# MIDDLE-MANAGEMENT SUPPORT AND SAFETY TRAINING PROGRAM TOWARDS EMPLOYEES SAFETY BEHAVIOR IN THE MANUFACTURING ENVIRONMENT

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**By**

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## ABSTRACT

Safety behavior among workers at workplace is the important in leading towards safety compliance and safety indicators at any organization. In this research study, the variables influence the safety behavior at workplace had been explored and analyzed. There are three independent variables are identified, they are demographic factor, middle-management support and safety training program and one dependent variable for this project paper which is safety behavior among employees at workplace. Total of 163 sample size has been taken from various level groups that consist of middle-management such as engineers and shift managers also lower level employees such as technicians, trainers and manufacturing specialist. Study survey has been conducted through random sampling. A total of 200 questionnaires had been distributed to the sample of choose on the study consist of three independent variables of employee safety behavior that are: a) middle management support, b) safety training program and c) demographic.

Quantitative survey has been used for this study. From regression analysis result shows that two (2) hypotheses supported with significant value less than 0.05 significant levels. The result concludes that middle-management support did not give a significant impact to the safety behavior among employees at workplace. However, the result concludes that safety training program did give a significant impact to the safety behavior among employees at workplace.

The finding of the study had proven that employee safety behavior is influenced by safety training programs held at workplace. In hypothesis two, the researcher found, the employee safety behavior will not increase with the support and commitment given by the middle level management. Researcher had also revealed that the safety training program had a positive relation with the middle management support. Therefore safety of employees is primary important at workplace.

# ABSTRAK

Gelagat keselamatan di kalangan pekerja di tempat kerja adalah penting bagi memastikan pematuhan keselamatan dan kemalangan keselamatan di sesebuah organisasi. Di dalam kajian ini sebanyak tiga pemboleh ubah bebas (IV) telah dikenal pasti iaitu sokongan daripada pihak majikan, demografi dan programme latihan keselamatan di tempat kerja. Manakala satu pemboleh ubah bergantung (DV) telah dikenal pasti iaitu gelagat keselamatan di kalangan pekerja di tempat kerja. Sebanyak 163 sampel telah diambil dari pelbagai jawatan termasuk pengurus, jurutera, pelatih, juruteknik sehingga ke operator pengeluaran. Sampel secara rawak telah diguna pakai di dalam kajian ini dan tinjauan melalui soalan kuntitatif telah di gunakan sepanjang kajian dijalankan. Sebanyak 200 soalan kajiselidik telah diedarkan kepada sample yang telah dipilih. Soalan kajiselidik ini mengandungi tiga komponen pembolehubah tidak bersandar dalam gelagat keselamatan dikalangan pekerja iaitu a) sokongan dari pihak majikan b) program latihan keselamatan dan c) kajian 'demographic'.

Keputusan daripada analisa regression yang di jalankan terhadap hipotesis menunjukkan sebanyak dua hipotesis adalah bermakna dan diterima dengan nilai kurang dari 0.05. Kesimpulan daripada keputusan analisa menunjukkan sokongan daripada pihak majikan tidak dapat miningkatkan kesedaran terhadap gelagat keselamatan walaubagaimanapun program latihan keselamatan adalah bermakna untuk meningkatkan gelagat keselamatn ditempat kerja.

Daripada kajian telah dijalankan didapati bahawa gelagat individu dapat dipengaruhi oleh program latihan keselamatan yang dijalankan di tempat kerja. Penyelidik juga telah mendapati bahawa latihan keselamatan mempunyai hubungan yang positif dengan sokongan pengurusan pertengahan. Oleh itu keselamatan pekerja adalah sangat penting di tempat kerja.

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# CHAPTER 1

# INTRODUCTION

## 1.0 BACKGROUND OF THE STUDY

The behavior is motivated by its consequences, and thus behavior can be changed by controlling the events that follow behavior. But this principle of "control by consequences" does not sound as good as "control by positive thinking and free will". Therefore, the scientific principles and procedures from behavioral science have been underappreciated and underused. (Geller, 1995).

Behavior is the act or action that being done by individual that can be observed by others. It is include what the person does or says to what he or she thinks feels or believes (Geller, 1995). The Psychology of Safety Handbook (Lewis Publishers), human behavior is the collection of behaviors exhibited by human beings and influenced by culture, attitudes, emotions, values, ethics, authority, rapport, hypnosis, persuasion, coercion and/or genetics. The behavior of people (and other organisms or even mechanisms) falls within a range with some behavior being common, some unusual, some acceptable, and some outside acceptable limits. In sociology, behavior is considered as having no meaning, being not directed at other people and thus is the most basic human action. The acceptability of behavior is evaluated relative to social norms and regulated by various means of social control.

Middle-management and safety programs are the two key elements that will influence safety behavior and also safety incident at workplace. (Geller, 2008), saying that "I heard Dr Tom Krause say at "1999 Best Safety Practice in Safety management" conference sponsor by the America Society of Safety Engineer that leaders inspire people want to do something as appose to the managers who hold people accountability for doing something." Even though there are same which "Management Support". Middle-management support is important to ensure that the employees are well understood on the safety and they are the person to lead the employee towards safety success. Without middle-management support it is very hard for the organization to drive any of safety projects, safety programs, to allocate for safety programs and organization will not have a leader to lead the safety efforts. (Gellar, 2008), "you cannot do without it, whatever management really pushes and support will fail".

While safety training has been acknowledged as an important component of organize safety program for many years. It is believed that safety training could help employees to gain knowledge, enhance skills and gain more positive attitude as well as make them competent in performing their jobs with regards to safety and health (Health Safety Executive [HSE], 1997). In today's rapidly changing high technology and workplace demand, safety training is more important than ever. Therefore, all employees need to be given suitable types and sufficient amount of safety training in order to improve their safety awareness to face daily hazards, risk and danger in their workplace.

Johnston et al. (1994) define safety training as a formal or an informal method to help individuals in attaining knowledge, changing attitudes, or performing safe work behaviors. They explain that knowledge refers to safety information, attitude refers to feelings associated to safety, and behavior represents organizational, management, or employee performance. Cooper (1998) asserts that safety training has been used as an effort to change people's safety behavior and safety attitudes in a workplace. He also argues that safety training plays a role as a lower-order measure for controlling risk and it also should not be a substitute for proper risk control. Although safety training takes a role as a lower-order of risk control, it does not mean safety training is not important as training is enables employees to understand their job requirements and individual abilities (Health Safety Executive [HSE], 1997).

In this study, the research will be specifically conducted in Multi National Semi-conductor Company located at northern region of Malaysia. This electronic company that produces computer microprocessor and it has more than 1200 employees consist of various levels of education and background.

Understanding and good safety behavior will leads to the success of the safety programs, safety indicators thus enhances the company turnover. With a good safety behavior among employees, there will be less or a very minimum safety incident that indirectly will increase the productivity of the company.

## 1.1 PROBLEM STATEMENT

Safety is remaining an issue that both employees and employers must take seriously in workplace. Previous researchers recognize the important of strong safety behavior

in ensuring the organization and employee achieve a high standard of safety in workplace (Murphy, Sturdivant & Gershon, 1993). Most of employees have the expectation that their workplace is safe environment to perform their routine job. Some workplaces seem like to be safer than other workplace as some occupations offer more safety than others. It is always depend on employees and management to ensure all the safety rules are being followed. Even though employers care about their own safety, it is the responsibilities of every employee to be aware and follow safety and health issues at workplace. Every employee must be responsible for their own safety and must also take action to help harm to others.

