionnaire. The questionnaire was translated into Malay language and subsequently translated back into English by a qualified teacher teaching English for Second Language (TESL) from

Sarawak. The Bangladeshi language was translated by two different Bangladesh expertise majoring in language study. The questionnaire was compared with the original questionnaire to ensure that the translation is accurate.

3.6 Data Collection Procedure

Firstly, a briefing was carried out to the respective owners on the main purpose of the study as well as to obtain the necessary permission to conduct the study in their compound priori to administering the questionnaires to the respondents. Upon confirmation and approval from the owner, a second briefing was carried out in order to ensure the completion of the questionnaires and to ensure that the employees understood the questionnaires. Questionnaires were then randomly distributed to the employees as per the sample size. The number of distributed questionnaires were recorded and the questionnaires was collected back after one weeks of administration.

3.7 Pilot Study

The pilot study was conducted to gauge the reliability of the research tools and focus on group of 30 workers for the testing of the instruments where according to Isaac and Michael (1995), 10 to 30 of the participants is suggested for the pilot testing. In order to determine the reliability of the questionnaire and the questionnaire items were in the right sequence, pilot study was carried out. Cronbach's alpha of 0.7 and above are accepted as the adequate level of reliability to test causal relations.

The instrument was pre-tested with 30 employees of the manufacturing company registered with the organization in Selangor. The pilot test purpose was:

- i. To confirm on the reliability of the questionnaire, ensuring it is clear and respondents understand the questionnaires
- ii. To identify any potential problems that requires changes or adjustments

- iii. To confirm on the consistency
- iv. To evaluate whether the language used was appropriate and acceptable by the respondents

Cronbach's alpha reliability coefficients were obtained to ensure the internal consistency of the dependent and independent variables and details reflected in the Table 3.1.

Table 3.1

Reliability Coefficients of Questionnaire Items

Variables	Number of Items	(r)
Safety Concern	5	0.716
Safety Policy	4	0.767
Safety Motivation	3	0.933
Perceived Safety Performance	4	0.804

3.8 Proposed data analysis

The data analysis result will be used to determine whether the research conducted has met the proposed objectives or otherwise.

For data analysis and data interpretation, the Statistical Program for Social Sciences (SPSS) version 22.0 is used. On top of that, SPSS software is used to determine the appropriate statistical technique for hypothesis testing. Different statistical method including descriptive and inferential statistics were applied for data analysis. The data obtained shall be analysed using descriptive analysis which included frequencies, min, max, mean. Data also shall be analysed on the standard deviation, reliability analysis, correlation coefficient and multiple regression analysis.

3.9 Summary

Chapter 3 itself covered the methods to gather the data and analysis of the gathered data. This is important to identify whether the hypothesis of the research established is supported or rejected. The analysis of the data shall be review and discuss in Chapter 4 and determine the relationship between the independent variables and dependent variables based on the data analysis.



CHAPTER 4

RESULTS & FINDINGS

4.0 Introduction

This main purpose of this chapter is to explain the results of this research. In details, this chapter presented the rate of responds, respondents' demographic profiles, validity and reliability of the instruments, descriptive statistics of the variables, and the analyses of normality, linearity & multicollinearity. Furthermore, this chapter also reports the detail results of correlation and regression analysis which are executed for hypotheses testing. Lastly, the summary of the results is presented

4.1 Respondents' Response Rate

As discussed in the previous chapter that the population and the sample within this study were the operator of SMEs manufacturing in Selangor. The data collection was performed by using self-administered questionnaires that were distributed amongst 165 respondents who are SME workers. A total of 156 respondents had answered and returned the questionnaires. Thus, the responded rate of this research is 94.5%.

4.2 Demographic Profiles of the Respondents

The characteristics of the respondents are described in this section. They are divided into four aspects namely gender, marital status, the respondents' educational level, age of respondents, races as well as years of working. First, most of the respondents for this study are male, which are 123 people (78.8 %) of the total sample, and the remaining are female (21.2%). In terms of their education level, most of the respondents own only PMR or SPM which is 71.8% (112 people), followed by certificate which are 4 persons (2.6%) and similarly 4 persons for diploma (2.6%). Only 1 person holds master degree

as his/her highest academic qualifications, whilst the remaining 35 respondents (22.4%) have others educational background.

Furthermore, majority of the respondents aged 25-30 with 62 people (39.7%) and it follows by the respondents with the age of below 25 years old, with 42 respondents (26.9%). The respondents who were less than 30 are 5 people (5.5 %), while 3 of the respondents (3.3%) are 60 years old and above. Regarding the years of experience, most of the employees had been working for more than 15 years which consists of 40 employees (44%), 25 employees (27.5%) have been working within 5 - 10 years, and followed by 15 employees (16.5%) which have been working for less than 5 years. Meanwhile, as many as 11 employees (12%) have been in working within 11 – 15 years. The summary of the respondents' demographic is depicted in Table 4.1.

Table 4.1
Demographic Profile of Respondent

Item	Factor	Numbers	Percentage
Gender	Male	67	73.6
	Female	24	26.4
Education Level	Master/Doctorate	5	5.5
	Degree	42	46.2
	Diploma	12	13.2
	Senior High School	29	31.9
	Junior High School	3	3.3
Age	Below 30 years old	5	5.5
	31 – 40 years old	29	31.9
	41 – 50 years old	38	41.8
	51 – 60 years old	16	17.6
	60 and above years old	3	3.3
Years of experience	Less than 5 Years	15	16.5
	5 – 10 Years	25	27.5
	11 – 15 years	11	12.0
	More than 15 years	40	44.0

4.3 Factor Analysis and Reliability Assessment

Before further analysis, the questionnaire involved needs to be verified through the validity and the reliability test. Reliability of this research instrument is determined by the value of Alpha Cronbach using reliability test. Whilst, factor analysis was administered to determine the construct validity of the instruments.

4.3.1 Test of Reliability

The reliability test is administered in a research to examine the internal consistency of the instrument (Sekaran, 2003). Similar with other studies, this research used Cronbach's Alpha value to quantify the level of reliability of its instruments. The interpretation of Cronbach's Alpha values is based on Zikmund and Babin (2010) which are presented in the Table 4.2.

Table 4.2
Interpretation Cronbach's Alpha

Cronbach's Alpha	Interpretation of Reliability
0.80 - 0.95	Very good
0.70 – 0.80	Good
0.60 – 0.70	Fair
Below 0.60	Poor

Table 4.3
Results of Reliability Test

Item	Variable	Alpha Values
1	Safety Concern	.852
2	Safety Policy	.772
3	Safety Motivation	.919
4	Supervisor Safety Management	.855
5	Safety Performance	.823

The Cronbach's Alpha values are as expressed in Table 4.3. The results showed that the reliability of safety policy is fair. Whilst, other factors namely safety concern, safety motivation, supervisor safety management and safety performance have achieved very good reliability. Therefore, it could be stated that the research instrument has obtained the internal consistency.

4.3.2 Factor Analysis

Factor analysis is a method used in research to determine the accuracy of the items used in measuring a construct (Hair et al., 2010). In determining the accuracy of all items or scales, factor analysis was done for independent variables namely safety concern, safety policy, safety motivation and supervisor safety management. Furthermore, factor analysis was also conducted towards the dependent variable- safety performance.

Regarding the number of samples that are required to conduct factor analysis, Hair et al. (2010) suggested that it's preferable 100 or more sample size, however, more than 50 observations is still acceptable to carry out factor analysis. Hair et al. (2010) also

recommended factor analysis would be able to conduct with 5 numbers of observations per variable. Within this study, the respondents were 165 which consider justifiable.

