

EXAMINING THE INFLUENCE OF SAFETY LEADERSHIP TOWARDS SAFETY
BEHAVIOUR IN SME MANUFACTURING

By :

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ABSTRACT

The purpose of this study was to determine the relationship between employer's safety leadership with safety behaviour among Small Medium Enterprises manufacturing sector in Negeri Sembilan. Three independent variables representing safety leadership attributes namely safety motivation, safety concern and safety policy have been selected for this study. Safety behaviour which is the dependent variable has been measured by two dimensions namely safety compliance and safety participation. The employees from SME manufacturing companies in Negeri Sembilan have been selected as a target population. A total of 400 questionnaires were distributed randomly to the Negeri Sembilan SME manufacturing workers and only 210 sets were returned and usable. Correlation and Multiple Regression test were used to analyse the data. Research findings revealed that safety concern and safety policy were significant with safety compliance, with safety Policy ($\beta=0.366$, $t=3.300$, $p=0.001$) was found to have the greatest influence; while safety motivation was not significant with safety compliance. On the other hands, safety motivation and safety concern were significant with safety participation with safety concern ($\beta=0.376$, $t=2.701$, $p=0.007$) was found to have the greatest influence; while safety policy has no influence towards safety participation. Safety concern is an important component of leadership in determining safety behaviour as it has been consistently explaining the variance in both dimensions of safety behaviour.

Keywords: Safety Leadership, Safety Motivation, Safety Concern, Safety Policy, Safety Compliance, Safety Participation, Safety Behaviour

ABSTRAK

Tujuan kajian ini ialah menentukan hubungan antara kepimpinan dan kelakuan kerja selamat di kalangan pekerja-pekerja perusahaan kecil sederhana (PKS) sektor pembuatan. Tiga pembolehubah mewakili kepimpinan keselamatan iaitu motivasi keselamatan, keperihatinan keselamatan dan polisi keselamatan telah dipilih untuk kajian ini. Kelakuan kerja selamat pula diukur melalui pematuhan keselamatan dan penyertaan keselamatan. Pekerja PKS sektor pembuatan di Negeri Sembilan telah dipilih sebagai populasi sasaran. Sebanyak 400 set borang soal selidik telah diedarkan secara rawak kepada pekerja-pekerja PKS sektor pembuatan di Negeri Sembilan dan hanya 210 set borang telah dikembalikan dan boleh digunakan bagi kajian ini. Ujian korelasi (Pearson Correlation Coefficient) dan ujian regresi berganda (Multiple Regression) telah digunakan untuk penganalisaan data. Hasil kajian menunjukkan keperihatinan keselamatan dan polisi keselamatan adalah signifikan terhadap pematuhan keselamatan, dengan polisi keselamatan didapati mempunyai pengaruh yang paling tinggi ($\beta=0.366$, $t=3.300$, $p=0.001$) manakala motivasi keselamatan tidak signifikan dengan pematuhan keselamatan. Dalam pada itu, motivasi keselamatan dan keperihatinan keselamatan adalah signifikan terhadap penyertaan keselamatan, dengan keperihatinan keselamatan didapati mempunyai pengaruh yang paling tinggi ($\beta=0.376$, $t=2.701$, $p=0.007$) manakala polisi keselamatan tidak signifikan dengan penyertaan keselamatan. Keperihatinan keselamatan adalah satu komponen kepimpinan yang penting dalam menentukan kelakuan kerja selamat setelah faktor ini telah menerangkan secara konsisten dalam kedua-dua varians kelakuan kerja selamat.

Kata Kunci: Kepimpinan Keselamatan, Motivasi Keselamatan, Keperihatinan Keselamatan, Polisi Keselamatan, Pematuhan Keselamatan, Penglibatan Keselamatan, Kelakuan Kerja Selamat

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LIST OF ABBREVIATIONS

DOSH	Department of Occupational Safety and Health
FMA	Factories and Machinery Act
GDP	Gross Domestic Product
KLIA	KL International Airport
NIOSH	National Institute of Occupational Safety and Health
OSH	Occupational Safety and Health
OSHA	Occupational Safety and Health Act
OSHMP 15	Occupational Safety and Health Master Plan 2010- 2015
SMEs	Small Medium Enterprises
SME Corp	Small Medium Enterprises Corporation
SOCSSO	Social Security Organisation

CHAPTER I

INTRODUCTION

1.1 Background of Study

Study on human safety behaviour as the main predictor of occupational accident started as early as 1940s where Heinrich (1941) concluded that 88% of the industrial accidents are caused by unsafe behavior whilst. Based on Heinrich Theory, human factor is the important to be investigated because it contributed the most to the occurrence of workplace accidents. Then, Bowander (1987) concluded that workplace accident contributing factors are namely engineering factor, technological factor, system failure factor and also human safety behavioural factor . After that, Gyekye (2010) found that safety behaviour of the workers (unsafe act) is the main fundamentals which cause occupational accident besides working environment (unsafe condition). Besides above mentioned literatures, various efforts have been made by previous researchers to understand and identify problems related to safety behaviour among employees from different sectors such as construction, oil and gas industry, food industry, manufacturing and so forth (DePasquale & Geller, 1999;Langford, Rowlinson, & Sawacha, 2000; Medina, McSween, Rost, & Alvero, 2009; Rundmo, Hestad, & Ulleberg, 1998; Tucker & Turner, 2011) as it is believed that the identification of the main contributors to safety behaviour could lead to the prevention of industrial accidents.

In Malaysia, the number of occupational accidents reported to Social Security Organisation (SOCSO) is 57,639 cases for 2010. The industrial accident recorded 35,603 cases while the remaining cases falls under the category of commuting accident (SOCSO , 2011). While in 2011, the number has increased to 59,897 cases, with 35,088 of industrial

accident cases has been declared (SOCSO , 2012). For subsequent year, the number of workplace accidents cases reported to SOCSO increased by 2.67 % compared to 2012 (SOCSO , 2013). These annual reports also recorded that the largest number of occupational accident's cases was contributed by manufacturing sector. On the other hand, the Department of Occupational Safety and Health (DOSH) ,the government agency that is responsible for Occupational Safety and Health (OSH) reported that 2429 cases of industrial accidents were investigated in 2011. The cases are involving fatality, permanent disability as well as non-permanent disability cases from 10 sectors of industry (stipulated in Occupational Safety and Health Acts 1994). For 2012, total industrial fatality accidents cases which have been investigated by the department are 192 cases (DOSH , 2013).

Workplace accident has become a major problem in industrialisation world (Biggs, Sheahan & Dingsdag; 2005) including Malaysia (based on the statistic introduced above). It has become a serious issue in Malaysia as the accident cases related to work are increasing from year to year. Industrial accidents bring a lot of impact to the involved organisations. The impact are such as financial lost (cost of machinery repairing, medical expenses, legal fees) and also non-monetary aspects of lost such as decreasing morale of employees as well as company's reputation (Noorul Huda Zakaria, Norudin Mansor & Zalinawati Abdullah; 2012). Furthermore, OSH compliance could not only reduce workplace injury risks, but also improve an organisation's overall performance as well as competitive advantage (Ansari & Modaress, 1997). Therefore, safety behaviour among the workers must be seriously addressed and promptly monitored in order to increase the OSH level of standard at the workplaces and furthermore to prevent industrial accident from occur and recur.

Small and medium enterprises (SME) has played an important role in contributing to the economic development of Malaysia. SME Corporation of Malaysia (SME Corp) has published that SMEs are contributing up to 32 %, to the total GDP of Malaysia (National SME Development Council , 2013). In spite of their role as the main contributor to the development of country's economy, the SMEs also are the main contributor to Malaysian workplace accident statistic. Lim (2002), as cited by Lilis Surienty (2012), reported that SMEs have 30% to 50% higher of the workplace accident rate compared to the big industries.

Furthermore, the SMEs also have been labeled as the sector which has lower level of OSH Compliances compared to huge organisation. Lilis Surienty (2012) cited finding of Yahaya (2002) who concluded that poor compliance has been found among two thousand and six hundred SMEs audited by DOSH in 2002. This is supported by a study done in Europe which resulted low compliance towards OSH regulations for small industries (Jeynes , 2002).

SMEs are significantly different in characteristics compared to large organisations. The differences are especially in terms of financial, expertise and staffing capabilities have put on a constraint in implementing OSH. Lilis Surienty (2012) stated this matter in her study, while Cook (2007) added that the organisation's size plays huge part in determining the effectiveness of OSH implementation. Big and multinational companies own advantages in terms of financial muscle and organisational structure. The big firms are always well-structured with appropriate qualified and experienced human resources in each department or division such as finance, marketing, account, sales, human resource management, maintenance, production, training and others. The employees carry out their specific jobs and

tasks in their designated posts including the position which is related to OSH. Through their financial advantage, the companies could appoint specific and competent personnel usually known as Safety and Health Officer (SHO) to carry out OSH related tasks and this situation leads to the effectiveness of OSH implementation in the organisation. Comparing to the SMEs, the organisational structure is usually simpler where the owner-manager plays all the important roles by his/herself. The owner-manager cum the director of the organisation will also carry out other duties which are supposed to be performed by other personnel. Due to above explained limitation, the employees are usually instructed to be multi-tasking and the management always focus on productivity and cost saving, thus provides little time to spend on workplace safety issues.

In a nutshell, safety level in SMEs is reported to be poor. Thus, the roles of owner-managers including commitment and leadership (Lilis Surlenty, 2012), plus positive perception, knowledge and OSH related competency (Baba Md Deros, Ahmad Rashdan Ismail & Mohd Yusri Mohd Yusof, 2012) are essential towards inculcating safety behaviour among the workers and furthermore decrease industrial accidents at their workplaces.

1.2 Problem Statement

As explained in the earlier section, SMEs own different criteria which distinguishes them from large companies management practices including OSH management system (Lilis Surity , 2012). The bigger firms have well-structured organisation with specific divisions such as account, finance, research and development (R & D), human resource management, sales and marketing as well as a specific division or unit taking care of OSH. Therefore, with more resources of financial, experience as well as expertise, large firms tend to implement OSH effectively than the SMEs (Lingard & Rowlinson, 1994). In the SMEs, the owner-managers must carry out all the management and operational roles in his/her own company by themselves . Therefore, their responsibilities towards OSH are always being overlooked and usually fall on the shoulder of the employees who are usually instructed to take care their safety and health at work by themselves (Holmes, 1999). Holmes (1999) also found that the implementation of OSH in smaller companies is not effective because the management put the responsibility on the employees to look after their own safety and health at work. Due to the financial constraint, SMEs have limitation in sending their workers to undergo trainings related to OSH. In addition, their operation and production process might be distracted if some of the employees are sent to undergo OSH related trainings during working hours as the number of workers for SMEs is limited compared to large companies.

Taylor (2012) suggested that poor human factor was the possible major factor to Chernobyl 1986 nuclear plant accident. Noorul Huda Zakaria et.al. (2012) found that the failure of the workers to work safely according to Standard Operating Procedure (S.O.P) will contribute to workplace accident. In addition, Gyekye (2010) stated that the main two

fundamentals which cause occupational accident are the characters of the worker (unsafe act); and the characteristic of the working environment (unsafe condition). Previous research found that the accident at workplaces can be reduced if employees and employer are more committed in having and maintaining good safety behaviour (Makin & Suntherland, 1994; Christian et.al., 2009).

According to the observations of senior DOSH officers who have been conducted factory and machinery inspections for more than 5 years, the literature cited above could be applicable to the SMEs in Malaysia. The observations show that the unsafe acts committed by the SME workers, plus the limitation of SMEs as small organisation (as explained earlier) has become the main contributors towards poor safety performance. To overcome the SMEs limitations in executing OSH effectively, an appropriate approach or method, which is inexpensive yet effective must be applied; especially to increase safety behaviour among the workers. In this sense, as a DOSH officer, the author presumes that OSH leadership role of the SME's owner-manager could foster safe working behaviour among their workers. It is expected that good safety behaviour exemplified by them is duplicated by the SMEs' workers. This opinion is based on Hagan, et.al. (2001) studies which stated that the employees will observe the superiors' attitude towards safety and the situation could reflect the management commitment towards OSH. Furthermore to support the assumption, Yang, Wang, Chang, Guo & Huang (2010) found the significant relationship between leadership behaviour and safety culture and safety performance in their study. Flin & Yule (2004), on the other hand stated in their study that leadership is highly applicable in influencing safety performance of an organisation. Anton (1997) also stated that the superiors in an organisation are responsible in developing the workplace positive safety attitude among the subordinates. In

addition, participative leadership would also elevate the acceptance of safety responsibility as well as instill safety ownership among the workers (O'Dea & Flin ; 2001).

Based on the studies cited above, it can be assumed that safety leadership attributes among the SME's owner-managers could foster safety behaviour among SME workers. This hypotheses is believed could reduce the gap on SMEs safety performance compared to other huge organisations in lieu with their SME limitations which has been explained earlier.

1.3 Research Question

This research attempted to provide answers for following questions:

- 1) Does the perception of safety leadership with respect to safety motivation will be positively related to safety compliance among the SME workers?
- 2) Does the perception of safety leadership with respect to safety motivation will be positively related to safety participation among the SME workers?
- 3) Does the perception of safety leadership with respect to safety policy will be positively related to safety compliance among the SME workers?
- 4) Does the perception of safety leadership with respect to safety policy will be positively related to safety participation among the SME workers?
- 5) Does the perception of safety leadership with respect to safety concern will be positively related to safety compliance among the SME workers?
- 6) Does the perception of safety leadership with respect to safety concern will be positively related to safety participation?