Employees are directly and indirectly involved in safety and health in a company. Their involvement provides the means through which workers develop and express their own commitment to safety and health. The effective employee involvement in safety and health management system includes planning and implementation, evaluation, corrective, and preventive action, use and maintain all personal protective equipment (Waring, 1996). The most important involvement will be the participation and support of employees all the safety and health programed where they will be trained on aspect such as incident investigations, procedure development, safety and health audits or survey, job safety analysis, recommendation for specific action in response to employee safety suggestion and problem-solving techniques to seek solutions to identified safety and health problems (Spender, 1996). Safety has created a need for a new method to improve safety at workplace. The people still believe on fast worker and shortcuts or unsafe behaviors often become the norm (Wright, 1986) since the allow worker to complete the work much more quickly and efficiently (Slappendal et al., 1996). Therefore the employees must also cooperate with their

employer to measure on occupational safety and health as required under the act or regulation. Safety and health management systems should involve employees at every level of the organization because they are often closest to hazard and have the most firs-hand knowledge of workplace hazards. Management should encourage employees to use safe work practices and to integrate safety into their jobs. Involving employees and using safe-behavior reinforcement develops a positive approach to managing the safety and health process. Employer play important role to protect the safety, health and welfare of their workers and other people who might be affected by their business. Their views and actions have a strong influence on an organizations safety even though they may not be directly involved in operational activities. Management should provide a safety policy effective procedure such allow employees to talk directly to the managers, be able to handle emergency problems. Besides that, it is important to study safety compliance in a sub-organization because it is the essential essence in determining a sub-organization success or downfall.

At the time of the formation of a company, its safety goals, safety programs, policies, plan and procedures need to be documented. Safety committees are helpful in increasing employee involvement in one organization. Employers must have an overall safety training program to teach their worker to handle risks. The training programed should cover topics such as accident prevention and safety promotion, safety compliance, accident and emergency response, personal protective equipment, safety practices, equipment and machinery chemical, hazardous material safety, workplace hazards and employee involvement (Holton, 1991). The management should ensure the safety of employees by the means of safety programs. An effective training program can reduce the number of injuries, property damage, legal liability,

workers compensation claim and missed time from work. The employees need to be trained to react to impending dangers, face the risks and deal with accidents at work.

Therefore, the employee safety behavior was mainly conducted to determine how the middle-management support can influence the employee's safety behavior at the manufacturing environment. As per the discussion throughout this chapter, there were many previous studies were conducted on the safety management, safety training and as well as the safety behavior in various industries. The employee safety behavior study was emphasized on the employee's safety behavior in the sub-organization of the Multi National Semi-conductor Company. The study was involved individual as the unit of the analysis whereby it measured the perception and satisfaction level of employees individually. Every one of them was given an opportunity to evaluate and express their satisfaction towards safety in the organization.

There are many safety activities such as safety promotion programs, safety awareness campaign, safety line walk, safety training programs and other activities that were conducted to enhance the safety practices, awareness and compliance among Multi National Semi-conductor Company employees. However, the company still has the safety issues that were recorded base on the following table 1.1 below.

**Table 1.1**

*Multi National Semi-conductor Company Safety Indicators*

| Category | Work Week 11'12 | 2012 to date | 2011 | 2010 |
|---|---|---|---|---|
| FA | 7 | 45 | 80 | 120 |
| REC | 0 | 3 | 8 | 11 |
| DAC | 0 | 0 | 0 | 0 |
| SFI/EFI | 0 | 0 | 1 | 0 |
| SBI/EMI | 0 | 0 | 0 | 0 |
| **Progressive Indicator** | | | **15:1** | **Status Healthy** |

**Source: EHS Safety Indicators weekly update, Multi National Semi-conductor Company**

Note:
FA : First Aid case
REC : Recordable case
DAC : Day away case
SFI/EFI: Safety for information/Environmental for information
SBI/EMI: Safety bulletin incident/Environmental management incident

Table 1.1 shows that, for year 2012, there were total of 45 FA and with three REC cases reported. Table 1.1 had shown an improvements trend of the safety indicator compared to year 2011 with eighty FA and hundred and twenty FA for year 2010. However, the indicator has concludes that the safety indicator is healthy for this company with safety injury ratio of 15:1 and it is meeting the company safety injury ratio of 9:1 as indicated in table 1.2.

Based on the company safety indicator that indicates in table 1.1, it shows that the company safety indicators are healthy. Multi National Semi-conductor Company used the ratio method to identify the health of the safety indicators at the workplace. There are three safety indictor ratios as illustrated in table 1.2 below:

**Table 1.2**

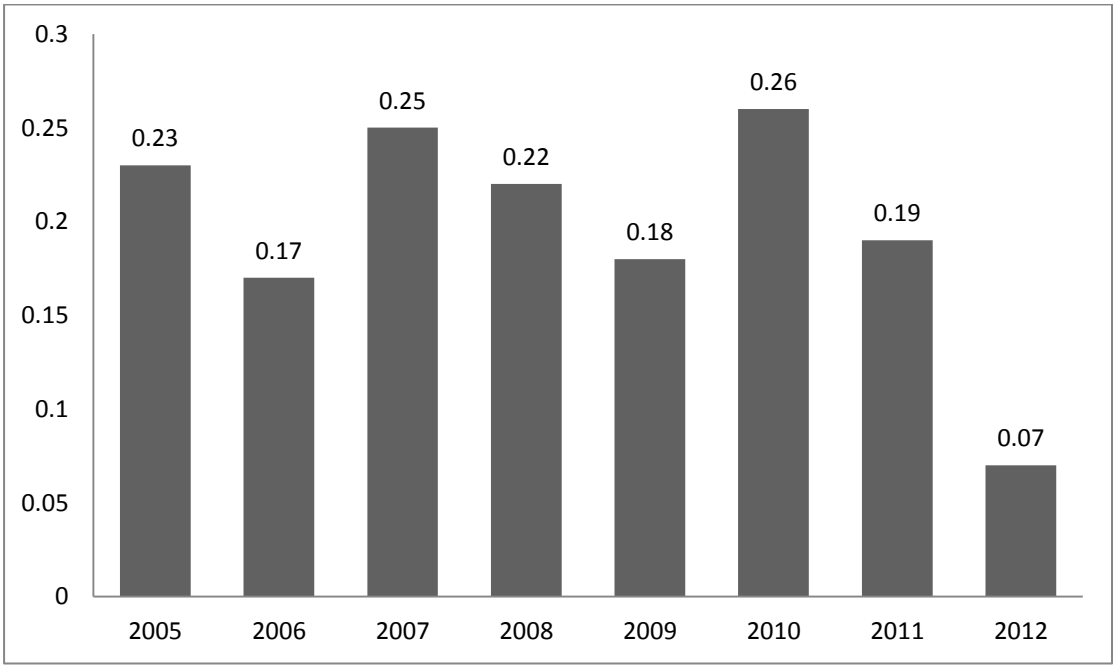
*Company safety indicator ratio*

| Company Safety indicator | Ratio |
|---|---|
| **Safety indicators in the healthy** | **> 9:1** |
| **Safety indicators at intermediate** | **<9:1 and >4.5:1** |
| **Safety indicators is worst** | **<4.5:1** |

Note: Ratio is FA: REC (FA- First AID; REC – Recordable)

**Table 1.3**

*Multi National Semi-conductor Company Minor injury Rate*




**Source: EHS Safety Indicators yearly, Multi National Semi-conductor Company**

**Note: Multi National Semi-conductor Company Rate calculation**
**(Cases * 200K) / (173 * Head Count)**

Table 1.1 shows, total of three REC with 0.07% injury rate was captured for year 2012. Considering at the overall injury rate data, from year 2010 until 2012, there were huge improvements in term of the first aid and recordable cases that was captured, however the incident still happened at this company.

**Table 1.4**

*2012 company Incidents by Root Cause*

| Root Cause | Permanent workers | Contractor workers |
|---|---|---|
| Work Environment | 2 | 2 |
| Equipment | 3 | 2 |
| Procedure | 3 | 1 |
| Other | 4 | 1 |
| Unspecified | 7 | 4 |
| Behavior | 11 | 5 |
| Total | 15 | 30 |

**Source: Company 2012 SBI/SFYI Indicator Review**

For year 2012, the indicator for Multi National Semi-conductor Company showed 15:1 which mean that the company safety indicator is healthy. However, there were fourteen FA cases and three recordable cases that were captured in year 2012 with 0.07% rate. Looking for the overall from year 2009 until 2012, there are huge of improvement in terms of first aid and recordable, however the incident still happened. Employees behavior is the highest factor that contributed to the company incident as indicated in table 1.3.

Thus this study is to explore on why the incident still happening with a strategically focuses on the middle-management support and safety training programs towards the employee safety behavior at workplace. If there is a good management support then it will influence for better safety behavior and safety indicators at workplace. Where, the safety training programs will further enhance the safety behavior and practices among employees at workplace.