Hair et al., also suggested that the factor loadings were within the range of 0.30 to 0.40 are considerably accepted, however value more than 0.50 are preferable (very significant). This study took the cut-off point of 0.60 as the value of the factor loading since the number of the respondents is 91 (ninety-one). Therefore, the factor loading value which are below than 0.60 is deleted.

Table 4.4
Factor Loading

Factor Loading	Sample Size Needed for Significance
.30	350
.35	250
.40	200
.45	150
.50	120
.55	100
.60	85
.65	70
.70	60
.75	50

Source: Hair et al. (2010)

Subsequently, other criteria that should be followed is Kaiser-Meyer-Olkin (KMO) which value should be greater than 0.50 as a minimum value (Field, 2009). Table 4.4 presents the value of KMO as suggested by Hutcheson and Sofroniou (1999).

Table 4.5
Interpretation of the KMO Statistics

KMO statistic	Interpretation
In the .90's	Marvelous
In the .80's	Meritorious
In the 70's	Middling
In the 60's	Mediocre
In the 50's	Miserable
Below .50	Unaccepted

Source: Hutcheson and Sofroniou (1999)

Thus, the acceptable KMO value for this study is set as 0.50.

In addition, communality should be considered with regard to understand to what extent the items be able to explain the factor. Hair et al., (2010) suggested that communality as total amount of variance an original variable share with all other variables included in the analysis. A work from Mundfrom, Shaw and Ke (2005) proposes 3 (three) categories regarding communality assessment. The value of all communalities in ranged 0.60 till 0.80 is considered high communality, 0.20 till 0.80 is considered wide communality and 0.20 and 0.40 is considered as low communality.

The factor analysis on performance of independent variables in this study were using four (4) items which adapted from previous research. Principal Component Analysis (PCA) was conducted. The results are as depicted in Table 4.6.

Table 4.6
Factor Analysis for Independent Variables

Item/Factor	Safety Concern	Safety Policy	Safety Motivation	Supervisor Safety	Communalities
Concern1	.789				.622
Concern2	.857				.734
Concern3	.824				.680
Concern4	.819				.671
Concern5	.683				.467
Policy1		.738			.545
Policy2		.684			.468
Policy3		.850			.723
Policy4		.807			.651
Motivation1			.919		.845
Motivation2			.938		.880
Motivation3			.926		.857
Supervisor1				.900	.811
Supervisor2				.905	.818
Supervisor3				.840	.706
Cronbach Alpha	0.852	0.772	0.919	0.855	
Eigenvalue	3.174	2.387	2.583	2.335	
Percentage variance (%)	63.479	59.667	86.098	77.834	
Kaiser-Meyer-Olkin Sampling Adequacy	0.827	0.732	0.758	0.714	
Bartlett's Test	P<0.05	P<0.05	P<0.05	P<0.05	

Table 4.6 presents the factor analysis results for the independent variables consist of four (4) factors namely safety concern, safety policy, safety motivation and perceived supervisor safety management. These factors were established from several numbers of items reflecting them and all of these items was adapted from previous research Shang et al., (2011).

For safety concern, the value of KMO is 0.827, which more than 0.50 and considered acceptable. The communalities of this variable is also quite good, which range

from 0.467 to 0.743, considered as wide communalities (Mundfrom et al. 2005). Meanwhile, the Cronbach's Alpha values of this variable was 0.852 which reflects a good reliability. In addition, all the loading factors are above 0.60 which resulted that all items have been accepted for this variable.

Furthermore, the factor analysis result for safety policy shows the KMO value as 0.732 to indicate the sampling adequacy. The communalities are from 0.468 to 0.723 which is considered as wide. The Cronbach's Alpha value is 0.772 which is above the acceptable value and all the loading factors are above 0.60 which resulted that all items have been accepted for this variable.

Similarly, for the variable of safety motivation, the KMO value is which expressed the adequacy of samples with the communalities values are from 0.845 to 0.880 which is considered as high. In addition, the reliability value of Cronbach's Alpha is high which is 0.919 and all the loading factors are above the cut-off value.

For supervisor safety management, the KMO value exceed the minimum value for sampling adequacy which is 0.714 and the communalities are wide (0.706-0.818). Moreover, the Cronbach's Alpha value is 0.855 which is very good reliability and all loading factors are above 0.60.

Post to the construct validity analysis for independent variables, similarly, PCA was also conducted for the dependent variable. The results are as depicted in Table 4.7.

Table 4.7
Factor Analysis for Dependent Variables

Item/Factor	Safety Performance	Communalities
Per1	.720	.519
Per2	.855	.731
Per3	.840	.706
Per4	.814	.663
Cronbach Alpha	0.823	
Eigenvalue	2.620	
Percentage variance (%)	65.49	
<i>Kaiser-Meyer-Olkin Sampling Adequacy</i>	0.761	
Bartlett's Test	P<0.05	

Based on result depicted in Table 4.7, the KMO value for the dependent variable exceeded the minimum value for sampling adequacy which is 0.761 and the communalities are wide (0.519-0.731). Moreover, the Cronbach's Alpha value is 0.823 which is very good reliability and all loading factors are above 0.60.

In summary, it could be stated that measurement items for independent variables as well as the dependent variable have passed the construct validity test.

4.4 Data Preliminary Analyses for Hypothesis Assessment

4.4.1 Normality Assessment

Normality test is conducted to examine whether the data of any research, are distributed normally or otherwise (Hair et al.,2010). In order to distinguish the normality, statistical method or graphs method could be applied (Tabachnick & Fidell, 2007). For statistical method, the normality of data can be revealed by the value of kurtosis and skewness. Hair et al. (2010) suggested the accepted value for kurtosis and skewness is within the range of ± 1.96 . On the other hand, if graph method is opted, the normality is distinguished by visual using histogram.

The following Table 4.8 summarised the normality result. The ranged value of skewness was -0.093 to -0.956 and for skewness, the values are in the range of -0.050 to -0.573. Hence, according to the skewness and kurtosis results, it could be said that the distribution data are normal. Table 4.8 depicted the summary of normality results.

Table 4.8
Skewness and Kurtosis

Variables	Mean	Std. Deviation	Skewness	Kurtosis
Safety Concern	3.66	.5246	-.485	-.308
Safety Policy	3.61	.5702	-.165	-.276
Safety Motivation	3.26	.9397	-.360	-.957
Supervisor Safety Management	3.56	.6127	-.260	-.724
Safety Performance	3.63	.5436	-.181	-.688

As previously explained, the normality can also be notable from the plot of graph (histogram) residual which is shown in Figure 4.1 to 4.5.