1.4 Research Objectives

In conjunction with the problem statement above, this study aims to evaluate the SME workers perceptions on the owner-manager's safety leadership, and determines its influence towards safety behaviours. Specifically, this study attempted the following:

- i. to investigate whether the SME workers' perception towards their employer's safety leadership from the aspect of safety motivation will influence their safety compliance.
- ii. to determine whether the SME workers' perception towards their employer's safety leadership with respect to safety motivation will influence their safety participation.
- iii. to investigate whether the SME workers' perception towards their employer's safety leadership with respect to safety policy will influence their safety compliance.
- iv. to determine whether the SME workers' perception towards their employer's safety leadership with respect to safety policy will influence their safety participation.
- v. to determine whether the SME workers' perception towards their employer's safety leadership with respect to safety concern will influence their safety compliance.
- vi. to determine whether SME workers' perception towards their employer's safety leadership with respect to safety concern will influence their safety participation.

1.5 Scope of Study

Pandya (2012) concluded that the SMEs contribution towards Gross Domestic Product (GDP) as well as creating the employment opportunity, in both developing countries and developed countries is undeniable. In spite of becoming the main contributor towards the country's GDP, the SMEs also is the main contributor of the industrial accidents cases in Malaysia with 80% (Lilis Surlenty, 2012). As explained in previous section, the Malaysia SMEs safety standard at workplace are at below necessary standard level. As per DOSH observations, safety behaviour among the SME workers also are found to be poor.

The SMEs consist various sectors including services, manufacturing, construction, agriculture and others, services sector forms the biggest numbers in SMEs followed by the manufacturing sector has been selected as the focus sector of this study. Despite being the second largest sector in SMEs, SME manufacturing sector has recorded the highest growth of Malaysian GDP which is 7.6% (National SME Development Council, 2012). Based on this fact, the manufacturing sector of SME is forecast to grow further and expand in this near future. This has been confirmed in the survey conducted by SME Corporation which found that 62% of the respondents are highly confident with the business prospect of SME manufacturing in 2012 (National SME Development Council, 2012).

The report also stated that the growth of SME manufacturing sectors is expected as the result of the higher support by the consumer industry such as food and textiles. In addition, the implementation of various programs consist in the National Economics Transformation Plan (ETP) and Government Transformation Plan (GTP) leads to the generation of new building construction and infrastructure projects especially in rural area.

This scenario is indirectly contributing to the growth and expansion manufacturing sector which produced materials and products related to architecture and civil engineering, for example steel and metal industries.

In addition, the economic expansion in Malaysia is expected to lead to the rapid enlargement of manufacturing industries and furthermore associates with intensive employment of new workers, plus the utilisation of new machinery and equipment. The application of the new machinery, equipment and material; plus the employment of new workers from diverse background and personal characteristics would contribute to the emerging of new hazards as well as pose higher risk of accident at workplaces (Saad, Fatimah & Zairihan , 2011). Based on current statistic, manufacturing industry is the main contributor towards occupational accident in Malaysia, compared to other sectors (DOSH, 2012; SOCSO , 2012). In addition, the risk of industrial accident in SME manufacturing sector is expected to be higher than the larger manufacturing firms as the latter own more capability to control hazards at workplaces. This is approved by Saad, et. al. (2011) who found that organisational size would negatively influence the number of industrial accident in manufacturing sector.

Furthermore, this study aims to focus on SME manufacturing sector in Negeri Sembilan. The state that located in southern part of Klang Valley has become a newly potential industrial hub specifically for manufacturing industry. It is due strategic geographical location of the state which is proximate to the capital Kuala Lumpur, KL International Airport (KLIA), Port Klang, Federal Administration Centre (Putrajaya) and Multimedia Supercorridor (Cyberjaya), plus a great road and rail network. Such advantages own by the state are expected to become the main attraction to local and foreign investors to

establish their investments especially in manufacturing industry. In addition, the much lower cost of industrial development compared to other industrial areas in the Klang Valley , due to cheaper land prices , could become another plus point to attract the foreign and local investors. (“Negeri Sembilan tumpuan ‘gergasi’ , 2013). Furthermore, in the state development agenda, Seremban 2, Nilai, Sendayan and Bandar Enstek have been established as business hub, education services and administrative centre in Negeri Sembilan away from capital Seremban fully complete with all the conveniences required such as a series of connected highway system from KLIA, Putrajaya and Port Dickson; sufficient electricity and water supply; and other modern infrastructure . These locations are part of the Federal Government effort to bring development to Negeri Sembilan to serve as the main gateway to Greater Klang Valley under the recent National Structure Plan. As the result, Negeri Sembilan recently has become the focus of investment from the giant multinational companies such as Nestle, Kelloggs, Coca Cola and other multinational manufacturing firms. Furthermore, the well constructive development plan also has attracted the leading Japanese Automotive industrial players such as Hino Motors to set up their manufacturing plants in Sendayan Technology Park. Above mentioned statement has been confirmed by the Negeri Sembilan Chief Minister, Dato’ Seri Utama Mohammad Hassan during the Federation of Malaysian Manufacturer (FMM) annual dinner which was held on 23 of May 2012 at Klana Resort, Seremban. The learned Chief Minister revealed that the state government has received many applications of investments from outside the state which worth more than RM 1 billion. This scenario is also expected to stimulate the growth of SMEs especially the manufacturing sector and plenty of SME manufacturing factories are expected to be opened in Negeri Sembilan. Based on this forecast, the state government through the Economic Planning Unit of Negeri Sembilan has outlined ‘to strengthen growth of manufacturing and

SMEs' as one of the high priority projects which to be implemented in recent years. (Unit Perancang Ekonomi Negeri Sembilan, 2009).

In summary, this study is limited to SME manufacturing sector in Negeri Sembilan based on the above explained reasons plus Negeri Sembilan is easier for the managerial and operational purposes of this research in terms of geographical, population as well as time frame.

1.6 Significance of Study

This study attempted to serve as basic guideline for DOSH in formulating effective strategies in carrying out programs in the respective master plan. Furthermore, the findings of this study will be valuable for the purpose of designing safety leadership training programs and campaign for the owner-managers of SMEs in Malaysia.

On the other hand, the findings of this study could benefit the owner-manager of SMEs in providing alternative view in implementing their OSH Management System (OSHMS) in order to elevate the OSH performance in spite of their own limitations. Furthermore, it is expected that the outcome of this study could be applicable as a guide for DOSH and to construct different approaches in enforcing and promoting OSH towards the SMEs, specifically in terms of fostering safety behaviour and practices.

Furthermore, this study also attempted to provide empirical evidence on significant factors associated with the relationship between employer's safety leadership and safety behaviour among the workers, specifically in Malaysian SMEs manufacturing firms. As strength of the association will be quantified, it could also contribute as an academic reference to future researchers. Lastly, it is also hoped that the study will be replicated by other DOSH State Offices or OSH researchers in the future.

1.7 Organisation of the Thesis

This study consists of five chapters in which each will be discussed in depth later. Apart from Chapter 1, Chapter 2 consists of review of related literatures and researches related to the problem being investigated. Literatures on the variables of safety leadership attributes (safety motivation, safety concern and safety policy) and their impact on safety behaviour (safety compliance and safety participation)

Chapter 3 provides the details of the applied methodology. This chapter will focus on the measurement of each variable and discussed the validity and reliability of the study instruments. Discussion on data collection procedures and statistical analysis are also written in this chapter.

Chapter 4 examines the research framework and all the descriptive and inferential statistical analysis results are presented.

Chapter 5 as provides a brief summary of the study as well as the implication of the findings towards theory and practice. Some recommendations are also made for further researchers as well as managerial improvements.

CHAPTER II

LITERATURE REVIEW

2.0 Introduction

This chapter will firstly review the literature pertaining OSH development , OSH related rules and regulations,as well as OSH emerging issues in Malaysia. Secondly, this chapter will explore the profiles and implementation of OSH, plus the challenges within SMEs and also within the context of manufacturing set up. Previous chapter introduce that most of industrial accidents are from SMEs sectors . This situation is caused by their OSH implementation and performance which is far from the necessary standard (Zalina Hussin, Kamaruzaman Jusoff, Ju & Kong, 2008). In addition, safety behaviour had become one of the important factors contributing to the workplace accident in manufacturing sector.

Thirdly, this chapter will explore on the previous empirical studies on safety performance, and subsequently, reviews on related empirical studies regarding the determinants of safety behaviour will be performed. Vries and Lechner (2000) stated that lack of leadership support by the superiors inclines the workers to risk taking behaviour at their workplaces . Thus, this chapter will also review previous researches on the relationship between leadership and behaviour in general , and the focusing on the relationship between safety leadership and safety behaviour.

In conclusion, this chapter is expected to provide empirical evidences that that the safety leadership attributes of the owner-managers could shape the safety behaviour of

SMEs workers. Research 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 an area of ensuring that the people are protected from the injury which is associated with their work and could be achieved by eliminating factors and conditions which are hazardous (World Health Organisation, 1995; Koehn , Friend & Winterberger ,1996 ; Alli, 2001). Furthermore, to ensure the success of protecting workers safety and health at work, Deshmukh (2006) suggested that structured approach of OSH management system would be the best solution.

The history of Occupational Safety and Health in Malaysia began since 1800s. According to Jabatan Keselamatan dan Kesihatan Pekerjaan (2008), Occupational Safety and Health move is recorded to start by the appointment of the first Machinery Inspector in 1878. The duty was to inspect the safety of boilers in Allied Malay States in compliance with Steam Boiler Enactment 1908. Then, Machinery Enactment of 1913 was established. In conjunction with the establishment , the inspectors must inspect steam boilers plus other machinery including self-combustion engines, water turbines and other related auxiliary machinery. In the year 1967, the Factory and Machinery Act (FMA) was approved by the Parliament. Due to the newly enacted law, The Factory and Machinery Department was established and the post of Machinery Inspector was upgraded to Factory and Machinery Inspector and also Assistant Factory and Machinery Inspector. In approximately 24 years, Occupational Safety and Health Act (OSHA) 1994 (Act 514) was approved and gazetted. This legislation was made considering the fact that the Factory and Machinery Act 1967 only covers occupational safety and health in the manufacturing, mining, quarrying and construction industries, whereas it not covering the other industries . OSHA 1994 covers all

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 main custodian of OSH in Malaysia.

2.1.1 Occupational Safety and Health Legislation in Malaysia

As Factories and Machinery Act 1967 covers only certain sectors and is found very prescriptive, the promulgation of Occupational Safety and Health Act (OSHA) 1994 become a turning point for OSH legislation development in Malaysia (Ismail Bahari, 2006). The purpose of Occupational Safety and Health Act 1994 is to promote and encourage self-regulation practice among the industries or related organisations by creating the awareness among workers and employers. Ismail Bahari (2006) further stated that OSHA 1994 emphasises on promoting safe working culture among the employers as well as employees through good occupational safety and health management. Self-regulation means the employers formulate and implement their own OSH Management System according to rules, regulations and guidelines by DOSH. In specific, the employers must study the related hazards exist in their workplaces and work systems, analyse the risk associated to the hazards and establish control measures which are perceived as practicable; and furthermore formulate a safety and health policy statement to express their commitment towards employees' safety, health and welfare at work. The general duties of the employers are clearly stated in OSHA 1994. Section 15 of the act provides that the employers are responsible in ensuring their workers' safety and health at work. It is compulsory for the employers to make arrangement and provide workplaces and work systems which are safe and without risk to the workers' health. The section also provided that the employers must

inform, give instruction, train and supervise their workers on the matters related to safety and health at workplaces.

In addition, section 16 of OSHA 1994 provides that the employers must establish the organisational “Safety and Health Policy” which includes the commitment as well as organisation structure in ensuring workers’ safety and health. The organisation structure is including the responsibility system and structure in order to implement OSH practices at workplace established by the employers.

2.1.2 Industrial Accident Statistics in Malaysia

Department of Occupational Safety and Health Malaysia has projected that occupational accident rate in Malaysia must achieve as low as 3.0 cases per 1000 employees by the year of 2020. This mission was announced by then Director General, Dato’ Ir Dr Johari Basri; as reported by Bernama on 29 November 2010. Then the Minister of Human Resource, Dato’ Seri Dr S Subramaniam announced the recent industrial accident rate in Malaysia is 3.40 cases/ 1000 workers as per 2011 (as reported by Sinar Harian on 30 October 2012)

In order to achieve the mission to reduce the number of industrial accident rate, the government, through DOSH; has established one master plan for Malaysian Occupational Safety and Health renowned as OSH Master Plan 2015 (OSH MP 15). This master plan has been launched by the Prime Minister, Dato’ Seri Najib Razak on 2nd May 2009 and has been recognised as the national framework for OSH. This framework has outlined several strategies and programs to be implemented in order to elevate the OSH compliances among

the organisations in Malaysia and furthermore to decrease the number of industrial accident and occupational diseases. It is stated in the master plan that its main objective is to establish self-regulation of OSH among the organisation in related sectors by the year of 2015 (Occupational Safety & Health Master Plan 2009-2015, 2009).

Over these years, industrial accident rates in Malaysia show a decreasing trend. When Occupational Safety and Health Act 1994 was first introduced, the rate of industrial accident was nearly 18 per 1000 workers. The accident rates then had declined to 11 per 1000 workers by 1999 and continue to decline in recent years (Maimunah Aminuddin, 2013). Based on the industrial accident's statistics from DOSH and SOCSO annual report, Fig 2.1 is a graph expresses the most recent industrial accident statistics in Malaysia based on SOCSO and DOSH Annual Report from the year 1995 until 2013.