This study had been conducted among the workers inclusive of middle-management level, supervisors, engineers, technicians, trainers and operators that involve with the

manufacturing floor activities. Scope of the study had covered the normal shift employees and shift employees.

## 1.2 RESEARCH QUESTION

In this research, there were five (5) questions raised up to be conducted on the study of safety behavior at workplace.

a) What is the level of employee's safety behavior in this manufacturing company?
b) Is there any relationship between the middle management support and employees safety behavior?
c) What is the relationship between safety training and employees safety behavior?
d) Are there any significant differences in employee's safety behavior based on demographic data?

## 1.3 RESERCH OBJECTIVES

This study is to evaluate and identify factors that lead to employee's safety behavior in manufacturing environment. The research objectives include:

a) To identify the level of employees safety behavior.
b) To identify the relationship between middle-management support and safety behavior.
c) To examine the relationship between safety training programs and safety behavior.
d) This determines whether there are any differences in employee's safety behavior based on demographic differences.

## 1.4 SCOPE OF STUDY

The scope of the study is to perform a research at Multi National Semi-conductor Company located at northern region of Malaysia. Specific of the study is at one of the organization which is in manufacturing floor that consist of manufacturing operators, technicians, engineers, supervisors and managers as per table shown below.

**Table 1.5**

*Table of questionnaires survey population*

| No | Sample/Area/Population | Gender | Total Sample Size |
|---|---|---|---|
| 1 | Managers | Male/Female | 3 |
| 2 | Engineers | Male/Female | 10 |
| 3 | Trainers | Male/Female | 4 |
| 4 | Normal Shift Technician | Male/Female | 10 |
| 5 | Shift Supervisor | Male/Female | 8 |
| 6 | Shift A Manufacturing Specialist | Female | 24 |
| 7 | Shift A Technician | Male/Female | 8 |
| 8 | Shift B Manufacturing Specialist | Female | 24 |
| 9 | Shift B Technician | Male/Female | 8 |
| 10 | Shift C Manufacturing Specialist | Female | 24 |
| 11 | Shift C Technician | Male/Female | 8 |
| 12 | Shift D Manufacturing Specialist | Female | 24 |
| 13 | Shift D Technician | Male/Female | 8 |
| 14 | Total Sample Size | | 163 |

The purpose of the survey is to explore the middle-management support and safety training program towards the employee safety behavior at workplace. The 163 of sample size will represent result for the whole organization at workplace. The output

of this study will provide the management with information which will be analyzed to improve the level of safety behavior among employee in workplace.

## 1.5 SIGNIFICANCE OF STUDY

From this study researcher able find the relationship in between middle-management support and safety training program at workplace. Does the middle-management support will give a direct impact to the safety behavior and safe work practices for the employees at workplace. This study is also to explore on the safety training program among employees in safety practices and safety compliance at workplace. As for the overall outcome from this study, the result had concluded the relationship in between middle-management support and safety training program towards employee safety behavior at workplace.

In this study researcher had also explored on the support that being given by the middle-management for the employees that lead to the safety behavior thus able to explore on the factor that leads to the safety indicator at workplace. Researcher also explored on the impact from the middle-management support and safety training program towards the safety behavior. The end result of this study had concluded whether the middle-management support and safety training program will give a positive impact to the employee safety behavior.

## 1.6 DIFINITION OF KEY TERMS

In this research, there are 3 variables identified. The 3 variables are:

I. Safety behavior

II. Middle-management support

III. Safety training program

In this research employee safety behavior identified as dependent variable, whereas the other 3 variables which are middle-management support and safety training program are identified as independent variable.

### 1.6.1 Safety behavior

A safety behavior is the "adherence to established safety practices and procedures (e.g. the wearing of personal protection equipment, not taking unsafe shortcuts)" (Hofmann and Morgeson, 1999)

### 1.6.2 Middle-management support

Oxford Dictionaries Online (2012) defined the level of management that includes general managers, division managers, and branch the plant managers who are responsible for tactical planning and controlling

### 1.6.3 Safety training program

Safety training has been acknowledged as an important component of organized safety program for many years. It is believed that safety training could help employees to gain knowledge, enhance skills and gain a more positive attitude as well as make them competent in performing their jobs with regards to safety and health

(Health Safety Executive [HSE], 1997). In today's rapidly changing high technology and workplace demand, safety training is more important than ever. Therefore, all employees need to be given suitable types and sufficient amount of safety training in order to improve their safety awareness to face daily hazards, risk and danger in their workplace (Goetsch, 2005).

# CHAPTER 2

# LITERATURE REVIEW

## 2.0 INTRODUCTION

A literature review is a body of text that aims to review the critical points of current knowledge and methodological approaches on a particular topic. Literature review usually precedes a research proposal and results section. Its ultimate goal is to bring the reader up to date with current literature on a topic and forms the basis for another goal, such as future research that may be needed in the area.

In this study, the previous research had been used as reference in guiding this study. Several past literature review had been summarized based on findings during their study. There were many study that been conducted for the safety behavior, middle-management support and safety training program at workplace.

## 2.1 DEFINITION AND CONCEPTUALLIZATION OF VARIABLES

### 2.1.1 Management Support

Specific leadership principles and strategies are needed to empower a workforce to become self-accountable for injury prevention and actively care for the safety and health of others (Geller, 2008).

Great leaders bring out the best in people by showing them the intrinsic consequences of their meaningful work, thereby inspiring them to be self-accountable. To do this, they demonstrate humility, acknowledge the contributions of others, and accept personal responsibility for failure, promote a learning culture, demonstrate optimistic success-seeking over pessimistic failure-avoiding, make rigorous and discriminating, rather than ruthless and indiscriminate, personal decisions and encourage self-motivation (Geller, 2008).

Management commitment to safety is necessary, but true safety excellence requires engagement from personnel throughout the organization, especially the hourly employees. Such engagement in safety benefits the employees as well as the organization. In fact, studies recognize that by focusing organizational effort to cultivate a culture of involvement and participation, zero injuries is achievable (French and Geller, 2008). Managers at all levels of the organization need to exemplify a shared vision of safety excellence and demonstrate the leadership styles and practices needed to drive the desired culture change, including fostering a sense of employee ownership of safety (French & Geller, 2008). Without effective communications system in place, many management decisions and actions supporting safety are never know or realized by employees.

Simard and Marchand, (1997) mentioned that the influence of micro organizational factor found that micro organization is the primary determinant is supported and the macro organization also supported. The worker safety compliance is higher when supervisor have a power and influence the decision and join involvement with worker in conducting safety incident activities. Top management supports also influence the

safety compliance among workers. For employees to willingly participate in incident reporting and analysis, a system approach is necessary which supports a fact-finding perspective, a proactive stance and an appreciation of continuous improvement.

Leader need to help employees feel they are doing worthwhile work and are therefore important. Too often, negative feedback can be little one's sense of importance and that's disastrous for voluntary participation. That's why it's critical to emphasize a person's positive contributions to the workplace. When people believe their work is genuinely appreciated, they want to improve and do their best. They become self-motivated (Frence and Geller, 2008).

Huang (2004) mentioned that accessing the moderating role of supervisor safety support and the mediating role of employee safety control mention that the organization safety policy, supervisor safety support and employees safety control play critical roles in predicting both injury incident and satisfaction with company. On top of that employees understanding in the safety control are also critical in achieving the objective.

Managers must be able to lead the safety management actively. Leadership can be improving safety performance by articulating an appealing vision for the future, encouraging members of their team to think themselves and participation in safety activities by employees. Management support is able to affect the safety attitude and safety culture of member of their team, and therefore, determine safety performance of the team (Yan, Wang, Guo & Huang, 2009).

Lateiner (1969) conducted a study of the importance of attitude in controlling incidents and improving safety performance. Through a survey for supervisors of 47 companies, Lateiner (1969) found that as a positive attitude toward safety increased the number of accidents per employee dramatically decreased. He concluded that the development of a sound safety attitude throughout an enterprise was predicated on how well supervisors met safety responsibilities. Consequently, accidents will decrease when attitudes improve as a result of supervisors effectively performing safety procedures.