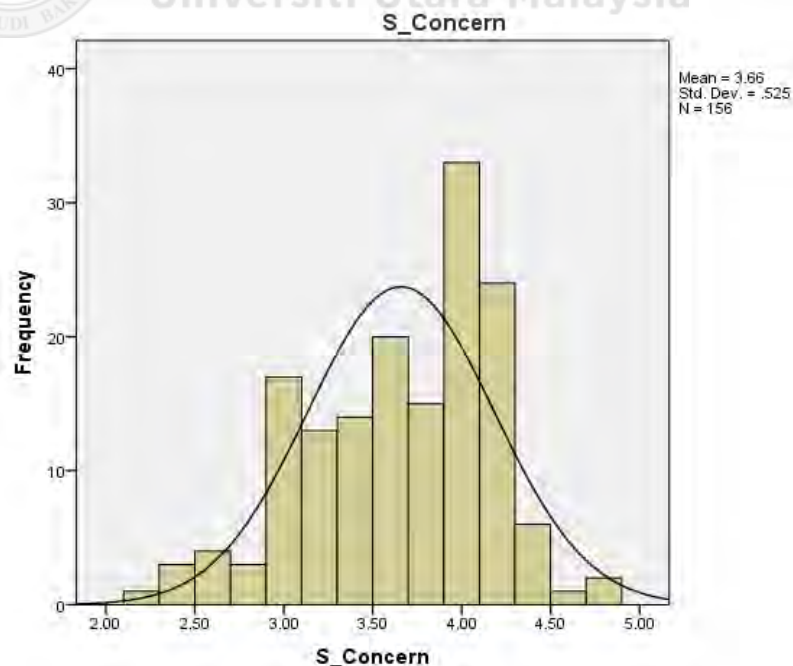


Figure 4.1
Histogram for Safety Concern

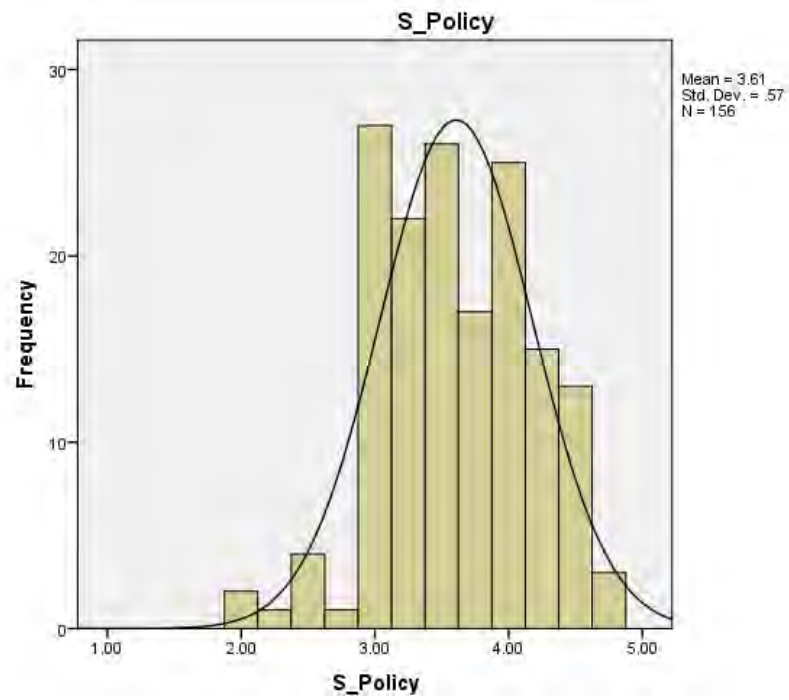


Figure 4.2
Histogram for Safety Policy

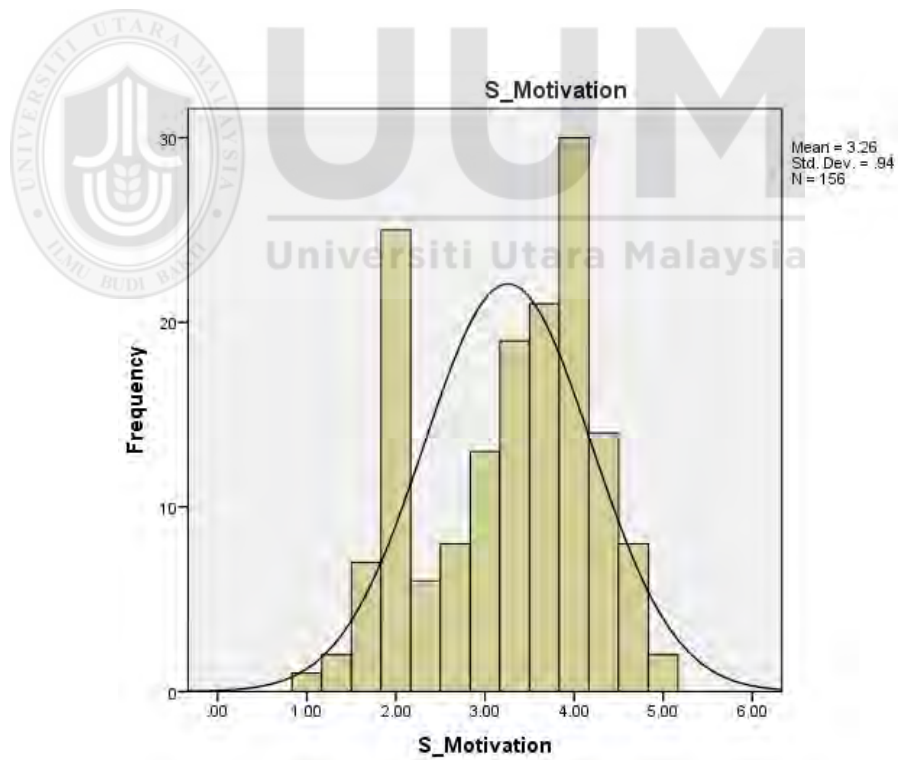


Figure 4.3
Histogram for Safety Motivation

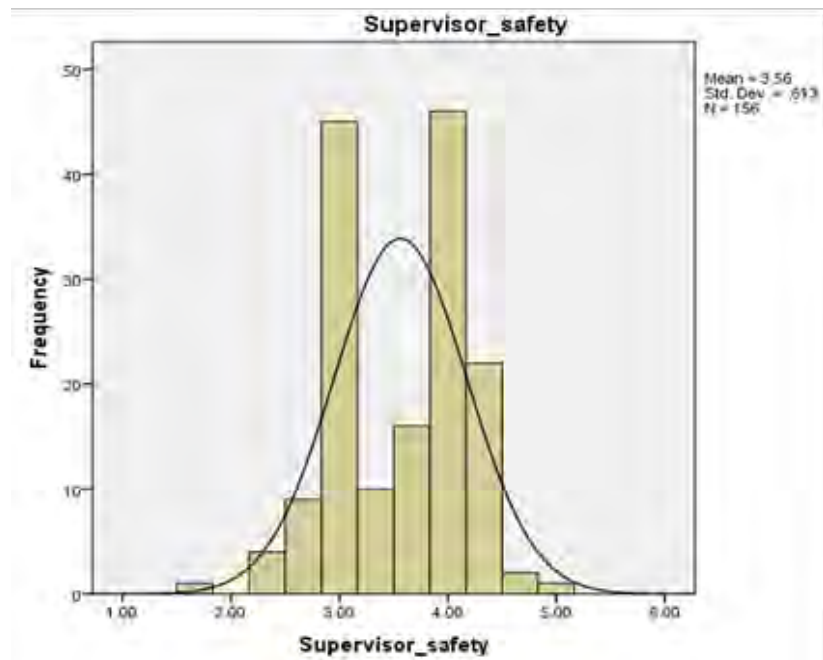


Figure 4.4
Histogram for Supervisor Safety Management

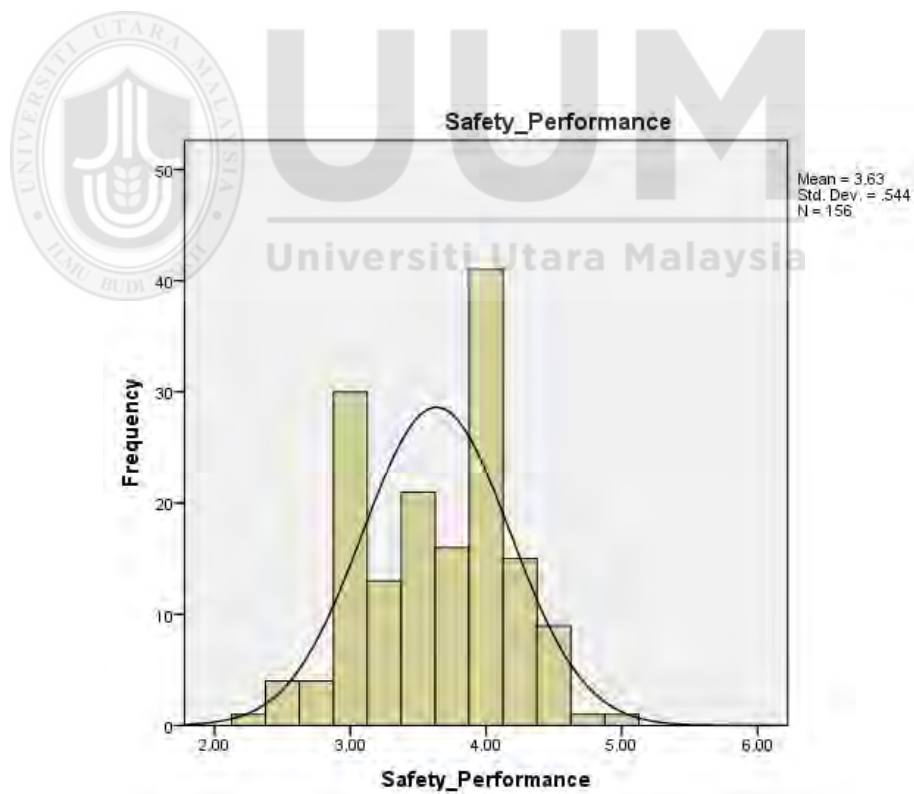


Figure 4.5
Histogram for Safety Performance

4.4.2 Linearity assessment

In fulfillment of the prerequisite for performing multivariate analysis, linearity between the variables must be tested. Hair et al. (2010) enlightened that the linearity between dependent and independent variables represents the degree to which the change in the dependent variable is associated with the independent variable. Figure 4.6 to 4.9 show the existence of linearity between independent variables and dependent variable by using scatterplot graph.