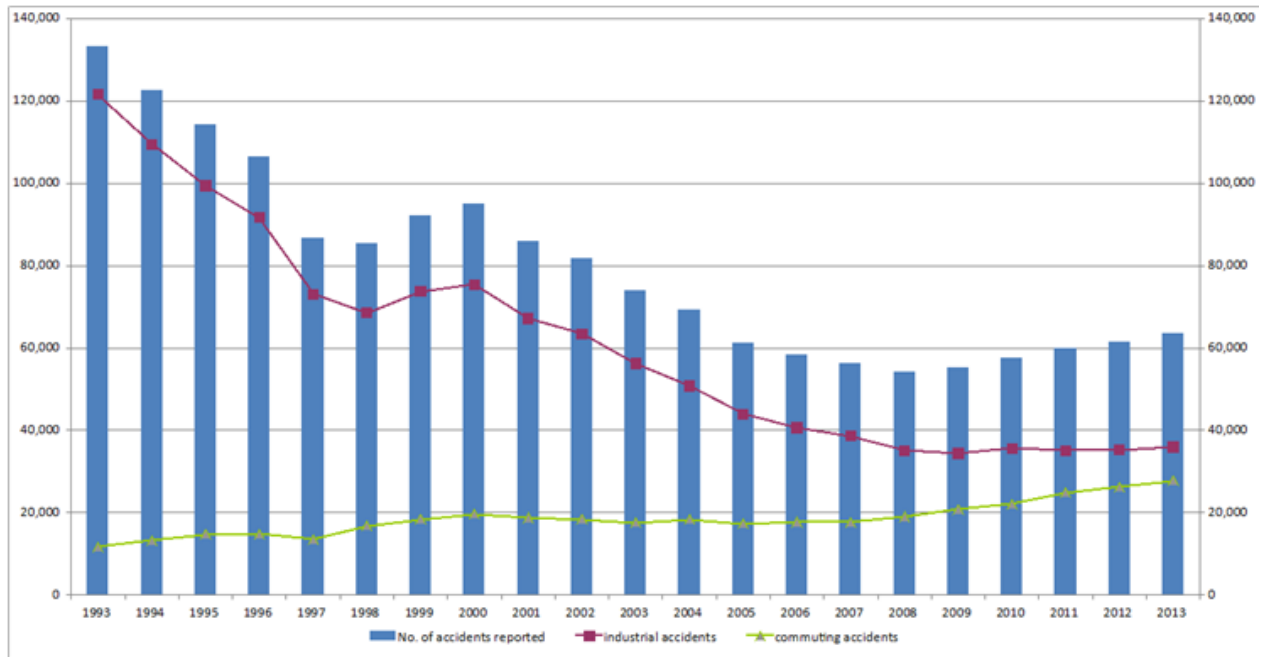


Figure 2.1
Industrial Accident Rate (Source: DOSH & SOCSO Annual Report)

2.1.3 Occupational Safety and Health Newly Emerging Issue in Malaysia

In recent years, Malaysia has decided to robustly push its economic and industrial development. This has brought in greater challenges to occupational safety and health area especially to the DOSH as this phenomenon has brought broader range of hazardous conditions and material which could increase of the industrial accident rates. This situation also has increased the likelihood of exposure to the occupational diseases’s risks among the workers in Malaysia.

Based on the situation, it is opined that OSH in Malaysia traditional approaches namely enforcement and engineering control could not be effective without support from other methods . Nor Azimah Chew Abdullah, Chandrakantan Subramaniam & Zubaidah Hasan , (2010) stated that it takes a comprehensive management system that focuses on

inculcating OSH culture at the workplaces and this could be achieved by encouraging the workers towards safety behaviour . In conjunction with this fact, the government realises that enforcement alone is not enough in ascertaining safe and healthy at workplaces. Therefore, a new framework called ‘Occupational Safety and Health Master Plan for Malaysia 2015 or OSH-MP 15’ was established which consist several comprehensive strategies to create safe and healthy workforce. The ultimate goal is to cultivating and sustaining safety and health working culture throughout Malaysia by the year of 2020 (Masilamani, 2010). This master plan stated that by the year of 2015, OSH will be self-regulated among the industries in Malaysia through a comprehensive internal OSH framework which are not only depending on enforcement activities executed by DOSH.

2.2 Occupational Safety and Health in SMEs

As a result of vast and dramatic economic development in recent years, SMEs become vital component contributing to the growing economy in the developing country. There are many researchers stated the important of SMEs’ contribution towards the nation growth (Omar, Arokiasamy, & Ismail, 2009; Smolarski & Kut, 2009; Saleh & Ndubisi, 2006). In addition, Fan (2003) identified that SMEs help in reducing poverty of many countries as they become the largest provider of employment especially for new jobs. Whilst, Phoon (2001) 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.

SMEs are defined and interpreted in many ways throughout the world based on their characteristics. In Malaysia, the SMEs are defined quantitatively based on fixed criteria set by

the government. They are either determined by the number of full time employees or annual sales turnover. Table 2.1 summarised the definition of the SME of Malaysia as according to the National SME Development Council (2013).

Table 2.1
SME Definition

Category	Small	Medium
Manufacturing	Sales turnover from RM 300,00 to less than RM 15 million <u>OR</u> full-time employees from 5 to less than 75	Sales turnover from RM 15 million to less than RM 50 million <u>OR</u> full-time employees from 75 to less than 200
Services & Other Sectors	Sales turnover from RM 300,00 to less than RM 3 million <u>OR</u> full-time employees from 5 to less than 30	Sales turnover from RM 3 million to less than RM 20 million <u>OR</u> full-time employees from 30 to less than 75

(Source: SME Annual Report 2012/2013, National SME Development Council)

SMEs are also known to have different criteria that distinguish them from huge organisation. Mohd Khairuddin Hashim & Mat Saad Abdullah (2011) stated that SMEs' special criteria are such as actively owner-managed, highly personalized by the owner management styles, very local in their operating areas and highly dependent on their internal resources to grow. These criteria are definitely different with large and well established organisations. As SMEs continue to play an important role in the economic and industrial growth in developing countries as well as the developed countries (He, Zhang & Mol, 2011), their workplace safety and health level is still far from achieving the necessary standard

(Diugwu, 2011). In India, Sinha (2000) summarised SMEs as small and loose structured small organisation with personalised and flexible manager-worker relationship, and most of them have poor performance of OSH. Most of the workplace conditions, especially in terms of workers safety and health are intolerable. The noise, dust and heat exposure towards workers plus the lightings are far from the standard provided in OSH rules and regulations. Furthermore, the management responsibilities in terms of safety concern as well as safety policy is lacking in Indian SME manufacturing set up as the employees are not supplied by appropriate personal protective equipment.

Besides that, other studies found that the SMEs workers are highly exposed towards ergonomic hazards such as prolong standing, chemical hazards as well as mineral dusts and this situation are considered common (Holkeri, 2001; Manuaba, 2001; Phoon , 2001). According to Machida and Markkanen (2000) , the awareness of hazards associated with the works among the SMEs workers, and the compliance towards OSH related legal requirements among the SMEs owner-managers are low.

In Malaysia, the SMEs contributes the most workplace accident cases. Phoon (2010) reported that Ir Hj Abu Bakar Che Man (former Director General of DOSH) estimated that 80 to 90 per cent of workplace accidents reported to SOCSO are from SMEs. Dato' Ir Dr Johari Basri, the Director General of DOSH (retired in July 2014) also confirmed that 80% of the industrial accidents are from the SMEs (“80 peratus kemalangan industri babitkan IKS”,2010).

Most of previous studies concluded that the characteristics owned by the SMEs distinguish their safety performance from the larger organisation. Yapp & Fairman (2006)

stated that the different characteristics in terms of financial, knowledge, expertise and human resources capability distinguished their human resource practices, including OSH from the large businesses. Whilst, lack of related knowledge among the management and workers, professional personnel as well as financial resources among the SMEs become main predictors towards poor OSH performance (Lilis Surienty , 2012). Yuan & Wang (2012) found that weak fundamental and OSH awareness among the managers, weak safety organisation (structure), incomprehensive of safety functional structure and inexistence of safety personnel within the organization are the current status and characteristic of SMEs which determine poor management of OSH.

In Malaysia, studies conducted on SMEs are very limited especially pertaining OSH. Baba Md Deros, Ahmad Rasdan Ismail, Jaharah A Ghani & Mohd Yusri Mohd Yusof (2014) conducted study in selected SMEs throughout Malaysia regarding OSH compliances. The study observed that 90% of the respondents believed that their organisations do not conform to the basic requirement of OSH regulations. In addition, the result shows that lack of staff with OSH related knowledge become the main cause of the non-compliances followed by the negative perceptions that the implementation of OSH is rather difficult and costly. In order to implement OSH effectively and furthermore reduce accidents at workplaces, the owner-managers of SMEs, who are also the employers, must perform their responsibilities as provided in OSH rules and regulations.

Based on the literatures cited above, it could be understood that the unique characteristics of the SMEs, compared to the larger organisation have become barriers for them in achieving good OSH performance. The limitation of monetary resources, the small organisation's size, and simple organisational structure in the SMEs restrain them from

managing employees' safety and health effectively at the workplaces (Lilis Surlenty, Khoo & Kee, 2011). Based on this fact, it is seemed to be unaffordable for SMEs to establish a standard management structure of OSH. This fact was also admitted by former Director General DOSH, Dato' Ir Dr Johari Basri in his statement to Harian Metro which concluded that capital constrain, lack of expertise and skilled workers plus the lack of OSH awareness among the owner-manager of the SMEs lead to the low level of OSH. In lieu to the constraints on the part of SMEs, alternative method of approach should be applied in order to ensure safety and health performance among them ("Pengusaha IKS Perlu Jawatankuasa KKP", 2013). Therefore, the owner-managers of SMEs need to find the simple and inexpensive, yet effective method in ensuring the good OSH performance of their companies.

Hagan, Montgomery & O'Reilly (2001) stated that the employees will observe the superiors' attitude towards safety. Herold, Fedor, Caldwell & Yi (2008) found in their study that transformational leadership has significant relationship with employees' commitment to change. A transformational leader owns the ability to engage and motivate followers to support his/her set goals. Based on these statements, it is believed that leadership approach by the owner-managers could instill safety compliance behaviour among the SME workers. At the same time, SME owner-managers could utilize their leadership roles in engaging the participation among their workers in OSH related behaviour. The strength of SMEs such as the owner-management, flat management as well as flexible management structure (Kalpande, Gupta & Dandekar, 2010) are seemed to encourage direct engagement between the owner-managers and their workers. Thus, direct leadership approach by the owner-manager towards increasing OSH awareness, inculcating safety behavior as well as engaging safety participation is suggested to be the most appropriate approach in ascertaining positive

safety behaviours among the workers within the context of SMEs. Perceived safety leadership of owner-manager of the SMEs could shape safety behaviour among the involved workers as Anderson, Frod and Hamilton (1998) stated that leadership in terms of exercising of power by higher authority personnel over the followers could obtain their cooperation to ensure the accomplishment of specific goals

2.3 Occupational Safety and Health in Manufacturing Sector

Manufacturing industry has become the main contributor to occupational accident statistics throughout the world. In the UK, Health and Safety Executive Statistics (2013) reported that manufacturing sectors contributed more than 80% of the ‘self-reported work-related illness’ from 2002 until 2012 as compared to other sectors. Workplace Safety and Health Report Singapore (2013) reported that manufacturing sectors featured the highest workplace injury cases (2690 cases) in 2012 followed by construction sectors with a total of 2081 cases. The same scenario occurs in Malaysia where manufacturing sectors recorded the highest industrial accident cases compared to other sectors (DOSH , 2012; SOCSO , 2012).

Rapid development in Malaysia nowadays also leads to rapid expansion in manufacturing sectors. This phenomenon then associates to the large employment of new workers as well as machinery, tools and equipment which might increase the likelihood of workplace accidents due to the high exposure towards various types of hazards (Saad Mohd Said, et.al. 2012). Employees’ individual factors (human factor) as well as working environment factors are seemed to become main contributor towards accident in manufacturing organisations. Noorul Huda Zakaria et. al. (2012) conducted a study in a

manufacturing company in Malaysia regarding the most common causes of workplace accidents which are divided into individual factor and the nature of job. The study resulted high significant relationship between stress and fatigue due to workload and workplace accidents and also low to moderate significant relationship between workers' unsafe act and workplace accidents. Low to moderate relationship also determined between handling machinery and tools as well as workplace's design.

Manufacturing workers are exposed to different types of workplace hazards due to their nature of work. Sarok & Susil (2012) conducted a study in a Japanese electronic factory in Sarawak and found that the workers are mainly exposed to physical hazards. The study results indicated that 45.6 % of the respondents are exposed to mechanical (moving objects), ergonomic (manual handling and working with awkward position), noise, and chemical hazards. The study also shows that majority of the workers do not practice safety compliance in terms of wearing personal protective equipment (P.P.E).

Zalina Hussin et. al. (2008) conducted a study on accident predictors in 51 SME Food Manufacturing companies in Kedah. Among 256 respondents, 46.2 % perceived that the accidents are caused by their colleagues' unsafe acts. In addition, 71.6 % responded that they only received warning due to the accidents and no further punishments were imposed by the managements.

Saad Mohd Said et. al. (2012) conducted a study on the predictors of industrial accidents in 44 manufacturing company of Malaysia. The factors tested were firm size, capital intensity, production workers, female workers and cyclical variation. Firm size was

found negatively significant towards industrial injury rate. Whilst, the percentage of production workers including the numbers of female workers positively influenced the industrial injury rate. Then the study concluded that large manufacturing firms were able to prevent injury at workplace more than the smaller firms. Saad Mohd Said et. al. (2012) also added that despite manufacturing sector contributes the highest number of workplace accidents in Malaysia; empirical study on manufacturing sector is found limited compared to construction sector . Manufacturing sector, especially the small and medium firms should be given priority in related to OSH improvement in order to reduce industrial accident rate.