Zohar (1980) conducted the study of the management support for safety was also found to positively influence supervisor support for safety. Management has an influence on safety conditions but workforce compliance with safety rules and regulations under those conditions is influenced by the perceived fairness of the supervisor. There also another finding on 'high risk organizations', study whereas supervisors played an important role in the accident prevention process by transferring the elements of safety to members of the workforce. Evidence for this came from support for a tested model in which the causal chain ran from 'safety climate' to 'supervisor response' to 'co-worker response' to 'worker attitude', and then to 'safety behavior', 'risk' and finally 'accidents'.

As a summary, safety behavior, support from middle-management level, understanding from the workers or employees, motivation, skills, rewards, knowledge in term of safety, participation from the workers and management are the most important or critical variables to support or influence safety compliance at workplace. With safety behavior practices or mind-set, will give an impact to safety incident at workplace.

### 2.1.2 Safety Training Programs

Gill (2004) conducted a study and research on the safety violation and Safety improvement at a flight training company. There are several independences variable that being identified, they are deficiencies in training, lack of skill, lack of knowledge in term of safety, lack of experiences and organizational processes. (Support from management). Sample data was collected through survey questionnaires and group discussion that consists of management level and other employee's level. From the hypothesis that being defined, the result shows that the hypothesis for the assumption safety can only be forecasted and not guarantee is supported. Safety violations are due to the deficiencies of training, skills knowledge, experience and the organizational processes is supported as well. There also another finding which is new during this research, which is the safety violation reason also due to the personal or financial gain and also poor attitude towards the safety compliance.

Simard and Marchand (1997) conducted a study and research on the influence of micro and macro organization towards the safety workgroup compliance. The micro organization is focus on the middle management level which is supervisor that directly works with the workers in the floor and macro organization is for the top management support and understanding on the safety. Total of 1061 sample size had been taken from a various manufacturing plants through survey questionnaires. Hypothesis result shows that the micro organization is the primary determinant is supported and the macro organization support also supported. Result also shows that the worker safety compliance is higher when supervisor have a power and influence the decision and join involvement with worker in conducting safety incident activities.

Top management support is also influence the safety compliance among workers. For future research need to study on the cultural set of safety practices is link to an underlying set of safety beliefs and attitudes. In term of safety behavior, this research had shown that management understanding and support is greatly needed to ensure that all workers are understood and comply with the safety compliance. Once there is a management support, all the safety activities, regulation, safety committees can be implemented successfully thus resulted in safety compliance among workers.

Newnam, Griffin and Mason (2008) conducted a study and research on the factors that influences the driving crashes at the workplace. It is a study on the multilevel link to safety value and Individual prediction that includes of supervisors, fleet managers, drivers, and safety report and attitude perception toward driving crashed. Motivation is a mediator to influence the driving safety. Sample data was collected from supervisors, fleet managers and workers through scale questionnaires survey. There are several hypothesis being defined and the result shows that the drivers, supervisors and fleet managers did influences the work driving related that lead so safe or unsafe driving. However, driver's attitude and self-efficacy is a variance for driver motivation. Future study, need to test on the casual relationship in the safety framework to provide further validation on the relationship of the hypothesis. Based on the study and research above, the result of this study as safety compliance or in order to achieve the objective of the safety in workplace, we cannot just base or depends on certain level of people or individual but safety is everybody responsibility thus to comply with the safety rule and regulation or any safety policy that being implemented in the workplace.

Safety program is more than a set of rules, regulations and procedures; it is a cooperative effort between employees and management. Active employee participation produces a sense of belonging. The workforce develops an internal motivation. This involvement results in higher morale and improved work performance which impacts contractor growth and success (Eckhardt, 1993).

### 2.1.3 Demographic

Demographic factors such as age, education, experience, marital status, dependents, employment and habits have influenced workers safety perceptions. Perceptions portray the psychological construct of safety culture i.e. safety climate, which needs to be clear and positive. Improvements in working conditions and innovations in the equipment used in the industry are not enough to improve safety performance because organizational culture and human factors also play critical roles (Zhou et al, 2008).

Important impact has been determined for demographic factors as personal characteristics as age, gender, marital status, education level, working experience in the industry, and other personal information. These demographic factors can influence safety climate and consequently influence individual safety behavior (Hinze, 1997). Siu et al. (2003) investigated age difference in safety attitudes and safety performance in Hong Kong construction workers with data from 374 Chinese construction workers from 27 construction sites. The study found that the older workers showed more positive approaches toward safety. The author also found positive effects upon perceptions of older workers, who are married, and have more family members to support yet have little impact upon those who are in the youngest age, single, or have

no family member to support. Workers with educational levels below primary had less perception of the safety climate. Respondents revealed that subcontractors‟ employees had a less positive safety behavior as compared to the direct employees of the company.

### 2.1.4 Safety Behavior

Previous study from Salminen (2010) found a number of industrial disasters in recent decades such as Three Mile Island, Chernobyl, Bhopal and Exxon Valdez have occurred close to morning. Studying of these results has shown that these occurred due to fatigue or human errors because one has to work in night shift. Main factors in the incidence of injuries out of accidents are personal circumstances, environment condition, social and political conditions. A wide range of personal and occupational factors such as age, gender, and education level and employment status has been proposed as factors related with risk of accidents. Salminen (2010) found that young workers record higher incident rate and lower accident rates. Effect of impairment and discomfort by a work shift based on physical and psychological conditions of work may be uncomfortable for older workers. Epidemiological studies are in priority concerning the causes of occupational injuries, because these studies can help improvement of awareness on risk factors and determination of effective risk factor in increasing accidents.

According to Lu & Yang (2010), who carried the study of safety behavior in the passenger ferry context, safety behavior is defined into two parts, first is safety compliance as adhering to safety procedures and second is participating in safety

meetings, setting safety goals, providing safety suggestions within the organization, and expending effort to improve workplace safety. Their third finding study's indicated that safety training and emergency preparedness are positively associated with safety behavior, including safety compliance and safety participation. However organization's safety policy and safety communication have a positive but not significant influence on safety compliance. They suggest that greater safety climate will lead to better safety behavior in reducing workplace accident.

Furthermore, safety behavior from employees is importance. The aim of this study is to analyze middle-management support and safety training programs towards employee safety behavior at workplace.

## 2.2 UNDERPINNING THEORIES

Many safety training theorists like Holton (1996), Kirkpatrick (1954, 1998), Kraiger et al. (1993) have argued that the positive outcome of training in terms of transferability and applicability of acquired knowledge, skills and practices indicate the successfulness and effectiveness of training programs.

The assessment of safety training outcomes (i.e., levels of safety knowledge and skill, safe work practices and safety and risk understanding) revealed that over a period of time the levels of safety training outcome have been improved. This finding confirms the theory of training evaluation as suggested by Holton (1996) that changes in individual performance occur because they apply and transfer what they learned in the training. As such, changes in individual performance lead to changes at the organizational levels (i.e., reduction of workplace accidents). The more successful

learners would be expected to perform better and thus be more motivated to transfer what they had learnt in training to the real work context.

### 2.2.1 Theories of Safety Behavior

The theory related to behavior is based on operant theory by Skinner (1953), supervisor will observe worker's behavior, gave feedback and provide some form of positive and 15 negative reinforcement. There are several theories used by previous researchers to study the problems related to safety behavior at workplace such as below:

i. Behavior Modification Theory

ii. The Theory of Planned Behavior

#### 2.2.1.1 Behavior Modification Theory

Fleming & Lardner (2002) has used a behavioral modification theory, ABC model of behavior to describe about strategies to promote safe behavior as part of a health and safety management system. Refer to Table 2.0 below:

**Table 2.0**

*ABC Model of Behavior*

| Antecedent | Behavior | Consequences |
|---|---|---|
| Causal event (trigger) preceding the behavior | | |
| **A** | **B** | **C** |
| Hear telephone ringing interesting conversation with a friend | Lift telephone receiver | Have an |
| **A** | **B** | **C** |
| Hear telephone ringing working uninterrupted | Do not lift receiver, let the answering | Continue |

* Adapted from M Fleming & R Lardner

Based on the ABC model, specifies that behavior is trigged by a set of antecedents something which precedes a behavior such as A (hear telephone with a friend) and is casually linked to the B (Behavior) and followed by C (Consequences), that increase or decrease the likelihood that the behavior will be repeated. The antecedents are necessary but not sufficient for the behavior to occur. The consequences explain why workers adopt a particular behavior. The example in Table 2.0 shows the number of points. First it shows the role of the background, as if the individual did not hear the phone so they will not answer the phone. Second, it emphasizes the fact that it is the result of an individual who drives their behavior, because in both cases, individuals hear a phone ringing but do not answer because they want to work without interruption, for them, a positive result from chatting with friends. ABC analysis facilitates identification of ways to change behavior, to ensure that appropriate background is in place and consequently support the desired behavior. ABC is the same model used to promote OSH behavior. Table 2.1 shows the example, ABC analysis can be carried out to investigate why employees do not wear ear devices in a

noisy environment and identify how to promote wear ear defense and thus reduce hearing damage.