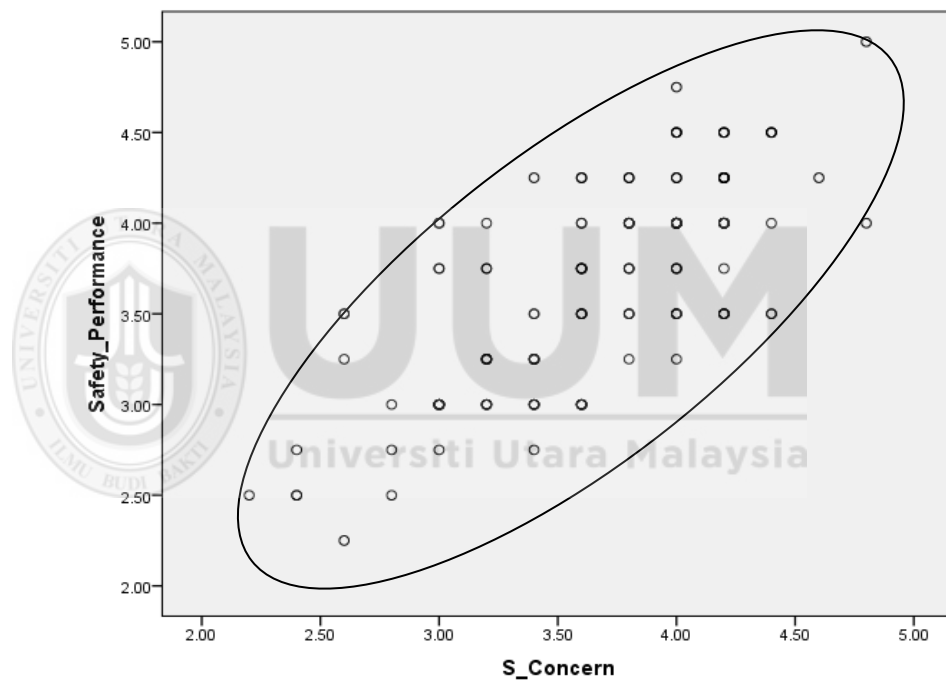


Figure 4.6
Safety Concern and Safety Performance

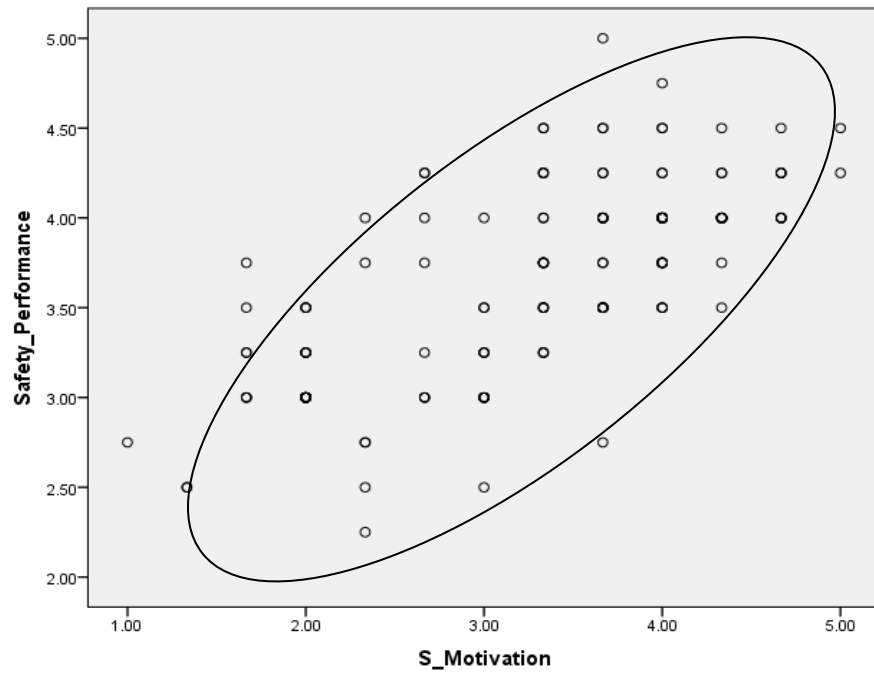


Figure 4.7
Safety Policy and Safety Performance

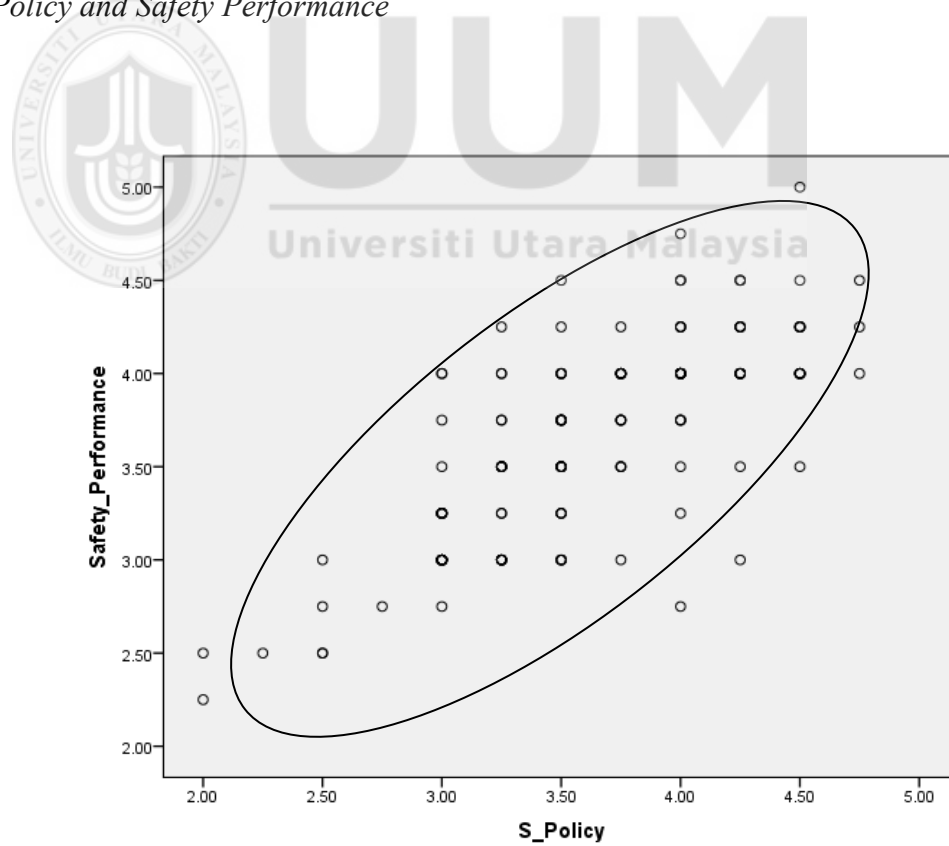


Figure 4.8
Safety Motivation and Safety Performance

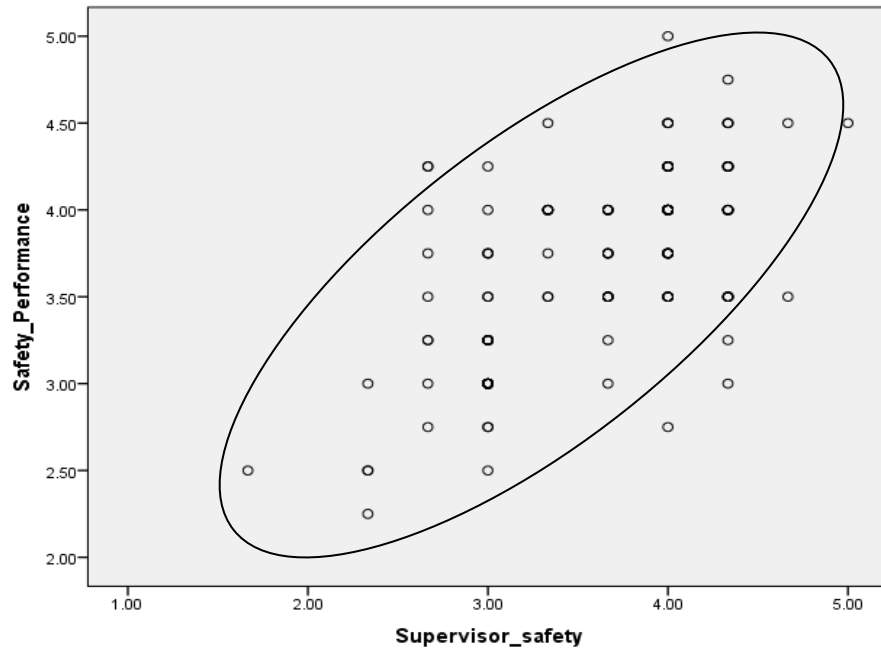


Figure 4.9
Supervisor Safety Management and Safety Performance

Based on the scatter plots depicted in Figure 4.6-4.9, it could be decided that the data for are linear.

4.4.3 Multicollinearity Assessment

Assessment of multicollinearity is important before proceeding to multivariate analysis. This assessment is needed in order to understand whether there is a high correlation between two or more independent variables (Sekaran & Bougie, 2013). In terms of measuring multicollinearity, tolerance and variance inflation factor (VIF) are the two most common values to measure it (Hair et al, 2010 and Sekaran & Bougie, 2013).

From the table 4.9, it can be visualised that the tolerance value for each variable were more than 0.10, which range from 0.309 – 0.377. In addition, VIF value for each variable were less than 10 (Hair et al., 2010). It means that there is no multicollinearity

issue since the tolerance value and VIF value were in the threshold value which can be accepted.

Table 4.9
Multicollinearity Assessment

	Tolerance	VIF
Safety Concern	.377	2.651
Safety Policy	.326	3.068
Safety Motivation	.360	2.777
Supervisor Safety Management	.309	3.238

4.5 Pearson Correlation Analysis

In order to test the hypothesis 1 (one) to 4 (four), a Pearson correlation analysis was conducted to determine the significant relationship between the variables, specifically the relationship and its direction between the independent variables

and dependent variable. This analysis is also used to distinguish, strength of bivariate associated between variables in researches (Sekaran,2003). A statement from Pallant (2007) summarised that if the r value is 0, this indicates that there is no relationship between two variables. In contrast, if the r value is 1, it indicated that there is a perfect relationship between the variables. Table 4.10 describes the inter-variables relationship's strength as established by Cohen (Pallant, 2007).

Table 4.10
Correlation and Its Relationship's Strength

Correlation Value	Relationship Strength
$r = \pm 0.10$ to ± 0.29	Weak
$r = \pm 0.30$ to ± 0.49	Medium
$r = \pm 0.50$ to ± 1.00	Strong

As depicted in Table 4.11, the relationship between all variables are positive and significantly related.

Table 4.11
Correlation Analysis Result

Correlations					