Azian, Yusof & Leman (2012) reported that in 2009, 94.2 % of the total manufacturing organisations are represented by SMEs and 38 % of total manufacturing workers are from SMEs. On the other hand, Leman & Ishak Baba (2012) stated in IEP Convention that numbers of industrial accidents in manufacturing sector are majorly contributed by the SMEs. This is support by the statement of DOSH Negeri Sembilan State Director, Hj Ahmad Kahar Abu Bakar which affirmed that most of industrial accidents in the state occur at SME manufacturing firms, followed by the SME plantation sector (“Tangani nahas di tempat kerja”, 2014). The accidents statistic revealed to the media during OSH Seminar for State Level OSH Week 2014 hosted by DOSH Negeri Sembilan in Port Dickson on 25 August 2014.

In summary, manufacturing sectors contributed the most number of industrial accident cases in Malaysia and most of those companies fall under SMEs. . Workers negligence seems to be the main factor for the accident to occur plus the lack of management commitment leads to the poor performance of OSH. Firm size and resources factors hinder the SME manufacturing companies to adhere well to the OSH rules, regulations and

standards compared to larger firms. Hence, study related to OSH among the SMEs manufacturing is significant . Furthermore, Prime Minister confirms that the new definition would increase the percentage from 97.3 % to 98.5 % of SMEs in the industry. This situation is seemed to be bringing more challenges to Malaysian OSH especially for SME sectors (“PM umum definisi baru PKS”, 2013).

2.4 The Measure of Safety Performance

A lot of previous researches explored on safety performance (as the dependent variables). Commonly, safety performance is always be measured by workplace accident rate and fatality statistics. However, Cooper and Philip (2004) opined that such measure is tend to be reactive. There should be more proactive measure of safety performance for example “safety compliance” and “safety participation”. This opinion matched 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). In addition, Ford and Tetrick (2011) stated that safety performance is multidimensions consists of behaviour contributing to person safety. Similarly, Burke, Sarpi, Tesluk & Smith-Crowe (2002) confirmed and developed the evidence that safety performance consists 4 dimensions of safety behaviours such as wearing personal protective equipment, workers engagement on reducing workplace safety and health risks, OSH communication and exercising the general OSH responsibilities of an employee. Previous scholars also specify the dimensions of safety compliance and safety participation behaviours in their studies and the dimensions include the using of personal protective equipment, the engagement of workers in low risks’ work practices , disseminating safety and health information as well as exercising the employer and

employee's responsibilities towards OSH (Crowe, Burke, & Landis ; 2003). Wu, Chen and Li (2008) measured safety performance by the compliance of the employers towards safety rules and requirements such as establishing safety organisations and responsibility system, providing of personal protective equipment, establishing safety training practice and evaluation system, as well as establishing accident investigations procedures. Huang, Smith, and Chen (2006) also agreed that safety performance should be measured by safety behaviours as they concluded that safety performance is employee safety control and self-reported workplace injury.

On the other hand, Neal & Griffin (2006) conducted a study focusing on safety behaviours and found that good safety behaviours among the employees could reduce workplace accidents. Likewise, Noorul Huda Zakaria et. al. (2012) also found in their study that workers compliance behaviour, specifically in terms of failure in wearing appropriate Personal Protective Equipment (PPE) as well as following the safe operating procedures (S.O.P) are the contributing factors towards workplace accidents. Similiarly, Monazzam and Soltanzadeh (2009) had identified significant relationship between workers' safety attitude and accident occurrence in their study among the oil and gas industries in southern Iran.

Based on above literatures, safety behaviour could be an element of safety performance besides number of accidents. Sometimes, safety behaviour also seemed as a mediating factor towards safety performance of an organisation.

2.5 Empirical Studies on Safety Behaviour

Safety behaviour can be stated as employees' feeling and intention towards performing work safely. It is also a behaviour of complying safe working procedure in order to hinder workplace accident and diseases. Several previous researches found the predictors towards creating safe working behaviour at the workplaces. Mohamed (2002) concluded that in setting positive safety behaviour at construction site, management commitment as well as the involvement of the management representative in OSH related activities is the prerequisites. The study explored on the factors contributing to safety climate towards safety behaviour, and the factors were namely management commitment, management communication, safety policies, rules and procedures, supportive environment, supervisor environment, workers' involvement, personal appreciation of risk, assessment of hazards, work pressure and competency.

Lu and Tsai (2008) found that six dimensions in safety climate of an organisation, namely management safety practices, supervisor safety practices, safety attitude among workers, safety training, and safety related to job and co-workers safety practices were the factors contributing to safety behaviour. This statement is supported by Chinda (2011) who confirmed that there are five major factors in determining safe work behaviour which are management commitment, safety information and communication, supportive environment, roles of co-workers and partners, and job -related safety. Vinod Kumar & Bhasi (2010) added that management safety practices positively influence employees' attitudes as well as behaviour towards safety. Whereas, Zohar (1980, 2000, 2002) found that how the employees perceived their job-related safety was the most influenced factor towards their safety

behaviour, followed by perceived management attitude towards safety. In addition, Hayes, Peranda and Trask (1998) proposed that employees will work safely when they perceive that their jobs are hazardous. Thus, job-related safety also are found to be one of the determinants for safety behaviour.

Recently, researchers have also identified leadership as one of contributing factors towards safety behaviour. Leadership behaviour among managers and supervisors , specifically on safety related matters, has been found to have significant effect of employees thinking, perception as well as behavioural changing towards OSH (Barling, et. al. ,2002 ; Kelloway, Mullen & Francis , 2006; Mullen & Kelloway, 2009)

2.6 Leadership

Generally, leadership defines the ability of influencing people or group towards achieving or attaining the set vision and goals. Leadership is also being defined as a process of interaction between leaders and followers where the leaders will influence his or her followers to achieve a common goal (Northouse, 2010; Yukl, 2006). On the other hand, Kelloway & Barling (2010) defined leadership as a process of social influence that is sanctioned by individuals in formal positions of power or leadership positions within an organisation, such as managers and supervisors.

2.7 Leadership and Behaviour

Several previous studies found significant relationship between leadership and employee's behaviour. Taran, Shuck, Gutierrez, and Baralt (2007) explored on the relationship between leadership style and employees behaviour in terms of engagement and found that transformational leadership could increase workers engagement behaviour. Monga, Coetzee and Cilliers (2011) conducted a study on 200 employees of a manufacturing firm in Congo, regarding perceived leadership style and employee participation. The results showed that leadership behaviour in terms of initiating and considering were positively and significantly related to employees' participation in terms of total participation, decision making and problem solving, as well as, conveying the ideas and suggestions for organisational improvements. Herold, Fedor, Caldwell and Liu (2008) performed a multilevel study on the effect of two leadership's dimensions towards employees' behaviour to change. The study hypothesised that "transformational leadership" and "change leadership" have positive relationship between individual commitment to change. Both hypotheses were accepted based on the statistical analysis result. Mester, Visser, Roodt & Kellerman (2003) explored on the relationship between leadership styles and employee behaviour of a world class engineering firm in South Africa. The independent variables were transformational and transactional leadership whilst the dependent variables was divided into four dimensions which are "organisational commitment", "job involvement", "job satisfaction", "organisational citizenship behaviour" and "work behaviour". After correlation analysis was performed, positive relationship found between both leadership dimension and organisational commitment behaviour but surprisingly, there was no relationship found between both leadership dimensions and job

involvement as well as job satisfaction. In addition, significant relationship was found between leadership and organisational citizenship behaviour.

Gilbreath and Karimi (2012) performed a study regarding leadership in terms of supervisor's behaviour and its relationship towards employee's presenteeism. The study hypothesised that positive and negative behaviour of supervisor would be associated with employee's job-stress related presenteeism. The results indicated that negative behaviour of the supervisor would have stronger association with employee's job-stress related presenteeism compared to positive supervisor behaviour. Another study was conducted at national mail delivery companies in five eastern Canadian cities to investigate the effects of leadership and avoidance leadership style towards employee's absenteeism, with job satisfaction as the mediator. The questionnaire had 120 respondents and the results showed that leadership is negatively related with illegitimate absenteeism while passive avoidant leadership positively determined illegitimate absenteeism; whereas, both were not mediated by job satisfaction (Frooman, Mendelson & Murphy, 2012)

In occupational safety and health field, previous researches also concluded leadership as one of the determinants of safety behaviour. Sulastre Mat Zin and Faridah Ismail (2011) presented in their conceptual studies that management commitment, organisational commitment, safety communication, safety leadership, safety training, safety motivation, safety management system, safety guidelines and regulations, safety and health officer and personal protective equipment as the predictors of behavioural safety compliance in construction sites.

2.8 Safety Leadership and Safety Behaviour

Lu and Yang (2010) conducted a study on leadership and safety behaviour (safety compliance and safety participation) in container terminal operations of Taiwan. In the study, safety leadership dimensions which are “safety motivation”, “safety concern” and “safety policy” are developed based on previous researches (Bass & Avolio, 1990; Cooper, 1998; O’dea & Flin, 2001; Yule, 2003). The results showed positive relationship between leadership with respect to safety motivation as well as safety concern towards safety compliance as well as safety participation. Furthermore, the study also found positive relationship between leadership with respect to safety policy towards safety participation but not towards safety compliance. In summary, the study had determined that transformational leadership is positively related to workers safety behaviour as it motivates and encourages in the followers to commit safety behaviour.

Mullen, Kelloway and Teed (2011) conducted a study examining the leadership styles (transformational, passive or inconsistency) as the predictor of safety performance (safety compliance and safety participation) among the young and older workers of healthcare industry in Canada. The results showed significant prediction between transformational leadership and inconsistent leadership towards both aspects of safety behaviours. Whilst, passive leadership is only associated with safety compliance but not safety participation.

A study was conducted by Sivanathan, Turner and Barling (2005) among swimming pool supervisors and their swimming instructors in Canada; which investigated whether transformational leadership in terms of motivation, consideration (concern) and

communication could become a mechanism in improving safety performance, specifically safety compliance and safety participation. The results showed that the subordinates who observed their supervisors transformational leadership behaviour demonstrates high level of safety compliance and safety participation.

Clarke (2013) conducted a study hypothesised that transformational and transactional leadership will have positive effect and will promote higher level of safety compliance as well as safety participation. The result indicated that transformational and transactional leadership had a positive relationship with both safety compliance and safety participation. In specific, transformational leadership style is more related to safety participation while transactional leadership style was the most effective towards safety compliance.

Another study from Clarke and Ward (2006) had examined the role of leader's influence strategies (pressure, upwards-appeal, exchange, coalition, ingratiation, rational persuasion, inspirational appeals, and consultation) on safety participation among the workers of UK-based glassware manufacturing companies. The results of this study showed that rational persuasion, inspirational appeals, and consultation tactics have influence to safety participation with the mediation of safety climate whilst pressure tactic was unrelated to safety participation. On the other hand, direct relationship was found between coalition tactics and safety participation.

In a nutshell, it can be said that safety leadership roles of the managers could foster safety behaviour among the employees and further more elevate OSH level of standard in Malaysia. Lees and Austin (2010) review the history, success and failure of "behavioural based safety" (BBS) in construction sites and concluded that it could be achieve after

undergoing three phase of evolution namely supervisor-driven application, employee-driven application and leadership-focused application.

2.9 Safety Leadership Dimensions and Safety Behaviour

As Lu and Yang (2010) explored on safety leadership dimensions namely “safety motivation”, “safety concern” and “safety policy” and their relationship towards safety compliance behaviour as well as safety participation. Other previous researchers also conducted studies in determining their contribution towards safety performance.

For “safety motivation”, Ford and Tetrick (2008) conducted a conceptual study to explore the factors related to motivation which contribute to safety performance. The study found that safety motivation is a part of safety leadership and contributes to safety behaviour. In addition, Dal Corso (2008) conducted a study investigating on the mediating role of safety motivation and safety climate in the “organisational climate - safety performance” relationship. One of the study’s outcomes is safety motivation had positively influenced safety participation ($\beta = 0.21$, $p < 0.05$) and safety compliance ($\beta = 0.33$, $p < 0.001$). Furthermore, Neal and Griffin (2006) conducted a longitudinal study in an Australian hospital consist more than 700 employees, investigating on lagged impact of safety climate, safety motivation, safety behaviour and workplace accident at individual as well as group level. One of the hypotheses was individual safety motivation will influence a lagged effect on safety participation and safety compliance. The result from statistical analysis indicated that individual safety motivation influenced a lagged effect only on safety participation but not safety compliance after two years of study. The level of safety participation increased in another two years due to the lagged motivation impact. On the other hand, Griffin and Hu

(2013) specified leadership behaviour in three dimensions which are “safety inspiring” (motivation) , “safety monitoring” (policy) and “safety learning” and investigated their effect towards safety performance. In this study, safety performance was measured by the employees’ safety compliance and safety participation. The survey conducted via online on 267 respondents of various occupational backgrounds in Australia and based on the results of the statistical analysis, safety inspiring (motivation) predicted safety participation but did not supported safety compliance.