**Table 2.1**

*Examples of ABC Analysis*

| Antecedents | Behavior | Consequences |
|---|---|---|
| Ear defenders supplied by company<br>Required by company to wear ear defenders in specific areas<br>Knowledge of potential damage to hearing if ear defenders are not worn<br>Signs highlight areas where defenders are needed<br>Noisy environment<br>…etc. | Wearing ear defenders in noisy environments | Reduces the likelihood of hearing loss in the future<br>Less likely to get into trouble with management for not wearing ear defenders<br>Difficulty hearing their radio<br>Discomfort of wearing ear Defenders<br>…etc. |
| Peers do not wear ear defenders<br>Knowledge that rules on wearing ear defenders are not enforced<br>…etc. | Not wearing ear defenders in noisy environments | Impaired hearing in the future<br>Avoid discomfort of wearing defenders<br>Able to hear better in the noisy environment<br>…etc. |

* Adapted from M Fleming & R Lardner

Antecedents is the place for the desired behavior to occurs, as employees, they are provided with ear defenders and required to wear, event adequate signage displays where they are required and they also know that noise can damage their hearing. Although the antecedents is clear, many staff still not wearing their ear defenders, because they find the more comfortable than wearing ear defenders. The following describes how consequence drives behavior.

#### 2.2.1.1 Antecedents Trigger Behavior

Antecedents come before and help to trigger the behavior. An example of antecedents is regulation and procedures, suitable and adequate of equipment, information, signage, skill and training, knowledge of others people's expectation. Although the antecedents as a necessity for triggering the behavior, this presence does not guarantee behavior can occur. Back to Table 2.1, for example, the provision of regulation, safety procedures, information about long term affects due to failure of worn an ear protection to trigger safe behavior at over time. It's required a significance of individual consequences.

#### 2.2.1.2 How Consequences Drive Behavior.

Consequences are defines as the outcome of individual's safe behavior that influences the likelihood of repetition behavior. The consequences that influences the likelihood is depends on three main types as below:

i. Positive reinforcement (increase the likelihood)
ii. Negative reinforcement (increase the likelihood)
iii. Punishment (reduces the likelihood)

**Table 2.2**

*Type of Consequences*

Consequences that increase behavior

| Positive reinforcement | Negative reinforcement |
|---|---|
| Receive something that you want | Avoid something that you do not want |

Consequences that decrease behavior

| Punishment | Punishment |
|---|---|
| Receive something that you do not want | Lose something you have or want |

*Adopted from M Fleming & R Lardner

### 2.2.2 Theory Planned Behavior

According to Ajzen (1991), the theory of planned behavior (TPB) is a useful conceptual framework which combines the several of key concepts in social and behavioral sciences to deal with the complexity of human social behavior. The theory also defines these concepts in a way that allows the prediction and understanding of a particular behavior in a particular context.

Another researcher Fogarty and Shaw (2010) proved the Ajzen's Theory of Planned Behavior (1988) by investigating the influence of safe climate towards unsafe behavior at work. The investigation, which involves collecting data about safety awareness amongst employees and management personnel, was used to predict unsafe behavior in work practices.

## 2.3 THEORETICAL FRAMEWORK

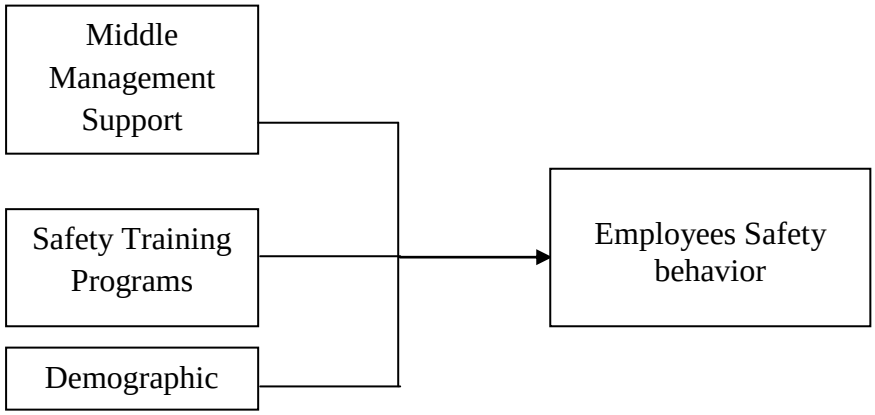



**Figure 2.1**

*Framework of the study*

Based on the Theoretical Framework illustrated above, there are three independent variable (IV) and one dependent variables identified.

Middle-management support, safety training programs and demographic differences of the respondents has been identified as independent variables in this research. This study will further examine the relationship in between middle-management support, safety training programs and demographic differences towards the employee safety behavior at workplace.

As for the conclusion on theoretical framework, the study or research will study on the relation in between middle-management support and safety training program towards safety behavior and safety incident at workplace. The study will also to understand on what are the gaps that still exist in this company since there are still an

incident happen across the years even though with many safety activities has been conducted.

At the end, the research will explain and conclude on the factors that influence the employee safety behavior at this workplace. Gaps or lacking will be study and proposal on the solution will be drafted at the end of this report.

## 2.4 HYPOTHESIS DEVELOPMENT

Hypothesis is a statement or proposition that can be tested by reference to empirical study. A hypothesis also can be shown to be true or false as a result of empirical research. The hypothesis is usually stated in a form that predicts there is a difference between two groups in relation to some variables or there is a relationship between two variables (Veal, 2005).

To answer the research questions and fulfill the research objectives, this study has proposed three (3) hypotheses as follows:

**Hypothesis 1 ($H_1$):** Middle-management supports have significant relationship on employee's safety behavior.

**Hypothesis 2 ($H_2$):** Safety training program have significant relationship on employee's safety behavior

**Hypothesis 3 ($H_3$):** Demographic differences have significant influence on employee's safety behavior.

## 2.5 CONCLUSION

As a summary, the theoretical framework drafted for this research had identified three independence variables and one dependent variable. Middle-management support, safety training program and demographic had been identified as independent variables and the safety behavior had been identified as a dependent variable. In this study, researcher would like to explore on safety behavior practices among employees at workplace.

In this chapter, researcher had developed three hypothesis questions with assumption that the middle-management support and safety training program will have positive coloration among employees towards the safety behavior at workplace. Beside that researcher also would like find any significant difference in employee's safety behavior study base on the demographic factors as explained in chapter 1. Detail finding will be discussed in the final chapter.

# CHAPTER THREE

# METHODOLOGY

## 3.0 INTRODUCTION

It is a quantitative research aimed to determine the relationship between independent variables and dependent variable. Quantitative research has been chooses for this study is based on the research that relies primarily on the collection of quantitative data. There is no experimental needed in this study and there will be no interview or observation to be conducted during the study. The data collection will be mainly on the quantitative survey question then analyze the data for the study findings and conclusion. Total of 163 employees had been randomly chosen as sample size of the population to represent the whole organization employees that consist of more than 400 employees.

## 3.1 RESEARCH DESIGN

In this study the quantitative research aimed to determine the relationship between independent variables and dependent variable. The study conducted is a survey in the form of itemized questionnaire which was designed to evaluate and gather the information about the middle-management support and safety training programme towards safety behavior among employees at Multi National Semi-conductor Company. The quantitative survey conducted allowed information to be collected

from a huge amount from a sample of respondents relatively fast, inexpensive and relatively anonymous.