	Safety Concern	Safety Policy	Safety Motivation	Supervisor Safety Management	Safety Performance
Safety Concern	1	.761**	.654**	.688**	.742**
Safety Policy	.761**	1	.687**	.737**	.754**
Safety Motivation	.654**	.687**	1	.777**	.721**
Supervisor Safety Management	.688**	.737**	.777**	1	.663**
Safety Performance	.742**	.754**	.721**	.663**	1

** . Correlation is significant at the 0.01 level (2-tailed).

Based on Table 4.11, there were positive and significant correlations between independent variables and safety performance as the dependent variable. Firstly, safety concern and safety performance were positively related ($r = .742$, $p < 0.05$) which is also indicates that when the perceived management safety concern increases, safety performance of the company will increase. Moreover, r value shown the existence of a strong association between safety concern and safety performance.

Secondly, a significant relationship with positive direction exists between safety policy and safety performance ($r = .754$, $p < 0.05$.) Besides, $r = 0.754$ indicated a strong relationship.

Thirdly, the results have portrayed that safety motivation is significant and positively correlated with safety performance ($r = .721$, $p < 0.05$.) It means that when the

perceived safety motivation by the management increases, safety performance of the company will also increase. The r value 0.721 indicated the correlation strength which is strong.

Lastly, the result also determined a positive and significant correlation between supervisor safety management and safety performance ($r = .663$, $p < .05$.) This revealed that when perceived safety management by supervisor increases, safety performance of the company will also increase. In addition, $r = 0.663$ specified that the association is strong.

In summary, all the variables have positively and significantly related with each other for this research. In terms of the relationship between independent variables and the dependent variable, all independent variables are positively and significantly related with dependent variables. Moreover, all of them are strongly related with safety policy has the highest value of the correlation strength.

4.6 Regression Analysis

Within this study, testing of how much the variance in the dependent variables is explained by the independent variables is administered via multiple regression analysis (Sekaran, 2003). Furthermore, the significant effect of the independent variable on the dependent variable would be determined and the strength of the influence could be quantified through beta value from regression analysis. Results of the regression analysis are expressed in Table 4.12.