For “safety concern”, empirical studies conducted are seemed to be limited. Inness, Turner, Barling and Stride (2010) conducted a study on employees’ safety performance (safety compliance and safety participation), where transformational leadership of their supervisors was proposed as the predictor. The study samples were the employees who hold two jobs simultaneously with different supervisor. Though the analysis focused on “general transformational leadership” measured by using Multifactor Leadership Questionnaire (MLQ) developed by Bass and Avolio (1995), the study also analysed statistically on the influence of safety concern towards safety compliance as well as safety behaviour. The result indicated that safety participation and safety compliance were predicted by the level of superiors’ safety concern for both jobs. In addition, Yang, Wang, Chang, Guo and Huang (2009) investigated the relationship between safety leadership, organisational safety culture and safety performance in healthcare industry of Taiwan. This study used consideration leadership (concern) as the independent variables and the correlation analysis found positive effect on organisational safety culture which was measured with three dimensions : safety organisation system, safety communication and organisational commitment. The study indirectly indicated that safety leadership in terms of consideration (concern) could influence organisational safety behaviour in terms of establishing safety organisation and

communication system as well as foster organisation commitment towards OSH. For other studies, Khdair , Faridahwati Mohd Shamsudin and Chandrakantan Subramaniam (2011) explored on the relationship between management practices as well as leadership behaviour and safety performance. The elements on management practices were namely safety training, rewards and incentives towards safety behaviour and management commitment towards organisational safety. The study concluded that such management commitment and safety concerns undertaken by an organisation could motivate the employees to perform their job safely. In addition, individual safety concern as well as employer safety concern towards the employees could help in improving safety performance in an organisation. Another study was conducted on 296 flight attendants of Taiwanese airlines by Chen & Chen (2013) which sparked the idea of benevolent leadership in associated with safety compliance and behaviour. Benevolent leadership, as described by Cheng, et.al. (2004), is one of three dimensions of paternalistic leadership style where the leader shows individual holistic concern for his/her subordinates. The leader will provide attentive care of their followers regarding work and personal lives and furthermore increases trust, loyalty and support among the followers. Among 10 hypotheses constructed in this study, Hypotheses 3 proposed that cabin crew's perceived airlines safety management system would positively influence their safety compliance and safety participation behaviour. The items used to measure safety management system reflected the employers safety concern attributes. The items are for example "the company continuously improve safety management system", "top management declares a determination to execute safety management system, even when the company is in a down cycle" , "top management participates in safety management system related activities and " top management declares commitment in formal documents". The

hypotheses was supported based on statistical analysis performed. On the other hand, Hypotheses 6 proposed the association of benevolent leadership and cabin crews compliance safety behaviour as well as proactive safety behaviour. Direct association was found between benevolent leadership and cabin crews proactive safety behaviour but no direct relationship towards safety compliance behaviour.

For “safety policy” Previous study approved that safety policy is the main driver to improve organisational safety performance (Hinze & Wilson , 1999; Sawacha et. al.,1999; Wong et.at , 1999). Jaseliks et.al. (1996) stated that safety policy with comprehensively written safety programs could foster better safety performance of individual as well as organisation. As we concluded that safety policy is an important element in OSH, empirical researches conducted specifically to investigate the relationship between safety policy and safety behaviour are found very limited. A part from Lu and Yang (2010) , Mohammad, Bashar, Khalied & Shaher (2010) conducted a survey study to collect OSH related information within Jordanian construction industry. The study indirectly revealed that lack of safety training, irregularly conducted safety meeting, avoiding to use safety peripherals among the workers and no organisational safety policy were the main factors contributing to safety performance. Kanten (2013) investigated relationship among safety climate, safety behaviour and workplace accidents. In this study several items used to measure safety climate which was “clear written procedures regarding safety” was similar to item used by Lu and Yang (2010) in measuring safety policy which was “my senior manager established a clear safety goals”. The study found positive and significant relationship between all dimensions of safety climate and safety behaviour. Dejoy, Schaffer, Wilson, Vandenberg and Butts (2004) investigated the factors determined safety climate and also the mediating roles of

it towards organisational safety performance. The study which was conducted among 2,208 employees of a large retail chain in the United States of America also hypothesised that safety-related policies and programs would be positively related to organisational safety climate. The statistical analysis results indicated that the hypotheses was supported ($\beta = 0.52$, $p < 0.001$). It could be said that safety behaviour is an element of safety climate where Seo, Torabi, Blair and Ellis (2004) concluded the five core constructs of safety climate which are management commitment to safety, supervisory safety support, coworker (safety) support, employee (safety) participation, and competence level. Gyekye (2006) conducted a research investigating the perceptions of workplace safety among the miners and factory workers. Specifically, this study aimed to compare the safety perceptions between mining industry's workers (gold, bauxite and manganese) and manufacturing workers (textiles, timber and sawmills, food and beverages) where 102 miners and 198 non-miners (total 320) Ghanaians were selected as the sample. Work Safety Scale (Hayes, et.al. , 1998) was used to assess employees' perception on work safety and the perception was divided into "job safety", "co-worker safety", "supervisor safety", "management safety" and "satisfaction with safety program". The study concluded that safety programs could also be seen as safety policies and the results showed that factory workers were more to comply with safety management policies compared to mining workers as they satisfied with the management safety programs and stressed that the efficiency and the effectiveness of their safety management policies were vital in reducing workplace accidents in the factory. Che Hassan, Basha and Wan Hanafi (2007) investigated the level of safety and health perception among building construction workers in Kuala Lumpur. The study tested several factors namely organisational commitment, factor influencing communication among workmates, worker

related factors, personal role and supervisors' role factors, obstacles to safety and safe behavior factors and management commitment which could influence risk taking behaviour. According to factor analysis performed, management effort on conducting safety training and safety meeting as well as providing adequate resources for safety influenced the workers to work safely. Secondly, supervisor safety attitude such as emphasising on complying safety policies and related rules could influence the workers to work safely as they perceived that supervisor put safety as important as production. Omer Sadullah and Kanten (2009) conducted a study investigating whether there were significant relationship between organisational safety climate and workers' safety behaviour at two large-sized shipyards in Turkey. The study used management policies related to safety and health as the dimensions of safety climate and the dimensions include "adequacy and sufficiency of procedures and investigations", "labour-management relation", "communication", "safety and PPE using training", "absence of work pressure", "control of work load increases", "training functionality", "general safety" and "maintenance and spare". After performing stepwise multiple regression analysis, the results indicated that management policy in terms of "safety and PPE using training" ($\beta = 0.466, p < 0.001$) was the most influenced factor for workers' safety behaviour. Jitwasinkul and Hadikusumo (2011) performed a qualitative study to identify organisational factors which contribute to safe work behaviour in construction sites. According to the review of related literatures as well as semi-structured interview conducted involving safety experts and workers in construction sites of Thailand, it was found that seven dimensions of company safety policy were seemed to be related to safety behaviour. The dimensions were namely safety communication, safety culture, management commitment towards safety, safety leadership, organisational learning towards safety, safety empowerment and safety reward system. Duff, Robertson, Phillips and Cooper (1993) previously conducted a longitudinal study at six construction sites in Northwest of

England regarding “goal-setting” and “feedback” relationship towards safety performance from the aspects of safety behaviour change. Workers from the activities namely scaffolding, working at height and housekeeping were selected as the sample of this research and they were imposed in safety interventions which were goal-setting, feedback charts and training. The statistical analysis results indicated that goal-setting had the strongest significant relationship towards safety performance from the aspects of safety behavioural change. Griffin and Hu (2013) investigated the significant effect of “safety inspiring” (motivation), “safety monitoring” (policy) and “safety learning” on towards safety performance which were measured by safety compliance and safety participation. The results indicated that safety monitoring determined safety compliance but did not predict safety participation whereas safety inspiring predicted safety participation but did not support safety compliance. This study reflected that the company policy in terms of safety monitoring influenced employees’ safety behaviour. Clissold (2005) explored the relationship between organisational factors in terms of the role of stress towards safety outcomes, specifically safety climate and safety performance in larger company. 1800 questionnaires were administered to a large company employing 3000 workers to determine role of stress as the predictor of safety climate and safety outcome, and also role of safety climate as the predictor of safety outcome. Safety climate was measured by “management safety commitment”, “safety communication”, “safety standard and goals”, “safety improvement”, “environmental risks”, “the effectiveness of safety policies and practices” and “safety knowledge and training”. On the other hand, safety performance was measured by “self-reporting behaviour” and “safety involvement”. The results indicated that safety climate in terms of “safety management”, “safety standard and goals” and “safety communication” was the important predictors for safety performance. Geller (1996) stated that, a part of administrative and engineering control, safety policy that demonstrate the

employer's commitment in establishing the safety procedures, safety communication system as well as conducting safety trainings and safety promotional activities could be the important factor in encouraging safety participation among workers. Didla, Mearns and Flin (2009) also confirmed that safety procedures and rules established by the management are important in determining safety compliance and safety performance.

2.10 Summary

Based on above mentioned literatures, above 90% of the manufacturing establishments in this country are SMEs, and the level of OSH in Malaysian SMEs is still far from the required standard with the main factors contributing to poor safety compliance are the limited of financial resource, knowledge and expertise, small number of human resource, simple organisation's structure and small organisation's size . In order to elevate the performance of OSH within SMEs, fostering safety behaviour (compliance and participation) among the workers by the owner-managers is seemed to be the best solution. Based on the previous researches which found that transformational and transactional leadership roles among the leaders could shape the safety behaviour of the employees. This is also in conjunction with Holt (2011) who stated that leadership skills by the senior management of SMEs are crucial to demonstrate workplace safety behaviour through their working attitude and convey positive message towards their workers. From the literatures above, it is also indicated that "safety motivation" , "safety concern" and "safety policy" were significantly related to safety behaviour. Therefore , this study will examine the influence of between perceived safety leadership of the owner-manager with respect to "safety motivation" , "safety concern" and "safety policy" towards safety behaviour among the SME workers.

CHAPTER 3: METHODOLOGY

3.0 Introduction

This chapter explains the methodological aspects used in present research. The research design, population and sampling design are described. This chapter also describes the instrument used in this research including the process to test the validity and reliability of the data. The major parts of this chapter are research framework, conceptual definitions, data collecting technique, pilot test and data analysis.

3.1 Research Framework

Research framework is a collection of interrelated concepts and shows the relations between the independent variables and the dependent variable. Dependent variable, also known as outcome variable can be predicted and explained. Independent variables, also known as predictors or explanatory variables, explain variation in the dependent variable. Presence study framework is basically replicated from Lu and Yang (2010) who conducted a study on safety leadership and safety behaviour in container terminal operations. Lu and Yang (2010), established safety motivation, safety concern and safety policy as the dimensions of safety leadership. Thus, the independent variables for this study are safety motivation, safety concern and safety policy which . The dependent variable is “safety behaviour” which is measured by two elements that are safety compliance and safety

participation. This framework has served as a basis for conducting present research. Below is the proposed framework to show the relationship of the variables.

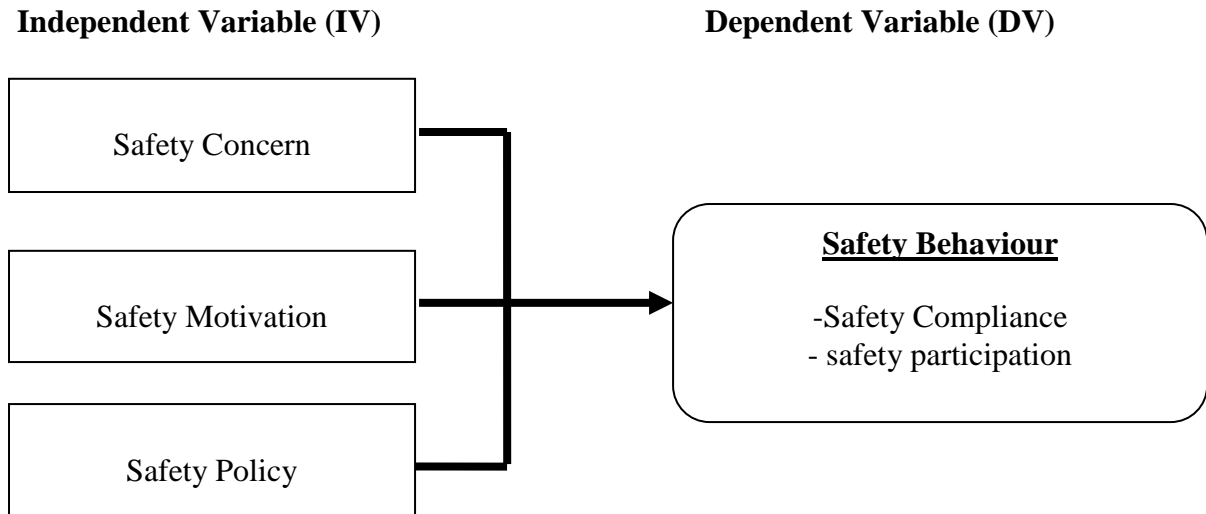


Diagram 3.1
Research Framework

3.2 Conceptual Definitions

Safety Concern

Lu and Yang (2010) explained “safety concern” as an aspect of transformational leadership where a senior manager influence workers safety behaviour by portraying a good safety behaviour example. The examples are such as stressing the importance of wearing safety equipment , always give priorities towards safety improvement programs, emphasises on safety policies, rules as well as regulations, and always cooperate with other relevant parties in handling OSH issues at workplace.

Safety Motivation

Lu and Yang (2010) had related “safety motivation” to the situation where a senior manager construct a motivation system such as incentives scheme to be given to the workers for their good safety behaviour . The incentives could be in term of monetary as well as non-monetary such as praising the workers safety attitude. In addition, encouraging workers to report unsafe acts and unsafe conditions at workplace also increasing their participation in safety decision making also explains the “safety motivation”. Safety concern is an element of transformational leadership.