## 3.2 POPULATION AND SAMPLE

The employee safety behavior study was conducted at the Multi National Semi-conductor Company located at the northern region of Malaysia. It is strategically located at the Island of Pulau Pinang. Multi National Semi-conductor Company has been operated in Malaysia for more than 30 years with more than 10 buildings or sub organization being operated. In this study, one of the sub-organization which is manufacturing production floor has been choose for the survey and research purpose. Multi National Semi-conductor Company had a good safety control activities that being practices in the organization. It has created a good safety practicing among employees and safety is the first priority for this company.

The population of this study is defined as all employees in assembly manufacturing area. A total of 170 are the respondents identified for this study. The sample size identified had been collected among manufacturing workers through the various level of working groups inclusive of managers, supervisors, engineer, normal shift employees and shift employees.

Based on the formula proposed by Krejcie and Morgan (1970), the samples of respondents needed for this study are 163 workers to represent the sub organization that consists of 170 employees as indicated in table 3.1. The sample of population was randomly selected among various working group.

**Table 3.1**

*Sample sizes of respondents.*

| No | Sample/Area | Population | Total Sample Size |
|---|---|---|---|
| 1 | Managers | 15 | 3 |
| 2 | Engineers | 4 | 10 |
| 3 | Trainers | 10 | 4 |
| 4 | Normal Shift Technician | 10 | 10 |
| 5 | Shift Supervisor | 30 | 8 |
| 6 | Shift A Manufacturing Specialist | 8 | 24 |
| 7 | Shift A Technician | 30 | 8 |
| 8 | Shift B Manufacturing Specialist | 10 | 24 |
| 9 | Shift B Technician | 30 | 8 |
| 10 | Shift C Manufacturing Specialist | 10 | 24 |
| 11 | Shift C Technician | 30 | 8 |
| 12 | Shift D Manufacturing Specialist | 10 | 24 |
| 13 | Shift D Technician | 15 | 8 |
| 14 | Total Sample Size | 200 | 163 |

## 3.3 DATA COLLECTION

The research conducted used primary data which was taken from the distributed questionnaires. A total of 200 questionnaires were distributed to the respective employees. The questions were distributed among engineers, normal shift technician, shift supervisor, shift manufacturing specialist, shift technician and managers. The respondents were briefed on the purpose and objective of the survey**.** Sample items

were chosen from these levels of employees (engineers, normal shift technician, shift supervisor, shift manufacturing specialist, shift technician and managers). Distribute the questionnaire and collect the survey questionnaire in two weeks' time frame. After all of the data have been collected and compiled, they are all keyed in and analyzed. Since this study, focused mainly on the descriptive analysis, questionnaires will be scrutinized through various cross tabulations of the questionnaire with respect to demographic representing the respondents.

## 3.4 QUESTIONNAIRES DESIGN

In this study, the quantitative questionnaires survey questions was drafted to examine the relationship between middle management support and safety training program and the employee safety.

There are total of 37 questions that specifically asked about middle-management support, safety training program and employee behavior at workplace was developed. Quantitative questionnaires survey questions with scale range from strongly disagree to strongly agree that consists of scale 1 – 6 were used.

### 3.4.1 Measurements

Questionnaires were designed to gather information from the respondents about middle-management support, safety training program, demographic factors and employee safety behavior. The questionnaire was edited and rephrased to suit with

researcher objective. Likert-scale type format being used for the quantitative survey questionnaires:

**a) Demographic Questionnaires:**

In demographic questionnaires, there are 3 types of questions that being ask to the responded that consist of length of service, educational level and their job level position at the workplace. The questionnaire for the survey is the adaptation from Choudhry et al. (2008), Shaliza Azreen Mustafa, S. K. (2009). The respondent's demographic section is divided into 2 categories. They are length of service and education level. The respondent's demographic section that is needed to be answered by them in the survey is as shown in Table 3.2.

**Table 3.2**

*Respondent's Demography*

How many year of service have you served in this company?
*Berapa tahunkah anda telah berkhidmat disyarikat ini?*

| | |
|---|---|
| ☐ 0 ~ 5 Years / Tahun | ☐ 16 ~ 20 Years / Tahun |
| ☐ 6 ~ 10 Years / Tahun | ☐ > 20 Years / Tahun |
| ☐ 11 ~ 15 Years / Tahun | |

Highest education Level / *Tahap pendidikan*

| | | | |
|---|---|---|---|
| ☐ | SPM | ☐ | Degree / *Ijazah Sarjana Muda* |
| ☐ | STPM | ☐ | Master / *Sarjana* |
| ☐ | Diploma or Certificate / *Diploma atau Sijil* | ☐ | PhD / *Doktor falsafah* |

**b) Middle-management Support Questionnaires:**

In middle-management support questionnaires, total of 17 questions being developed for the survey for participants to answer. These questions will study on the management support towards safety behavior at workplace. The question will also explore on the support that being given by the management to the employees for any safety related issues. It will also tell the researcher whether the middle-management support did exist in the study at workplace or otherwise. The questionnaires for this research were adopted from previous research Mohamed, (2002). The respondent's for items management support section that is needed to be answered by them in the survey is as shown in Table 3.3.

**Table 3.3**

*Items management support*

**PART B: MANAGEMENT SUPPORT/*SOKONGAN PIHAK MAJIKAN***

| Strongly disagree<br>*Sangat tidak bersetuju* | Disagree<br>*Tidak bersetuju* | Slightly disagree<br>*Sedikit tidak bersetuju* | Slightly Agree<br>*Sedikit setuju* | Agree<br>*Bersetuju* | Strongly agree<br>*Sangat Bersetuju* |
|---|---|---|---|---|---|

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|

| No | **Management Support / *Sokongan Pihak Majikan*** | |
|---|---|---|
| B1 | Managers give high priority to safety.<br>*Pihak pengurusan memberi perhatian yang tinggi terhadap keselamatan.* | 1 2 3 4 5 6 |
| B2 | Managers and supervisors always talk about importance of safety with workers.<br>*Pengurus dan penyelia selalu bercakap mengenai kepentingan keselamatan dengan pekerja.* | 1 2 3 4 5 6 |
| B3 | Management provides sufficient resources for safety at workplace.<br>*Pihak pengurusan menyediakan kelengkapan yang cukup bagi tujuan keselamatan di tempat kerja.* | 1 2 3 4 5 6 |
| B4 | My management provides safe equipment for my work.<br>*Pihak pengurusan saya menyediakan peralatan selamat untuk kerja-kerja saya.* | 1 2 3 4 5 6 |
| B5 | Safety is the top priority for my supervisor and manager.<br>*Keselamatan adalah keutamaan yang utama bagi penyelia dan pengurus.* | 1 2 3 4 5 6 |
| B6 | My supervisors and managers always encourage in early reporting for any near misses or accident.<br>*Penyelia dan pengurus saya selalu mengggalakkan pekerja untuk melaporkan sebarang kemalangan atau pekara-pekara yang boleh menyebabkan kemalangan.* | 1 2 3 4 5 6 |
| B7 | My supervisors and managers appreciate for any early reporting in regards to safety<br>*Penyelia dan pengurus saya amat menghargai perkerja terhadap sebarang laporan awal yang bersangkutan dengan keselamatan di tempat kerja.* | 1 2 3 4 5 6 |
| B8 | Supervisor give priorities to productivity compare to safety.<br>*Penyelia lebih megutamakan pengeluaran barangan berbanding keselamatan.* | 1 2 3 4 5 6 |
| B9 | My management always provides solution for any safety related issue. | 1 2 3 4 5 6 |

| | | |
|---|---|---|
| | *Pihak pengurusan selalu melakukan penyelesaian terhadap sebarang isu yang bersangkutan dengan keselamatan.* | |
| B10 | Supervisor and managers constantly remind employees to do job safely during meeting.<br><br>*Penyelia dan pengurus selalu memperingati pekerja agar melakukan kerja dengan selamat sewaktu mensyuarat bersama pekerja.* | 1 2 3 4 5 6 |
| B11 | My management provides sufficient PPE for me to perform my job safely<br>*Pihak pengurusan menyediakan peralatan keselamatan individu yang mengcukupi bagi membolehkan saya melakukan kerja dengan selamat.* | 1 2 3 4 5 6 |
| B12 | My management provides sufficient Safety Training to perform my job safely.<br>*Pihak pengurusan telah menyediakan pelajaran atau latihan keselamatan yang mencukupi untuk saya melakukan kerja dengan selamat.* | 1 2 3 4 5 6 |
| B13 | Fast action will be taken by management for any safety issues reported.<br>*Pihak pengurusan akan mengambil tindakkan yang pantas bagi menyesaikan sebarang laporan isu yang berkaitan dengan keselamatan.* | 1 2 3 4 5 6 |
| B14 | Safety is one of my management considerations for any decision making.<br>*Keselamatan adalah salah satu pertimbangan yang akan diambil oleh pihak pengurusan didalam membuat sebarang keputusan.* | 1 2 3 4 5 6 |
| B15 | My management always role model in safety.<br>*Pihak pengurusan menjadi contoh bagi pekerja di dalam bidang keselamatan.* | 1 2 3 4 5 6 |
| B16 | Support from management is important to prevent safety incident.<br>*Sokongan dari pihak pengurusan adalah penting bagi mengelakkan sebarang kejadian keselamatan.* | 1 2 3 4 5 6 |