Table 4.12
Regression Analysis Result – Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.827 ^a	.684	.676	.30959

- a. Predictors: (Constant), Supervisor Safety Management, Safety Concern, Safety Motivation, Safety Policy

Based on Table 4.12, it could be concluded that all independent variables namely safety concern, safety policy, safety motivation and supervisor safety management explained 67.6 % variance in the dependent variable –safety performance. Whilst, the remaining 32.4% is explained by other variables which are not studied in this research.

Table 4.13
Regression Analysis Result – Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.866	.196		4.423	.000
	Safety Concern	.322	.077	.311	4.179	.000
	Safety Policy	.312	.076	.327	4.079	.000
	Safety Motivation	.193	.044	.334	4.376	.000
	Supervisor Safety Management	-.046	.073	-.052	-.629	.530

Table 4.13 revealed that independent variables (safety concern, safety policy and safety motivation) had significant influence towards safety performance. Based on the Beta value, safety motivation imposed the greatest influence towards safety performance ($\beta=0.334$, $t=4.376$, $p<0.05$), followed by safety policy ($\beta=0.327$, $t=4.079$, $p<0.05$), and safety concern ($\beta=0.311$, $t=4.179$, $p<0.05$). Whilst, supervisor safety management has no influence on safety performance.

4.7 Summary

The findings of the study is demonstrated by using several analyses based on the output of statistical analysis produced by SPSS software for windows, version 22.0. Some of statistical analyses were conducted, namely, factor analysis, reliability test, descriptive statistics of the variables, normality test, linearity test, multicollinearity test, Pearson correlation as well as multiple regression. Within this study, the characteristics information of the respondents was presented in the earlier section, which demonstrated the percentages of gender, age and educational background of the respondents. All of the results of this study were further discussion in subsequent chapter.



CHAPTER 5

DISCUSSION AND RECOMMENDATION

5.1 Introduction

The aim of this chapter is to conclude and summarize the research process and findings presented in chapter 4. This chapter will also explore on the suggestions and recommendations for future research. This chapter will concentrate on concluding the influence of employers' and supervisor's safety management towards safety performance of the workers in SME manufacturing industry.

On top of that, this study also attempts to identify the employees' perception toward their employers' and supervisor safety management attributes in implementing occupational safety and health in their organization. Researcher identified three dimensions as the independent variables for employer's safety management which are safety motivation, safety concern and safety policy and four dimensions to measure safety performance. Apart from that, this study also aims to determine the significant relationships between influence of employers' and supervisors' safety management towards safety performance.

5.2 Summary of Main Findings

The study was conducted in order to investigate the relationships between variables which represents safety management of SMEs' employers, namely safety concern, safety policy and safety concern as well as supervisor safety management, and safety performance. Hypotheses of research were tested via multiple regression analysis method. The findings of the study revealed that safety concern, safety policy and safety motivation are significantly and positively related to safety performance. However,

perceived supervisor's safety management is not significantly and associated to safety performance.

The hypothesis outcome is as follow:

Table 5.1

Hypothesis outcome

Item	Hypothesis	Status
H1	Employer safety management with respect to safety concern is significantly related to performance among the SME workers	Accepted
H2	Employer safety management with respect to safety policy is significantly related to safety performance among the SME workers	Accepted
H3	Employer safety management with respect to safety concern is significantly related to safety performance among the SME workers	Accepted
H4	Supervisor safety management is significantly related to safety performance among the SME workers	Rejected

5.3 Discussion

Employee perception toward their employer and supervisor safety management and the employee's safety performance were gauged. One hundred sixty-five respondents from SMEs registered in the database were randomly selected to answer the questionnaire provided to them. Based on the questionnaire returned back, analysis was carried out. The results showed that positive relationship exist between safety concern, safety policy, safety motivation and supervisor safety management with safety performance ($P < 0.05$). The findings suggested that better safety performance is

attribute by better safety concern, safety policy, safety motivation and supervisor safety management. A good occupational safety and health management lead to good safety performance and in return, this situation could further reduce the occurrence of accident. The findings reported is also consistent with studies of Bass and Avolio (1990), O'Dea and Flin (2001), Wu et al (2007), Vinodkumar and Bhasi, 2010, Lu and Yang (2010), and Shang et al. (2011). This is also supported by the research done by Shang et al., (2011) where the studies indicated significant relation between supervisor safety management and safety performance. Study of Martinez- C'orcoles et. al. (2011) also indicated potential significant impact of the front liner leader such as supervisors on employees' safety performance. Moreover, it is also recognized that supervisor plays an important role in establishing safe environment that motivate workers behaviour.

Based on the regression analysis, safety motivation demonstrated the biggest influence ($\beta = 0.334$, $t = 4.376$, $p < 0.05$) towards safety performance. The output is also consistent with another study conducted Shang et al (2011). The author proposed that safety motivation in terms of safety incentives for good safety performance could further motivate and shape the workers safety performance. Study conducted by Sawacha et al. (1999), Onikoyi and Awalosi (2014) and Zulkifly (2014) also supported that salary and bonus rewards for safety is one of the productive factors towards employee's performance.

The multiple regression analysis also showed safety policy influences the safety performance among workers ($\beta = 0.327$, $t = 4.079$, $p < 0.05$). The output also matched with the analysis done by Shang et. al., (2011) and Sawacha et al., (1999). Study by Wu et. al., (2008) also indicated that management involvement and commitment including declaration of safety policy and emphasis on worksite safety will improve the safety

performance. Kantan (2013) determined that those workers were more compliance with organization safety rules and procedures when they were content with the safety programs which is part of company's safety policy.

On top of that, safety concern was also found positively related to safety performance ($\beta = 0.311$, $t = 4.179$, $p < 0.05$). This is also supported by other study conducted previously such as Sang et al., (2011), Lu & Yang (2010) and Dal Corso (2008). Safety concern on workers should be further emphasized through various methods. Example of safety concern that could be implemented including provision and emphasize on personal protective equipment, concern on the workers' health and welfare by provision of basic necessity such as rest room, clean water, toilet, etc. On top of that, making time and listening to the feedback from the workers is also a critical behaviour that demonstrate the employer concern such as through consultation and participation of workers in safety related decision could be carried out. Study conducted by Flin (2003) and Cohen and Cleveland (1983) also supported that employees that are involved in decision making process work such as receiving feedback about their work more safely.

However, supervisor safety management influence on safety performance are not significant. This result is consistent with the research conducted by Kapp (2012) which indicated that no evidence of relationship between supervisor and employee performance under lower safety climate. Shang et al., (2012) also supported that employee safety management is significantly related to supervisors' safety management and Andriessen (1978) concluded that management has the greater effect on workers' safety performance despite that the supervisors are the decisive factor as management is the one that train and shape supervisor's priorities, goals and objectives.

He also indicated that despite of lack in supervision, workers may still have good safety performance with good involvement of employer. Thus, the employer should identify and ensure that their safety commitment is being transmitted to the supervisor and workers. Approach such as safety management training provision could be performed as commitment from management and to shape supervisors' direction (Flin, 2003, Vassie and Lucas, 2001).

On top of that, the collection of data may have been subjected to bias where workers' may be hesitant and unwilling to report and respond the true circumstances due to possible future consequences and to avoid trouble with the supervisors.

5.4 Research Implication

The present study findings have several implications to both theory as well as management of the organizations. Discussion on the theoretical and managerial implication will be discussed in this section. The theoretical implication could benefit the Occupational Health and Safety field researcher while the managerial implication would benefit the organization management and OSH practitioners.