Safety Policy

Lu and Yang (2010) referred “safety policy ” to a clearly stated and explained safety vision, mission and goals set by a senior manager, including workplace rules and regulations regarding OSH to ensure safety compliance and participation among the workers. “Safety Policy” could be referred as an aspect of transactional leadership.

3.3 Hypotheses Development

Previously, present research framework has identified the variables in the intended study. Based on the relationships exist between the variables, the hypotheses of the study could be developed and furthermore enables the process of the relationships testing. Alternate hypotheses have been developed in the study to express the relationship between leadership and safety behaviour.

H1 : safety leadership with respect to safety motivation will be significantly related to safety compliance among the SME workers

H2 : safety leadership with respect to safety motivation will be significantly related to safety participation among the SME workers

H3: safety leadership with respect to safety policy will be significantly related to safety compliance among the SME workers

H4: safety leadership with respect to safety policy will be significantly related to safety participation among the SME workers

H5 : safety leadership with respect to safety concern will be significantly related to safety compliance among the SME workers

H6 : safety leadership with respect to safety concern will be significantly related to safety participation among the SME workers

3.4 Research Approach And Design

This research is a descriptive study using quantitative approach. Sekaran, (2003) defined descriptive study as a research study describing the variables in a situation of interest to the researcher. Burns & Grove (1993) described quantitative research as a formal systematic process of research which tests the relationship among variables. Present study purpose is to investigate the relationship between leadership and safety behaviour at workplaces , specifically the SME manufacturing sector in Negeri Sembilan. For research setting, the study was conducted at SME manufacturing companies in Negeri Sembilan which registered with DOSH Negeri Sembilan according to the provision of section 34 , Factories and Machinery Act 1967.

3.5 Data Collecting Technique

In this research, data are obtained from both sources, primary and secondary. Primary sources refer to the original information obtained directly by the researcher for the specific purpose of the study (Cooper & Schindler, 2011). On the other hand, the researcher also used secondary data which were gathered from the internet (official website of relevant authority bodies), books, published articles, brochures, booklet and internal database of DOSH Headquarter and Negeri Sembilan state office which were found as the most recent, reliable and appropriate for this research. This section describes the research instrument used in this study, pilot study report and data collecting procedure.

3.5.1 Research Instrument

This study employed a self-administered questionnaire as the data collecting instrument which was adopted from Lu and Yang (2010). The questionnaire comprises 3 sections, Section A (Personal Information), Section B (Employer Safety Leadership Attributes) and Section C (Employee Self-Reported Safety Behaviour Attributes). The items in the questionnaire were used to measure the the dependent variable, “Safety Behaviour” and the independent variable, “Safety Leadership”. The former was assessed by means of three dimensions which are “Safety Motivation”, “Safety Concern” and “Safety Policy”. These elements are adapted from Lu and Yang (2010) who had adapted the items from previous researches. Meanwhile, the latter was assessed by means of two dimensions, “Safety Compliance” and “Safety Participation” adapted from Campbell et al. (1993), Borman and Motowidlo (1993), Neal et al. (2000) and Neal and Griffin (2002, 2006).

Table 3.1, shows items used for measuring the independent variables.

Table 3.1
Items of the independent Variables

Independent Variables	Items	Source
Safety Motivation	<p><i>“My employer encourages workers to provide safety suggestions”, “My employer encourages workers’ participation in safety decision-making”, “My employer encourages workers to report potential incidents without punishment”, “My employer trusts the workers”, “My employer praises workers’ safety behavior “, “My employer rewards those who set an example in safety behaviour” and “My employer has set up a safety incentive system”.</i></p>	Lu and Yang (2010)
Safety Concern	<p><i>“My employer expresses an interest in acting on safety policies”, “My employer are concerned about safety improvement”, “My employer coordinates with other departments to solve safety issues”, “My employer stresses the importance of wearing personal protective equipment” and “My employer shows consideration for workers”.</i></p>	Lu and Yang (2010)
Safety Policy	<p><i>“My employer has established a safety responsibility system”, “My employer establishes clear safety goals”, “My employer explains the safety mission clearly” and “My employer emphasizes work-site safety”.</i></p>	Lu and Yang (2010)

Table 3.2, shows items used for measuring the dependent variable

Table 3.2
Items of the dependent Variables

Independent Variables	Items	Source
Safety Compliance For the questions, the responses are measured using a 5 point likert scale with the following: 1 = “str	<i>“I maintain safety awareness at work”, “I comply with safety rules and standard operational procedures”, “I do not neglect safety, even when in a rush” and “I wear personal protective equipment at work”.</i>	Campbell et.al. (1993), Borman and Motowildo (1993), Neal, et. al. (2000) and Neal and Griffin (2002,2006)
safety participation	<i>“I participate in setting safety goals” and “I actively participate in safety meetings”.</i>	Campbell et.al. (1993), Borman and Motowildo (1993), Neal, et. al. (2000) and Neal and Griffin (2002,2006)

3.5.2 Pilot Study

Driscoll (2011) stated that a ‘pilot test’ is conducted on a survey questionnaire to determine the understandable of the questions as well as to obtain the appropriate length of the designed questionnaire. In this research, the instrument was pilot tested for reliability. The adopted questionnaire was in English. The author found that it needs to be in a bilingual form to facilitate the respondents who are not well-verse in English. Then, the instrument was translated into Malay Language by the author who own “Certificate of Basic

Translation” issued by Institute of Translation Malaysia Berhad (ITNMB). Subsequently, the translated questionnaire was been translated back into English by two qualified - overseas trained English Language teachers in Negeri Sembilan. Then, the back-translated questionnaire was compared with the original questionnaire to ensure the quality of the translation process. This “back translation” step was pioneered by Brislin (1970) and is widely used as an assessment to translated surveys’ questions. The final review process had resulted minor modification in the Malay Language translation and the final instrument was finalised.

Subsequently, the instruments was pre-tested with 25 non-management workers of a health supplement SME manufacturing company in Nilai, Negeri Sembilan on 18 July, 2014 and 25 production workers of an automotive parts SME manufacturing company in Seremban, Negeri Sembilan, on 22 July 2014 .The purpose of the pre-test were :

- i. to determine whether the questionnaire was reliable, clear and convey the same meaning to all respondents;
- ii. to determine whether the questionnaire items were properly designed and in the right sequence;
- iii. to determine the length and time needed to complete the questionnaire; and
- iv. to determine whether the language used was appropriate and acceptable by the respondents.

Cronbach’s alpha reliability coefficients were obtained to check for internal consistency of the dependent and independent variables. The details are reflected in Table 3.3

Table 3.3
Reliability Coefficients of Questionnaire Items

Variables	Number of Items	(r)
Safety Concern	5	0.876
Safety Motivation	7	0.828
Safety Policy	4	0.835
Safety Compliance	4	0.835
safety participation	2	0.635

3.5.3 Population and Sampling Design

Jabatan Keselamatan dan Kesihatan Pekerjaan Negeri Sembilan (2014) reported that there are 48,965 people who work in SME manufacturing throughout Negeri Sembilan in 2013. Out of this population, 380 sample sizes were chosen for this research based on Krejcie and Morgan (1970) . Based on the research objectives, Simple Random Sampling was chosen as the sampling method. The questionnaire was administered to 40 out of 907 SME manufacturing companies throughout Negeri Sembilan (Jabatan Keselamatan dan Kesihatan Pekerjaan Negeri Sembilan ,2014). From the selected 40 SME manufacturing companies, 10 workers of each company has been selected to response the survey questions. The selection of sample was performed using random table based on MacNealy (1999).

3.5.4 Data Collecting Procedure

The conduct of this study involved four steps. First, before administering questionnaires to the respondents, the researcher had briefed their respective owner-managers on the main purpose of the study in order to obtain the permission to conduct the research besides to earn their full cooperation. Second, the dates for the administration of the questionnaires were fixed. Third, briefing session regarding completing the questionnaires were conducted to the owner-managers at their respective workplaces on the agree upon dates and subsequently the questionnaires were distributed to them. Fourth, the owner-managers then randomly choose the respondents among their respective workers and instructed them to complete the questionnaires as soon as possible. The bilingual questionnaires then were sent via hand to the managers of the SME manufacturing companies in Negeri Sembilan and then being randomly distributed to their workers to respond them. The number of questionnaires distributed has been recorded. The researcher did follow up to call the contact person. Lastly , the author made a personal visit to the organisations to collect completed questionnaires were after 3 weeks of administration. 400 questionnaires were distributed and only 210 were been collected back (52.5%).

3.6 Techniques of Data Analysis

This section describes the statistical tools used for data analysis, including the purpose for each statistical tool used. The use of Statistical Program for Social Sciences (SPSS) version 20.0 in analysing the data helps the researcher to organize and interpret the data. SPSS software also helps to determine the appropriate statistical technique to be used to test the hypothesis. For data analysis, both descriptive and inferential statistics were applied.

The data that has been obtained were analysed using descriptive analysis (frequencies, min, max, mean and standard deviation), reliability analysis, correlation coefficient and multiple regression analysis.

In reliability analysis, the figure will be measured using Cronbach's Alpha. It determines how well the measured items are positively related to one another. Nunnally (1997), stated that Cronbach's Alpha of 0.7 or greater is acceptable in social sciences research. Reliability of a measure is established by using both consistency and stability test. The closer Cronbach's Alpha to 1.0, the higher the internal consistency reliability is. Cronbach's Alpha measures are as Table 3.4 :

Table 3.4
Cronbach's Alpha Measures

Cronbach's Alpha	Reliability
0.8 and above	good
0.7	acceptable
0.6 and below	poor

Populations and the properties of populations are called descriptive statistics, just like parameters which refers to mean or standard deviation, where both of them represent the whole population. In this research, descriptive analysis is performed to determine the measures of central tendency (mean and median) and measures of dispersion (variance, standard deviation, etc.).

A correlation analysis is a method using several techniques to measure the relationship between two variables (Lind, Marchal & Wathen , 2010). For this research,

Pearson Correlation Coefficient will be used to indicate the direction, strength and significance of the bivariate relationships of all variables in the study. Beyond knowing the means and standard deviations of the dependent and independent variables, Pearson Correlation, r can determine how strong the variables are related to one and another. When p value is below than 0.05 ($p < 0.05$), significant correlation exist between Independent Variables (IV) and Dependent Variables (DV). Whereas, the decision rules of Kerlinger determined that the strength of the relationship could be expressed as substantial to very strong, moderate to substantial and moderate to low (Kerlinger & Pedhazur, 1973). Table 3.5 shows the measurements of the relationship used in Pearson Correlation.

Table 3.5
The strength of relationships between the dependent and independent variables

r value	Relationships
0.7 and above	strong
0.4 to 0.69	moderate
0.39 and below	weak

While correlation coefficient was used to indicate the magnitude of the bivariate relationship, Multiple Regression Analysis was subsequently used to better describe as well as to test the significance relationship between a single dependent variable and more than one independent variable. In this research, it explains on how much the variance in owner-managers' safety leadership behavior in term of safety motivation, safety concern and safety policy can be explained by the two dimensions of safety behaviour which are safety compliance and safety participation. In present research, multiple regression analysis was conducted separately between the independent variables and safety compliance, as well as between the independent variables and safety behaviour. Variance could be explained from r

squared (R^2) value and the beta (β) coefficient values would verify the contributors ranking.

The criteria are summarized as per Table 3.6 below :

Table 3.6
Multiple Regression Analysis Criteria

P value	Results
<0.05 or 0.001	significant
>0.05 or 0.001	Not significant

3.7 Summary

The process of data collection and analysis of data is important to determine whether a hypotheses in a research is supported or rejected. Based on the statistical analysis as well, the relationship between independent variables and dependent variable of current research will be revealed. Furthermore, the data analysis result should express whether the conducted research has met its objectives or otherwise.

CHAPTER 4

FINDINGS

4.0 Introduction

This chapter will discuss the research findings from the survey performed to evaluate the existence of relationship between the leadership components which are safety motivation, safety concern and safety policy and the dependent variables (safety compliance and safety participation). Data is processed using SPSS version 20.0. Frequency analysis has been computed to identify respondents' demographic information such as gender, age, marital status, race, length of service and education level. This chapter also reports reliability analysis (goodness of measure), descriptive analysis, correlation coefficient analysis, multiple regression analysis and beta values. Multiple regression analysis is used to verify the hypotheses listed in previous chapter.

4.1 Rate of Response

A total of 400 questionnaires issued to the respondents who are the SME manufacturing workers in Negeri Sembilan. Only 210 of them were returned and 290 were not returned. The returned 210 of questionnaires was answered completely by the respondents. Thus, the response rate was 52.5%. Table 4.1 summarised the response rate of the survey.

Table 4.1
Rate of Response

Items	Total	Percentage (%)
Distributed Questionnaires	400	100
Collected Questionnaires	210	52.5
Unreturned Questionnaires	290	47.5
Completed Questionnaires	210	52.5

4.2 Respondents' Demographic Background

Table 4.2 shows that male respondents were 59% and the percentage of female respondents was 41%, married respondents were 67.1% whereas 31.4 % are single and divorced/widowed are 3%. For education background, employees with MCE/SPM/SPMV constitutes the highest percentage of respondents with 45.7% followed by diploma (14.3%), LCE/SRP/PMR (11.0%), HSC/STPM (10.5%), first degree (8.6%), others (5.2%) and primary education (4.8%). Malay respondents are 62.9% , followed by Indian (18.1%),Chinese (15.7%) and other races (3.3%). The majority of the respondents are between the age of 30-39 (41.4%), followed by the age of 20-29 (33.8%), 40-49 (13.8%) and 50 and above (11.0%). Lastly, the majority of the respondents have been working for 1-5 years (61.4%), followed by the 6-10 years (16.2%), 11-15 years (12.9%), 16-20 years (6.2%), and more than 21 years (3.3%).