**c) Safety Training Program:**

Safety training program questionnaires consists of 11 questions. The questions that being developed to the respondents to answer are to explore on safety training program that being provided by the company to the employees. The questions also to study on the impact of safety training program towards safety behavior among employees at workplace. The questionnaire for the survey is the adaptation Babbie, (2008). The respondent's for items safety training program section that is needed to be answered by them in the survey is as shown in Table 3.4.

**Table 3.4**

*Items safety training program*

**PART D: SAFETY TRAINING PROGRAMME/*PROGRAM LATIHAN KESELAMATAN***

| Strongly disagree *Sangat tidak bersetuju* | Disagree *Tidak bersetuju* | Slightly disagree *Sedikit tidak bersetuju* | Slightly Agree *Sedikit setuju* | Agree *Bersetuju* | Strongly agree *Sangat Bersetuju* |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |

| | **Safety Training Programme/*Program Latihan Keselamatan*** | |
|---|---|---|
| D1 | Manager and supervisor support safety programme or training for the employees.<br>*Pengurus dan penyelia memberi sokongan kepada program atau latihan keselamatan untuk pekerja.* | 1 2 3 4 5 6 |
| D2 | The training I had attended cover all the safety and health risks associated with the work for which I am responsible. | 1 2 3 4 5 6 |

| | | |
|---|---|---|
| | *Latihan yang telah diberikan kepada saya meliputi semua risiko keselamatan dan kesihatan yang berkaitan dengan kerja dan tanggungjawab saya.* | |
| D3 | Safety training is provided to all new hire employees.<br>*Latihan keselamatan di berikan kepada semua perkerja baru.* | 1 2 3 4 5 6 |
| D4 | PPE training will encourage employees to wear the PPE while working.<br>*Latihan tentang PPE menggalakkan pekerja memakai PPE ketika bekerja.* | 1 2 3 4 5 6 |
| D5 | I always follow the programmes or courses on health and safety held by the management.<br>*Saya sentiasa mengikuti setiap program atau kursus mengenai kesihatan dan keselamatan yang dianjurkan oleh pihak pengurusan.* | 1 2 3 4 5 6 |
| D6 | I am provided with suitable and sufficient safety training for my job.<br>*Saya dibekalkan dengan latihan keselamatan yang mencukupi dan sesuai dengan kerja saya.* | 1 2 3 4 5 6 |
| D7 | Safety training programmes help to foster a safe work culture among the employees of this company.<br>*Program latihan keselamatan membantu memupuk budaya kerja selamat di kalangan pekerja syarikat ini.* | 1 2 3 4 5 6 |
| D8 | Safety training programme could reduce rate of occupational accidents in the company.<br>*Program latihan keselamatan mampu mengurangkan kadar kemalangan pekerjaan di syarikat ini.* | 1 2 3 4 5 6 |
| D9 | Worker safety training programme resulted in greater compliance with company safety procedures when working.<br>*Program latihan keselamatan menyebabkan pekerja di syarikat ini lebih mematuhi prosedur keselamatan ketika bekerja.* | 1 2 3 4 5 6 |
| D10 | Safety training can develop safe work culture among employees.<br>*Latihan keselamatan memupuk budaya kerja secara selamat di kalangan pekerja.* | 1 2 3 4 5 6 |
| D11 | Safety training programme is a method of ensuring the workplace is always safe.<br>*Program latihan keselamatan adalah satu kaedah memastikan tempat kerja sentiasa selamat.* | 1 2 3 4 5 6 |

**d) Employees Safety Behavior:**

Individual behavior questionnaires consist of 10 questions. The purposes of these questions are to study whether safety behavior exist at the study workplace or employee's practice the safe work procedure because their understanding on safety or force by the management. The question will also study on the understanding of the safety among employees at workplace. The questionnaire for the survey is the adaptation from Geller, (1996, 1998); Krause, et al., (1996). The respondent's for individual behavior section that is needed to be answered by them in the survey is as shown in Table 3.5.

**Table 3.5**

*Items Individual behavior*

**PART C: INDIVIDUAL BEHAVIOR/*TINGKAHLAKU INDIVIDU***

| Strongly disagree<br>*Sangat tidak bersetuju* | Disagree<br>*Tidak bersetuju* | Slightly disagree<br>*Sedikit tidak bersetuju* | Slightly Agree<br>*Sedikit setuju* | Agree<br>*Bersetuju* | Strongly agree<br>*Sangat Bersetuju* |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |

| | **Individual Behaviour / *Tingkahlaku Individu*** | |
|---|---|---|
| C1 | I feel safe working with my company.<br>*Saya berasa selamat bekerja di syarikat ini.* | 1 2 3 4 5 6 |
| C2 | I will not perform any job or work that is not safe.<br>*Saya tidak akan melakukan sebarang kerja yang tidak selamat.* | 1 2 3 4 5 6 |

| | | |
|---|---|---|
| C3 | I follow safety procedures while performing my daily routine job even though my supervisor not around.<br>*Saya akan mematuhi prosedur keselamatan semasa melakukan tugas harian walaupun tidak ada penyelia pada waktu itu.* | 1 2 3 4 5 6 |
| C4 | Perform job safely is my culture.<br>*Melakukan kerja dengan selamat adalah budaya saya.* | 1 2 3 4 5 6 |
| C5 | I will not report to management for any safety or near miss at my workplace.<br>*Saya tidak akan melaporkan sebarang pekara yang akan menyebabkan isu keselamatan ditempat kerja kepada pihak pengurusan.* | 1 2 3 4 5 6 |
| C6 | I always give attention for safe work practices.<br>*Saya selalu memberi perhatian sepenuhnya untuk melakukan kerja dengan selamat.* | 1 2 3 4 5 6 |
| C7 | I have been providing with enough tools or resources in performing job safely.<br>*Saya telah diberikan peralatan yang mencukupi untuk melakukan kerja-kerja dengan selamat.* | 1 2 3 4 5 6 |
| C8 | I do not understand on what is "safety", I follow safety procedure because afraid of warning latter.<br>*Saya tidak faham maksud "keselamatan", Saya menuruti prosedur keselamatan kerana takut akan surat amaran yang akan dikeluarkan oleh pihak pengurusan.* | 1 2 3 4 5 6 |
| C9 | I always adhere to safety regulations at work.<br>*Saya sentiasa mematuhi peraturan keselamatan ketika bekerja.* | 1 2 3 4 5 6 |
| C10 | I will be more alert and follow safety work procedures effectively when the safety training provided.<br>*Saya lebih mematuhi arahan dan prosedur kerja secara selamat sejak mengikuti latihan keselamatan yang disediakan.* | 1 2 3 4 5 6 |

## 3.5 PILOT STUDY

The pilot survey can be defined as the pre-testing or 'trying out' of a particular research instrument, Baker (1994). The advantages of conducting a pilot study is that it might give advance warning about where the main research project could fail, where research protocols may not be followed, or whether proposed methods or instruments are inappropriate or too complicated. In the other words, "Do not take the risk, pilot test first." De Vaus (1993). These are some important reasons for doing a pilot study, but there are additional reasons, for example convincing funding bodies that the research proposal for the main study is worth funding.