5.4.1 Theoretical Implication

The relationship between employers' safety management dimensions specifically safety concern, safety policy and safety motivation and supervisors' safety management; and safety performance has been explored in this study. Few of the previous study were found conducted in different sectors and country example such as Shang et al., (2011), Lui and Yang (2010), Zulkifly (2014) and Neal and Griffin, (2006) whereas this study has been conducted in SMEs based in Selangor registered under the organization database. In a nutshell, this study contributed to the academic and OHS practitioners as per below:

- i. Independent variables which are safety concern, safety policy and safety motivation and supervisors' safety management have a positive correlation with safety performance
- ii. Safety concern, safety policy and safety motivation have positive influence towards safety performance

Additionally, empirical evidence provided by this study demonstrated that safety motivation is the most contributing factors towards safety performance. This imply that incentives and bonuses would further improves safety performance of the workers.

In conclusion, the discoveries of the study also contributed to the existing literatures related to employers' and supervisors' safety management and safety performance where it would be theoretically valuable as the study was conducted in SME sector.

5.4.2 Managerial Implication

As the findings pointed to the positive connection between employers' safety management and safety performance, management involvement within the SMEs manufacturing could be one of the key factors. This research could be another guideline for the SME owner in formulating effective strategy to further enhance safety performance in within the organization and decrease potential incident and accident in the organization. This could also be the guideline for GCL when approaching the client in persuading the owners to involve with the implementation of the OHS management system.

Apart from educating and monitoring the employees' safety behaviour, the organization can also provide support for employees by giving incentive and bonus to the workers that are committed to safety and health, providing personal protective equipment, formulating and implementing company's safety and health policy and

providing a safe working environment. This study could be used as the platform for the owner to find the effective method that is suitable to motivate their employee and resulting in increase of the safety performance of the workers.

As the result of the research indicated employers' safety management in term of safety motivation, safety policy and safety concern have significant and positive relationship with employee's safety performance, method based on safety motivation, safety policy and safety concern could be identified and implemented to improve the safety performance of the employee in the workplace.

5.5 Limitations and Future Research

This research only focuses on SME in manufacturing sector registered with the organization. It is hoped that this study could be replicated for the SME manufacturing sector in other states to gather more results and for more accuracy. On top of that, this study could also be extended to other sectors in SME. It is hoped that this study will be replicated for other states for better understanding. On top of that, the study could also further explore on sectors, for example such as service sector, agriculture sector or construction sector as it may produce different results or findings.

This study also used three dimensions of safety management that are safety motivation, safety concern and safety policy as well as supervisor safety management. These independent variables contributed about 60% of the safety performance as the dependent variables. Study could be carried out to further review in depth specifically on supervisor safety management as mediating effects as the correlation result showed that there is a strong relationship between supervisor safety management and safety performance.

5.6 Conclusion

The researcher had gone through the analysis in regard to the employers' and supervisors' safety management towards safety performance of the workers at SMEs. This research had been conducted for the manufacturing sector company that is located in Selangor and listed in GCL database. Total of 165 employees has participated in the qualitative survey questionnaires.

Despite SME contribution towards country economic development, the impact of SME in the industrial accident should not be neglected. In order to reap the benefits in term of positive economic contribution, ways to overcome the limitation of health and safety in SME should be further study and analysed. Suitable approaches for implementation in SME should be implemented and this could be different with big firm that does not have much restriction as compared to SME in term of monetary and resources. In this study, it was found that employers' safety management influence safety performance at workplace with safety motivation being the most significant, whereas safety policy and safety concern come after that. Therefore, focus on the execution of OHS management system could be further enhance and focusing on this to further improve on the workers' safety performance.

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APPENDICE A: QUESTIONNAIRE

The survey question consists of two section A, B and C.

Soalan kaji selidik ini mengandungi dua bahagian, A, B dan C.

জরিপ প্রশ্নে দুটি বিভাগ এ এবং বি.

Section A: Demographic Information

Bahagian A: Maklumat Demografi

অধ্যায় একটি: জনসংখ্যার তথ্য

Please select only **ONE** answer which is most relevant in your opinion to each of the question. Please mark (/) at the relevant column or fill in the blank, where appropriate.

Sila pilih hanya **SATU** jawapan yang paling tepat untuk setiap soalan. Sila tanda (/) pada ruangan yang sesuai atau isi tempat kosong yang mana bersesuaian.

দয়া করে শুধুমাত্র একটি উত্তর নির্বাচন করুন যা আপনার প্রতিটি প্রশ্নের প্রতি সর্বাধিক প্রাসঙ্গিক। প্রাসঙ্গিক কলামে (/) চিহ্নিত

করুন অথবা উপযুক্ত যেখানে ফাঁকা পূরণ করুন।

1. Your gender ☐ Male ☐ Female
 Jantina anda Lelaki Perempuan
 আপনার লিঙ্গ পুরুষ মহিলা
2. Your marital status ☐ Single ☐ Married
 Taraf perkhawinan Bujang Berkhawin
 anda অবিবাহিত বিবাহিত
 আপনার বৈবাহিক অবস্থা ☐ Divorced/Widowed
 Bercerai/ Janda/ Duda
 তালাকপ্রাপ্ত/ বিধবা
3. Age ☐ <25 ☐ 25-30
 Umur ☐ 31 -35 ☐ 35 – 40
 বয়স ☐ >40
4. Education ☐ PMR/ SPM ☐ Certificate
 Tahap Pendidikan ☐ Diploma ☐ Degree
 শিক্ষা ☐ Master ☐ pHD
☐ Others
5. Race ☐ Malay ☐ Chinese
 Bangsa Melayu Cina
 জাতি ☐ Indian ☐ Others
 India (specify): _____
 Lain-lain (sila nyatakan) : _____
6. Years of working with current company

Tahun
perkhidmatan
dengan syarikat ini

এই কোম্পানির সঙ্গে সেবা
বছর



Section B:

Bahagian B

বিভাগ বি

To what extent do you agree or disagree with each statement below describing your current employer/ supervisor? Please select the most accurate based on the scale above and circle your answer.

Sejauh mana anda bersetuju atau tidak bersetuju dengan setiap kenyataan di bawah yang menggambarkan majikan/ pengurus anda sekarang? Sila pilih yang paling tepat dan bulatkan jawapan anda berpandukan skala di atas.

নিচের প্রতিটি বিবৃতির সাথে আপনি কতটা একমত বা অসম্মতি জানান যা এখন আপনার নিয়োগকর্তা / পরিচালককে চিত্রিত করে? উপরে স্কেলের উপর ভিত্তি করে সবচেয়ে সঠিক নির্বাচন এবং আপনার উত্তর বৃত্ত করুন।

Strongly Disagree/ Sangat Tidak Setuju/ দুঃভাবে অসম্মতি	Disagree/ Tidak Setuju/ অসম্মতি	Neither Agree nor Disagree/ Berkecuali/ নিরপেক্ষতা	Agree/ Setuju/ একমত	Strongly Agree/ Sangat Setuju/ দুঃভাবে একমত
1	2	3	4	5