Table 4.2
Demographic Background of the Respondents

Variables		Frequency	Percent
Gender	Male	124	59
	Female	46	41
Age	20-29 years	71	33.8
	30-39 years	87	41.4
	40-49 years	29	13.8
	50 years and above	23	11.0
Marital Status	Married	124	67.1
	Single	86	31.4
	Divorced/Widowed	3	1.4
Race	Malay	132	62.9
	Chinese	33	15.7
	Indian	38	18.1
	Others	7	3.3
Length of Service	1-5 years	129	61.4
	6-10 years	34	16.2
	11-15 years	27	12.9
	16-20 years	13	6.2
	21 years & above	7	3.3
Education Level	Primary Education	10	4.8
	LCE/SRP/PMR	23	11.0
	MCE/SPM/SPMV	96	45.7
	HSC/STPM	22	10.5
	Diploma	30	14.3
	First Degree	18	8.6
	Others	11	5.2

4.3 Reliability Analysis

In order to determine whether the questionnaire were reliable and admissible, reliability test was conducted. The degree of internal consistency between multivariate could be determine based on Cronbach's Alpha (Hair, Babin & Anderson ,2010). Table 4.3 shows the result of reliability test in this study.

Table 4.3
Reliability of Test Result

Variable	No. of Items	Cronbach's Alpha
Safety Concern	5	0.828
Safety Motivation	7	0.822
Safety Policy	4	0.873
Safety Compliance	4	0.858
safety participation	2	0.784

From the Table 4.3 above, all the three dimensions of leadership (safety concern, safety motivation and safety policy) as independent variables and dependent variable's dimensions (safety compliance and safety participation) having the Cronbach's alpha coefficient of higher than 0.6; make all the items in the study are reliable. This is supported by Nunnally (1978), Cronbach's alpha coefficient of the scale should be above 0.6 in the internal consistency scales in order to measure the same underlying construct. According to Mohammad Najib (1999), the maximum value for Cronbach's alpha is 1 and if the coefficient of the scale is below then 0.6, the survey's items are not reliable and modification is necessary.

In details, Cronbach's alpha on Safety Compliance is 0.858 and and safety participation is 0.784 . It could be concluded that the items measuring the dependent variable, asked in Section C of the questionnaire, are reliable. Above result also concluded that the items given to measure the independent variables are also reliable. Safety Policy are the most reliable with Cronbach's alpha 0.873 (very strong); followed by Safety Concern (0.828) and Safety Motivation (0.822).

In summary, the reliability test indicated that all the items measuring both dimensions of independent variable as well as all the dependent variables are strongly reliable.

4.4 Descriptive Analysis of Variables

Descriptive statistics allows the researchers to describe the the main features of the collected data. Common measures used to quantitatively describe a set of interval and ratio scaled data are central tendency (mean) and dispersion (standard deviation). Standard deviation measures the amount of variant or dispersion from the mean values (Sekaran & Bougie, 2013).

In this study, the items used for the dependent variable and the independent variables are measured by Likert scale 1 to 5 (1 : “strongly disagree”, 2: “disagree”, 3: “neither disagree nor agree”, 4: “agree” and 5 : “strongly agree”). Based on Davies (1971), the level of the variable is considered high when the mean score is 3.68 – 5.00, whereas the score for moderate level is 2.34 – 3.67 and low level (1.00 – 2.33). Table 4.3 shows descriptive analysis of variables. The mean value for safety concern was 3.9733 and standard deviation was 0.62335 with the minimum value is 1.6 and maximum value is 5. The mean value for safety motivation was 3.6748 and standard deviation was 0.66640 with the minimum value was 1.71 and the maximum value was 5. Meanwhile, the mean value for safety policy was 4.0071 and standard deviation was 0. 66253 with the minimum value was 1.5 and the maximum value was 5. The mean value for safety compliance was 4.0619 and standard deviation was 0.59632 with the minimum value was 1.5 and the maximum value was 5. Finally, the mean value for safety participation was 3.7643 and standard deviation was 0.82885 with the minimum value was 1 and the maximum value was 5.

In summary, the mean score for all variables are more than 3 and this indicates that the respondents are agree with most of the items describing safety compliance, safety participation safety policy, safety motivation and safety concern. In addition, the standard deviations for all the variables are below than 1 where it shows low dispersion as well as high consistency. The highest mean with the lowest standard deviation among the variables is safety compliance. The high level variables (Davis, 1971) are namely safety policy, safety compliance, safety participation and safety concern.

Table 4.4
Descriptive Statistics

	N	Minimum	Maximum	Mean	Std Deviation
Concern	210	1.60	5.00	3.9733	0.62335
Motivation	210	1.71	5.00	3.6748	0.66640
Policy	210	1.50	5.00	4.0071	0.66253
Compliance	210	1.50	5.00	4.0619	0.59632
Participation	210	1.00	5.00	3.7643	0.82885

4.5 Correlation Analysis

Table 4.5 shows that all of the independent variables (safety concern, safety motivation and safety policy) are positively correlated at 0.01 with the dependent variable (safety compliance and safety participation). The highest correlation is between safety concern and safety policy ($r=0.882$, $p<0.01$) and lowest correlation is between safety policy and safety participation ($r=0.477$, $p<0.01$). From the table, the highest correlation between independent variables and safety compliance was indicated at safety policy ($r=0.643$) followed by safety concern ($r=0.636$) and safety motivation ($r=0.513$). Whereas, the highest correlation between independent variables and safety participation was indicated at safety

concern ($r=0.546$) followed by safety motivation ($r=0.528$) and safety policy ($r=0.477$). Generally, the result found that all variables have the positive correlation.

Table 4.5
Correlation Analysis

	Concern	Motivation	Policy	Compliance	Participation
Concern	1	0.787**	0.882**	0.636**	0.546**
Motivation		1	0.707**	0.513**	0.528**
Policy			1	0.643**	0.477**

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

4.6 Multiple Regression Analysis

Regression is the appropriate technique for testing relationship between predictor and criterion variable. Regression allows the researcher to analyze how well the independent variables will predict the value of the dependent variable. According to Bougie and Sekaran (2013), multiple regression analysis is used to identify the significance of the predictors with the dependent variable .

4.6.1 Independent Variables and Safety Compliance

Based on Table 4.6 the independent variables have significant prediction on the safety compliance ($R=0.660$). Then, the result ($R^2=0.435$) indicated that all variables accounted for 43.5% of the variance in safety compliance while the rest of 56.5% is explained by other variables.

Table 4.6
Model Summary A

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.660 ^a	.435	.427	.45134

a. Predictors: (Constant), Policy, Motivation, Concern

Furthermore in Table 4.7, the result of beta β value indicated that two variables (safety concern and safety policy) are found positively related to safety compliance. On the other hand, safety motivation has no influence towards safety compliance. Among the independent variables, safety policy ($\beta=0.366$, $t=3.300$, $p=0.001$) was found to have the greatest influence on safety compliance followed by safety concern ($\beta=0.298$, $t=2.346$, $p=0.020$). However, no influence was found by safety motivation ($\beta=0.019$, $t=0.228$, $p=0.819$) towards Safety Compliance. Thus, the analysis supported Hypotheses 1 and Hypotheses 3 whereas did not support Hypotheses 2.

Table 4.7
Beta Coefficients A

Model		Unstandardized		Standardized	t	Sig.
		Coefficients		Coefficients		
		B	Std. Error	Beta		
1	Concern	.285	.122	.298	2.346	.020
	Motivation	.017	.076	.019	.228	.819
	Policy	.330	.100	.366	3.300	.001

a. Dependent Variable: Safety Compliance

4.6.2 Independent Variables and Safety Participation

Based on Table 4.8 the independent variables have significant prediction on the safety participation ($R=0.569$). Then, the result ($R^2=0.324$) indicated that all variables accounted for 32.4% of the variance in safety participation while the rest of 67.6 % is explained by other variables.

Table 4.8
Model Summary B

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.569 ^a	.324	.314	.68653

b. Predictors: (Constant), Policy, Motivation, Concern

Furthermore in Table 4.9, the result of beta β value indicated that two variables (safety concern and safety motivation) which had lead to the increasing of safety participation. Whilst, safety concern ($\beta=0.376$, $t=2.701$, $p=0.007$) was found to have the greatest influence on safety compliance followed by safety motivation ($\beta=0.258$, $t=2.780$, $p=0.006$). On other hand, the result found that safety policy has no influence 0 ($\beta=-0.037$, $t=-0.304$, $p=0.761$) on safety participation. Thus, Hypotheses 4 and Hypotheses 5 were supported while Hypotheses 6 was rejected.

Table 4.9
Beta Coefficients B

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	Concern	.500	.185	.376	2.701	.007
	Motivation	.321	.116	.258	2.780	.006
	Policy	-.046	.152	-.037	-.304	.761

b. Dependent Variable: safety participation

4.7 Summary

Based on the statistical analysis result, it can be concluded all the independent variables are positively related to the dependent variable. The correlation analysis produced that the highest correlation between the independent variables and safety compliance is safety policy, followed by safety concern and safety motivation. Whereas, the highest correlation between the independent variables and safety participation is safety concern, followed by safety motivation and safety policy. Multiple regression analysis tested the significance of the independent variables as the determinants of the dependent variable. The analysis resulted that safety compliance is positively influenced by safety concern and safety policy, whilst safety motivation indicated no influence. Among the independent variables, safety policy ($\beta=0.366$, $t=3.300$, $p=0.001$) was found to have the greatest influence on safety compliance. On the other hand, safety concern and safety motivation influenced positively on safety participation with safety concern ($\beta=0.376$, $t=2.701$, $p=0.007$) was found to have the greatest influence. Meanwhile, safety participation was not influenced by safety policy. It can be concluded that safety concern is an important variable in understanding safety behaviour as it has been consistently explaining the variance in both dimensions of safety behaviour. The obtained results will be further discussed and concluded in next chapter.

CHAPTER 5

DISCUSSION AND RECOMMENDATION

5.1 Introduction

The main aim of this chapter is to conclude the whole research process and findings as what it compliments to what have been presented in the previous chapters. This chapter also offers the recommendations and suggestions for future research. This chapter concentrates on concluding the influence of employer's safety leadership towards employees' safety behaviour among SME workers in the manufacturing sector .

This study attempts to investigate what are the perception of employees toward their employers' leadership attributes in implementing occupational safety and health in their companies. Researcher used three safety leadership dimensions which are safety motivation, safety concern and safety policy as the independent variables, whereas two measures of safety behaviour, namely safety compliance and safety participation as the dependent variable. The objective of the research is to determine whether there are significant relationship between safety leadership in terms of safety motivation, safety concern and safety policy , and safety behaviour.

5.2 Discussion

This paper examined the SME's employees' perception toward their employers' safety leadership attributes and also investigated the employee's safety behaviour. 210 respondents from SMEs in Negeri Sembilan had answered the 22 items in the questionnaire. Mean for all questions are above 3, which indicated that all the respondents agreed with the items asked in the questionnaire. For the independent variables, mean of safety policy is the highest (4.0071), followed by safety concern (3.97330) and safety motivation (3.6748). This result shows that the employees of the SME manufacturing companies in Negeri Sembilan agreed on their employers' safety leadership attributes in terms of safety policy. For dependent variables, mean for safety compliance (4.0619) is higher than safety participation (3.7643).

5.2.1 The Level of Safety Behaviour among SME Employees

Based on Davies (1971) convention, the level of the variable is considered high when the mean score is 3.68 – 5.00 for 1-5 Likert scale questionnaire. The standard deviation for safety compliance (0.59632) is smaller than safety participation (0.82885). This result portrays that employees of the SME manufacturing firms in Negeri Sembilan believe that their safety compliance behaviour as well as safety participation behaviour is at the high level or standard.

The high level of safety compliance as well as safety participation is due to intensive enforcement as well as promotional activities towards SME manufacturing firms which are carried out by DOSH Negeri Sembilan in the recent years. SME manufacturing companies are considered as factory, thus they are fully affected by Factories and Machinery Act 1967.

The act provides the DOSH inspectors to perform annual statutory inspections for factory and machinery, plus other related kind of audits and inspections in order in order to ensure the safety and health at all manufacturing companies including the SMEs. Thus, every SME manufacturing firms would have been inspected for at least once in 15 months by the Factory and Machinery Inspector of DOSH Negeri Sembilan. A part of enforcement activities, DOSH Negeri Sembilan is actively implementing “compliance support” activities towards SMEs as per formulated in OSH MP 15. “Compliance Support” is OSH programs and interventions which provides free consultation on complying to rules and regulations related to OSH directly from DOSH towards SMEs and also public sectors (Occupational Safety & Health Master Plan 2009-2015, 2009) . Furthermore, The Participatory Action-Oriented Training program such as Workplace Improvement in Small Enterprises (WISE) has been conducted actively in Negeri Sembilan to provide necessary trainings and consultations for SMEs to elevate their OSH performance . In addition, DOSH Negeri Sembilan also has been conducting a special program named Occupational Safety and Health Clinic (OSHAC) for nearly 5 years , supplementing free training to ensure the workers and management of the SMEs understand the rules and regulations regarding OSH, as well as to establish OSH policy, hazard identification, risk assessment and risk control (HIRARC) and lastly to construct their own safe operating procedures.