No	Question	Strongly Disagree/ Sangat Tidak Setuju/ দৃঢ়ভাবে অসম্মতি	Disagree/ Tidak Setuju/ অসম্মতি	Neither Agree nor Disagree/ Berkecuali/ নিরপেক্ষতা	Agree/ Setuju/ একমত	Strongly Agree/ Sangat Setuju/ দৃঢ়ভাবে একমত
1.	My employer/ managers stress the importance of wearing personal protective equipment Majikan/ pengurus saya menekankan kepentingan memakai alat perlindungan diri আমার নিয়োগকর্তা / ম্যানেজার ব্যক্তিগত সুরক্ষা সরঞ্জাম পরার গুরুত্ব অপরিহার্য সম্পর্কে	1	2	3	4	5
2.	My employer/ managers express an interest in acting on safety policies Majikan/ pengurus saya menyatakan minat untuk bertindak terhadap polisi keselamatan আমার নিয়োগকর্তা / ম্যানেজার নিরাপত্তা নীতিগুলিতে অভিনয় করার আগ্রহ প্রকাশ করে	1	2	3	4	5

- | | | | | | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|
| 3. | <p>My employer/ managers are concerned about safety improvement</p> <p>Majikan/ pengurus saya prihatin tentang improvasi keselamatan</p> <p>আমার নিয়োগকর্তা / ম্যানেজার নিরাপত্তা উন্নতি সম্পর্কে উদ্বিগ্ন</p> | 1 | 2 | 3 | 4 | 5 |
| 4. | <p>My employer/ managers coordinate with other departments to solve safety issues</p> <p>Majikan/ pengurus saya menyelaraskan dengan jabatan lain untuk menyelesaikan isu keselamatan</p> <p>আমার নিয়োগকর্তা / পরিচালক নিরাপত্তা সমস্যা সমাধানের জন্য অন্যান্য বিভাগের সাথে সমন্বয় সাধন করে</p> | 1 | 2 | 3 | 4 | 5 |
| 5. | <p>My employer/ managers show consideration for workers</p> <p>Majikan/ pengurus saya bertimbang rasa terhadap pekerja</p> <p>আমার নিয়োগকর্তা / ম্যানেজার কর্মীদের জন্য বিবেচনা দেখান</p> | 1 | 2 | 3 | 4 | 5 |

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|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|
| 6. | <p>My employer/ managers explain the safety mission clearly</p> <p>Majikan/ pengurus saya menerangkan tentang misi keselamatan dengan jelas</p> <p>আমার নিয়োগকর্তা / পরিচালকরা পরিষ্কারভাবে নিরাপত্তা মিশন ব্যাখ্যা করে</p> | 1 | 2 | 3 | 4 | 5 |
| 7. | <p>My employer/ managers emphasize worksite safety</p> <p>Majikan/ pengurus saya menekankan keselamatan tempat kerja</p> <p>আমার নিয়োগকর্তা / ম্যানেজার কর্মস্থলের নিরাপত্তা সম্পর্কে জোর দেয়</p> | 1 | 2 | 3 | 4 | 5 |
| 8. | <p>My employer/ managers have established a safety responsibility system</p> <p>Majikan/ pengurus saya telah menubuhkan system tanggungjawab keselamatan</p> <p>আমার নিয়োগকর্তা / পরিচালকদের একটি নিরাপত্তা দায়িত্ব সিস্টেম প্রতিষ্ঠিত হয়েছে</p> | 1 | 2 | 3 | 4 | 5 |

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|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|
| 9. | My employer/ managers establish clear safety goals
Majikan/ pengurus saya menubuhkan matlamat keselamatan yang jelas
আমার নিয়োগকর্তা / ম্যানেজার পরিকল্পনা নিরাপত্তা লক্ষ্য স্থাপন করে | 1 | 2 | 3 | 4 | 5 |
| 10. | My supervisor discusses safety issues with others
Penyelia saya membincangkan isu keselamatan dengan orang lain
আমার সুপারভাইজার অন্যদের সাথে নিরাপত্তা সমস্যা নিয়ে আলোচনা করে | 1 | 2 | 3 | 4 | 5 |
| 11. | My supervisor conducts safety procedures
Penyelia saya menjalankan prosedur keselamatan
আমার সুপারভাইজার নিরাপত্তা পদ্ধতি পরিচালনা করে | 1 | 2 | 3 | 4 | 5 |

12. My supervisor provides safety information
 Penyelia saya menyediakan informasi tentang keselamatan
 আমার সুপারভাইজার নিরাপত্তা তথ্য প্রদান করে

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13. My employer/ managers reward those who set an example in safety behavior
 Majikan/ pengurus saya memberi ganjaran kepada mereka yang memberikan contoh baik dalam tingkah laku keselamatan
 আমার নিয়োগকর্তা / ম্যানেজাররা যারা সুরক্ষা আচরণে একটি উদাহরণ স্থাপন করে তাদের পুরস্কৃত করে

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|----------|----------|----------|
| <p>14. My employer/ managers praise workers' safety behaviours
 Majikan/ pengurus saya memuji tingkah laku keselamatan pekerja
 আমার নিয়োগকর্তা / পরিচালক শ্রমিকদের নিরাপত্তা আচরণের প্রশংসা করেন</p> | <p>1</p> | <p>2</p> | <p>3</p> | <p>4</p> | <p>5</p> |
| <p>15. My employer/ managers have set up a safety incentive system
 Majikan/ pengurus saya menubuhkan sistem insentif keselamatan
 আমার নিয়োগকর্তা / পরিচালকরা একটি সুরক্ষা উদ্দীপক সিস্টেম সেট আপ করেছেন</p> | <p>1</p> | <p>2</p> | <p>3</p> | <p>4</p> | <p>5</p> |

Section C

Bahagian C

বিভাগ সি

To what extent do you agree or disagree with each statement below describing your current company? Please select the most accurate based on the scale above and **circle** your answer.

Sejauh mana anda bersetuju atau tidak bersetuju dengan setiap kenyataan di bawah yang menggambarkan syarikat anda sekarang? Sila pilih yang paling tepat dan **bulatkan** jawapan anda berpandukan skala di atas.

নিচের প্রতিটি বিবৃতির সাথে আপনি কতটা একমত বা অসম্মতি জানান যা আপনার কোম্পানিকে এখন বর্ণনা করে? উপরে স্কেল উপর ভিত্তি করে সবচেয়ে সঠিক নির্বাচন এবং আপনার উত্তর বৃত্ত করুন।

Strongly Disagree/ Sangat Tidak Setuju/ দৃঢ়ভাবে অসম্মতি	Disagree/ Tidak Setuju/ অসম্মতি	Neither Agree nor Disagree/ Berkecuali/ নিরপেক্ষতা	Agree/ Setuju/ একমত	Strongly Agree/ Sangat Setuju/ দৃঢ়ভাবে একমত
1	2	3	4	5

No	Question	Strongly Disagree/ Sangat Tidak Setuju/ দৃঢ়ভাবে অসম্মতি	Disagree/ Tidak Setuju/ অসম্মতি	Neither Agree nor Disagree/ Berkecuali/ নিরপেক্ষতা	Agree/ Setuju/ একমত	Strongly Agree/ Sangat Setuju/ দৃঢ়ভাবে একমত
1.	The frequency of accidents is reducing Kekerapan kemalangan semakin berkurangan দুর্ঘটনার ফ্রিকোয়েন্সি হ্রাস করা হয়	1	2	3	4	5
2.	The frequency of equipment failure is reducing Kekerapan kegagalan peralatan semakin berkurangan সরঞ্জাম ব্যর্থতার ফ্রিকোয়েন্সি হ্রাস করা হয়	1	2	3	4	5

3. The value of product defect and damage is reducing
Jumlah nilai kerosakan dan kecacatan produk semakin
berkurangan
পণ্য ত্রুটি এবং ক্ষতি মান হ্রাস করা হয়

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4. The number of personal injuries is reducing
Bilangan kecederaan pekerja semakin berkurangan
ব্যক্তিগত আঘাতের সংখ্যা হ্রাস করা হয়

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