It a nutshell, intensive promotional activities as well as regular enforcement performed by the respective DOSH state office has resulted high level of safety compliance as well as safety participation among SME workers. This matched with previous studies which found that external support received by the authority body (Lingard & Rowlinson , 2005) and participatory action oriented program (Nishikido et.al. , 2007; Itani et.al. , 2006; Kogi, 2010) are essential and applicable in ascertaining safety behaviour among the SMEs.

5.2.2 The Relationship between Safety Leadership and Safety Behaviour

This subsection will discuss on the relationship between perceived employer's safety leadership , with respect to safety motivation, safety concern and safety policy; and the employee's safety behaviour . First, the significant relationship between the predictors and criterion variable will be discussed based on multiple regression analysis results. Secondly, the most influence independent variable will be discussed.

Safety Motivation

Based on regression analysis, safety motivation and safety participation showed significant relationship ($\beta=0.258$, $t=2.780$, $p=0.006$). This indicated that safety motivation behaviour of the SME's owner-managers influences the safety participation among their workers. On the other hand, there is no significant relationship between safety motivation and safety compliance ($\beta=0.019$, $t=0.228$, $p=0.819$). This result, confirmed that safety motivation attributes among the owner-managers of the SMEs manufacturing did not influence safety compliance behaviour of their workers . Though previous researches found safety motivation influence safety compliance (Lu & Yang, 2010; Dal Corso ,2008) , but this research resulted an insignificant relationship. Griffin and Neal (2000) describes safety compliance as the core activities including adhering to the safe work procedure, applying personal protective equipment which need to be carried out personally in order to maintain workplace safety. Griffin and Neal also stated that safety participation is more towards voluntary aspect that does not directly contribute to individual safety. Therefore, the author proposes that safety compliance, in the SMEs context, is influenced by the owner-managers

sense of “authority” and “enforcement” behaviour compared to safety participation. This can be seen in this research where safety leadership in terms of safety policy was found to have the greatest influence on safety compliance compared to other variables.

In addition, though the mean value for safety motivation is strong, the author predicts that the safety motivation attributes among the owner-managers of the SMEs manufacturing in Negeri Sembilan are more towards intrinsic values compared to extrinsic (monetary rewards/incentives). This is due to the SME’s characteristic that is lack of financial muscle which has been discussed in the earlier chapter. Pedersen and Kines (2011) concluded in their study that intrinsic motivation (social motivation) had more effects on large company’s workers compared to small company. In addition, Awolusi and Onikoyi (2014) concluded that fringe, salary and monetary incentives are the most successful motivating factors towards employee’s commitment. Thus, the author proposes that specific incentives framework could shape and motivate SME’s workers safety compliance behaviour. In contrast, the non-monetary benefits are seemed could only motivate SME’s employees towards safety participation. In addition, it is believed that the perceived owner-manager’s safety motivation could influence employees safety compliance behaviour if it works parallelly with organisational safety policy. Safety policy is the primary element towards safety compliance but not safety motivation for the SMEs manufacturing in Negeri Sembilan.

Overall, the results for safety motivation towards safety behaviour in this research are consistent with the analysis done by Neal & Griffin (2006) as well as Griffin and Hu (2013), which is safety motivation only influences safety participation but not safety compliance.

Safety Policy

The multiple regression analysis also shows that perception of safety leadership with respect to safety policy influences the level of safety compliance among the workers ($\beta=0.366$, $t=3.300$, $p=0.001$). This result matched with Kantan (2013) who concluded that those factory workers were more to comply with workplace safety rules and procedures when they were satisfied with the management safety programs which is part of company's safety policy.

However, the regression analysis result shows that safety policy did not influence safety participation ($\beta=-0.037$, $t=-0.304$, $p=0.761$). The author predict that the owner-managers of SME manufacturing in Negeri Sembilan focus on emphasising the safety policy as most of them have less than 40 workers. According to Section 30 of OSHA 1994, only workplaces with the total employees which exceeding 40 are compulsory to establish Safety and Health Committee (Ummu Kolsome Farouk, Stanley Richardson & Arul Jeganathan Solucis Santhapparaj, 2011) . In a workplace , safety committee is the best mean for safety participation among the employees (Ismail Bahari , 2006).

As also discussed in previous chapter, SMEs own simple organisational structure with the owner-managers have direct contact with their employees. Thus, the owner-managers seemed to construct the organisational safety policy by themselves and impose directly such safety policy, rules and procedures towards their workers without involving them with safety decisions. Lack of financial strength might force the owner-managers to make safety policy decisions without empowering or soliciting their workers. Vredenburg (2002) proposed that no participation is where the superior makes all decisions, and full

participation, where everyone who affected or connected with the decisions are involved in the decision making process.

Lastly, this result portrays that perceived safety leadership with respect to safety policy is more to influence the employee's safety compliance in the SMEs manufacturing organisations. The owner-managers focus on emphasising the compliance with safety rules and regulations. This will lead to the no influence of safety policy towards safety participation.

Safety Concern

According to the regression analysis result, safety concern was significantly influenced the safety compliance ($\beta=0.298$, $t=2.346$, $p=0.020$) as well as safety participation ($\beta=0.376$, $t=2.701$, $p=0.007$). The result indicates that SMEs owner-managers' safety leadership attributes in terms of safety concern exists in SMEs manufacturing firms in Negeri Sembilan, and it has influenced both of the workers' safety compliance and safety participation of the workers. This result matched Inness, Turner, Barling and Stride (2010) who concluded that safety participation and safety compliance were predicted by the level of supervisors' safety concern. Lu and Yang (2010) also found in their study that employee's perception on safety leadership with respect to safety concern influenced both safety participation and safety compliance of the workers in container terminal.

As Gouldner (1960) utilised the norm of reciprocity in explaining employee's behavioural and attitude changing, this research findings approved that reciprocity is essential in inculcating both safety compliance and safety participation of employees at the workplaces. In addition, this research's result also confirmed that safety concern is the most

important safety leadership attributes as it has been consistently explaining the variance in both dimensions of safety behaviour.

5.3 Implication

This study findings have implications to both the theory as well as managerial in the area of occupational safety and health . Thus, this section will discuss on the theoretical implications as well as managerial implications of present thesis findings. The theoretical implication could benefit the researchers in the area of OSH. The managerial implication should benefit the authority of OSH as well as OSH practitioners.

5.3.1 Theoretical Implication

This research has been conducted to explore the relationship between safety leadership dimensions, namely safety motivation, safety concern and safety policy ; and safety behaviour. Previous studies which are comparable to this study were found conducted in other major sectors while this study has been conducted in the SMEs. In addition, other studies were conducted in other countries such as Australia (Neal and Griffin, 2006), Taiwan (Lu & Yang, 2010) and Canada (Sivananthan, Turner and Barling ,2005) ; while this study's findings has extended the research in understanding the relationship between safety leadership and safety behaviour in south-east Asia region, specifically Malaysia.

In summary, this study contributions to the academic and OSH practitioners are providing evidence as per below:

- i. Independent variables which are safety motivation, safety concern and safety police have correlation with safety compliance as well as safety participation.
- ii. Safety policy and safety concern have positive influence towards safety compliance.

- iii. Safety motivation and safety concern have positive influence towards safety participation.
- iv. Safety policy has no influence towards safety participation.
- v. Safety motivation has no influence towards safety compliance.

In addition, this research also provides empirical evidence that the most contributing factor among towards safety behaviour is safety policy. This proves that the leadership attributes in implementing safety and health policy could shape the workers safety compliance behaviour. Furthermore, this research provides academic evidence that safety leadership in terms of safety concern is an important determinant towards safety behaviour as it has been consistently explaining the variance in both dimensions of safety behaviour.

In conclusion, the findings of the study has also contributed the additional input to existing literatures related to leadership and behaviour, and would be theoretically valuable as it was performed in the SME sector.

5.3.2 Managerial Implication

The result of this study indicates that relationship between safety leadership and employee's safety behaviour are significant. Thus, in order to improve OSH performance within the SMEs manufacturing, safety leadership attributes of owner-managers could be the important factor. Thus, this research findings could be another guideline for the government in formulating effective strategy, which is to put more weightage to inculcate and enhance the safety leadership behaviour among the SME owner-managers is predicted to result favourable outcomes in elevating SMEs' OSH performance and further more to

decrease industrial accidents within the sector. The strategies that could be implemented strategically by the Department of Occupational Safety and Health.

Based on the research findings, it is understood that the owner-manager of the SMEs should maintain their leadership behaviour in terms of formulating and implementing company's safety and health policy. Their commitment towards workers' safety and health while working should be translated in a clearly written statement and should be implemented accordingly. Furthermore, through safety policy, the owner-managers of SMEs should express of safety compliance so that the workers perceive that their safety and health at work are similarly important with their productivity to their organisations. In short, the owner-managers of SMEs should know the method to construct effective safety policy and procedures. DOSH (2006) detailed out the definition of safety and health policy which is a statement of commitment of an employer in regarding the application of OSH at the workplace in order to ensure safety and health of the workers. The three components which should consist in the policy are a general statement of employer's commitment towards workers' safety and health at workplace, a statement of OSH organisational structure at workplace and the responsible personnel in carrying out the policy, and the arrangement such as safety inspection, safety training, accident investigation, standard operating procedures and emergency procedures, to ensure that the policy implemented. In addition, safety policy could be concluded as documented management commitments towards realising OSH management system at workplaces (Ismail Bahari ,2006; Maimunah Aminuddin, 2013). Therefore, training on establishing and implementing safety policy within the SME context could be an important program that should be attended by the owner-managers of SMEs and DOSH could collaborate with the National Institute of Occupational Safety and Health (NIOSH) in constructing such specific module. Furthermore, NIOSH could collaborate with other related non-governmental bodies to

subsidise the training fees to assist the SME owner-managers to attend training at minimal cost.

This study also found that safety leadership in terms of safety motivation has influence towards safety participation. As small-structured organisation, participation on safety related activities and programs from all the workers is essential in maintaining safety performance. Based on the finding, the owner-manager of SMEs should find “inexpensive yet effective” methods to motivate their workers to increase their participation in safety related programs. Appropriate incentive scheme is the best method for the the owner-manager of SMEs to motivate workers participation. The owner-manager could utilise on non-monetary benefit scheme such as recognition, coupon and so forth to increase safety participation. In addition, the owner-manager should develop their motivating skills in related to safety besides knowing the proper method to motivate safety participation. Thus, appropriate training on developing safety leadership in terms of safety motivation should be attended by the owner-managers from time to time and such training courses should be pioneered by DOSH in collaboration with NIOSH or other higher educational institutions in Malaysia.

Based on this study’s finding, safety concern is the important dimension of safety leadership as it influences both safety behaviour dimensions which are safety compliance and safety. In small organisations with lack of financial muscle, employer’s concern towards their personal safety, health and well-beings at work could establish reciprocal effect. It is believed that if the employees perceive that their employer/managers/leaders are concern on their safety and well-beings, they will comply with safety related rules and regulations, as far as practicable and give their commitments in participating in safety related programs even without receiving monetary incentives. Thus, the owner-managers of SMEs should ,

regularly express the importance of safety behaviour through expressing their concern towards the aspects of workers' safety, health and welfare at the workplace. Safety concern could be manifested through various ways such as emphasising on wearing personal protective equipment, provide basic necessary needs for workers' safety, health and welfare (toilet, rest area etc), provide basic safety training, involving the workers on safety related decision. Thus, the owner-managers of SMEs should own good interpersonal skills in expressing safety concern towards their employees. With the simple organisational structure which promotes more direct contact between owner-manager and the workers, two-way communication is the best method in expressing safety concern. Dejoy (1985) as well as Lin and Mills (2001) also stressed that two way communication between employees and the managers could facilitate the effective implementation of OSH and foster safety behaviour.

5.4 Suggestion for Future Research

This research only focuses on SME in manufacturing sector in Negeri Sembilan. It is hoped that this study will be replicated by using the sample from SME from other states for better results. The relationship between safety leadership and safety behaviour among SME workers from other sectors, for example, agriculture or construction sector could be explored as it may produce different results or findings.

This study only uses three dimensions of safety leadership, that are safety motivation, safety concern and safety policy. These three independent variables contribute 30-40% of the safety behaviour as the dependent variables (based on the R^2 value). It means that there are other dimensions that have not been studied in this research that determine the safe

behaviour among the SME workers. In the future, other researchers could conduct studies exploring the relationship between demographic factors such as age, length of service, gender (Lu & Yang , 2010; Omer Sadullah & Kanten, 2009) , ethnicity and educational level (Nahar, Ford, Hallam, Bass, &Vice, 2013) and safety behaviour among the workers. In addition, safety training (Cooper & Phillips, 2004) , working conditions (Kanten, 2013) , OSH related enforcement by the government authorities (Scholz & Gray , 1990) could also be tested as the determinants of safety behaviour among the SME workers. Qualitative methods may also be suggested to support the study because the workers will be able to reflect the real situation and put forward their perception towards employers leadership attributes in the most accurate manner.

5.5 Conclusion

The SMEs own unique characteristics which distinguish their OSH performance from the larger organisations. Besides their excellent contribution towards the national GDP, their contribution towards industrial accidents in Malaysia is also huge. To overcome the limitations and achieve good OSH practice, approaches which are suitable to the SMEs must be implemented by the stakeholders (employers, employee and the government). In conclusion, the result of this research indicates that employer's safety leadership in the aspects of safety motivation, safety concern and safety policy has significant and positive relationship with employee's safety behaviour. Thus, such safety leadership behaviour of the employer, could influence the safety behaviour, in terms of compliance and participation among the SMEs manufacturing workers. Based on this conclusion, all related parties should apply this findings for their managerial or academia purposes in benefiting occupational safety and health practice.

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