For this study, the pilot test was conducted in two stages. In the first stage, five (5) respondents were selected. Then, the respondents are given the questionnaire and the respondents read it because the researcher wants to know their understanding regarding all the questions that had been asked. For the second stage of the pilot test, it was conducted on 30 respondents in manufacturing floor at Multi National Semi-conductor Company. Next, the reliability test was conducted by using the SPSS software. The instrument of reliability analysis for the pilot study is Cronbach Alpha.
Pilot study was carried out on a group of 30 employees from all various levels at manufacturing floor. The employees were briefed on the objective of the survey and they were also informed that all details were considered confidential.

The questions were completed within 20 minutes of time and were returned back to the researcher. The collected data were analyzed using Statistical Package for Social Science (SPSS) software version 20.0. From the reliability analysis conducted, the Cronbach Alpha value was 0.870 as indicate in table 306.

The cut-off limit for Cronbach Alpha (CA); less than 0.60 are considered poor, those in the range of 0.70 are acceptable and those over 0.80 are good and more than 0.90 are excellent (Sekaran, 2003)

.

**Table 3.6**

*Cronbach Alpha for the Pilot Study*

| **Variables** | **Mean** |
|---|---|
| Middle-management Support | 0.795 |
| Safety behavior | 0.668 |
| **Safety training program** | **0.791** |

## 3.6 DATA ANALYSIS TECHNIQUE

Statistic Package for Social Science (SPSS) program had been used for the data statistical analysis purpose. SPSS version 20 had been used base on the time of the research been conducted. P value below 0.05 was considered as statistically significant.

### 3.6.1 Data Screening

In data screening, all of the data which had been keyed into SPSS Version 20.0 will be checked on its missing data and normality. For missing data, each of the questions was checked to see if there is any missing question which had not been answered by the respondent. If there is a case, than the ID of the respondent will be checked and the respondent's questionnaire will be referred to in order to key in the correct answer.

Once the missing data is keyed in, the statistical programmed of SPSS will be analyzed again in order to check if there is any other missing data. If there isn't any, then the set of data can be analyzed using different type of testing. To check the normality of the data, the keyed in data was checked using SPSS version 20.0 software. The data was analyzed, and the value from Kolmogorov-Smirnov test of normality is used to evaluate either the data is considered normal or not. If the significant value is more than 0.05, it is considered as not significant, therefore the data is normal.

### 3.6.2 Reliability Analysis

Consistency of the instrument was shown by the Cronbach Alpha. As quoted from Sekaran (2003), reliability less than 0.60 are considered poor, those in the range of 0.70 are acceptable and those over 0.80 are good and more than 0.90 are excellent. Table 3.3 shows the reliability scale according to Hair et al (2003).

**Table 3.2**

*Reliability Scale*

| Alpha Coefficient Range | Strength of Association |
|---|---|
| < .6 | Poor |
| .6 to < .7 | Moderate |
| .7 to < .8 | Good |
| .8 to < .9 | Very Good |
| .9 > | Excellent |

*(Source: Hair et al (2003), Essential of Business Research Methods)*

### 3.6.3 Descriptive statistics

Descriptive statistics were used to study the demographic of the respondents who answered the questionnaire. This is the essential information required in order to have a general picture of the population who answered the questions. Respondents' profile and the organization's background were analyzed using descriptive statistics. They were measured using frequencies and percentages. For items which were measured based on a 6-point Likert Scale, means and standard deviation were analyzed.

### 3.6.4 Hypothesis Testing

Hypotheses testing are used to determine the probability that a given hypothesis is true. Multiple Regression, correlation and independent sample t-test were applied to test the hypothesis. Multiple regression is used to explain the relationship between multiple independent variables and one dependent variable. Correlation is used to identify if there is any significant relationship between dependent variable and independent variable. Independent Sample T-Test was conducted in order to compare means between 2 populations. For example in this research, means between male and female were compared. One-way ANOVA was used in order to compare two or more means from two or more independent samples. Null hypothesis *Ho* and alternative *H1* were formed. The P-value which was computed will determine whether the null hypothesis is true or the other way round. If the P-value is less than 0.05, than the observed effect is statistically significant and therefore *H1* is accepted and *Ho* is ruled out.

## 3.7 CONCLUSION

This research is based on the primary data sources and the process of collecting data is done through distribution of questionnaire. In conclusion, this research revealed the level of knowledge on safety behavior among employees. The result of this study can help the management of Multi National Semi-conductor Company to identify the most independent variables that contribute to safety behavior.

# CHAPTER 4

# RESEARCH FINDING

## 4.0 INTRODUCTION

This chapter presents the statistical analysis of the results founded from the data collected from the questionnaire. The processes involved are number of return, normality test, demography of respondents, the pilot survey, reliability and validity of the instrument, descriptive statistics and hypotheses testing. Statistic package for Social Science (SPSS) is the software that being used to input data for quantitative survey questionnaires.

## 4.1 RESPODENT PROFILE

The sample size identified had been collected among manufacturing workers through the various level of working groups inclusive of managers, supervisors, engineer, normal shift employees and shift employees. Total of 200 questionnaires were given to all employees who has been identified for quantitative survey. After one week duration, a total amount of 163 respondents returned the completed questionnaire. This amount represented 81.5% respond rate.

### 4.1.1 Middle-management Support

For component one, middle-management support, the total number of questionnaires are sixteen and based on the reliability of the instrument (as in Table: 4.1), the Cronbach's Alpha reliability coefficient is 0.771 and Cronbach's Alpha reliability for pilot test shown 0.795. The data reliability is good if Cronbach Alpha value is more than 0.750 (Sekaran, 1992). This confirms that the instrument is reliable and no item needs to be deleted.

### 4.1.2 Safety Behavior

For component two, safety behavior, the total numbers of questionnaires are ten. Reliability of the instrument (as in Table 4.1) revealed Cronbach's Alpha value is 0.674 and Cronbach's Alpha value for pilot test is 0.668 which proved that the instrument is reliable and no item needs to be left out.

### 4.1.3 Safety Training Program

For component three, safety training program, the total numbers of questionnaires are eleven. Reliability of the instrument (as in Table 4.1) revealed Cronbach's Alpha value is 0.804 while Cronbach's Alpha value for pilot test at 0.791 which proved that the instrument is reliable and no item needs to be left out.

**Table 4.1**

*Table of variables*

| **Variables** | **Cronbach's Alpha** |
|---|---|
| | Full research |
| Management Support | 0.771 |
| Individual Support | 0.674 |
| **Safety training program** | **0.804** |

## 4.2 DESCRIPTIVE STATISTIC FOR ALL VARIABLES

Descriptive analysis being used to further explore on mean and standard deviation of data had been collected. The mean and standard deviation will be analyzed and compare with likert-scale center value. In this study the likert-scale used are from the scale 1 (Strongly disagree) until scale 6 (strongly agree).

Table 4.2 shows the descriptive analysis for all variables which are safety training program, middle-management support and employee safety behavior. The data shown that the mean is 4.86 for safety training program, which is higher than center value of likert-scale (1-6), thus the result relatively towards ‘agree’ on the safety training program at workplace.

The data shown that the mean is 5.0038 for middle-management support, which is higher than center value of likert-scale (1-6), thus the result relatively towards 'agree' on the middle-management support at workplace.

The data shown that the mean is 4.6509 for middle-management support, which is higher than center value of likert-scale (1-6), thus the result relatively towards 'agree' on the middle-management support at workplace.

**Table 4.2**

*Descriptive Statistics for all variables*

| | N | Mean | Std. Deviation |
|---|---|---|---|
| TRAINING | 163 | 4.8662 | .30570 |
| MANAGEMENT SUPPORT | 163 | 5.0038 | .34329 |
| BEHAVIOUR | 163 | 4.6509 | .38687 |

### 4.2.1 Demographic Analysis

Demographic analysis has been used for the statistical analysis on the size of sample at workplace in this study. In this analysis the length of service, educational level, job position, the response to the middle-management support questionnaires, safety training program questionnaires and safety behavior questionnaires were analyzed. Total of 163 respondents from manufacturing floor had been participated in this survey and the data had been plotted into SPSS version 20 application for the survey analysis.

### 4.2.2 Length of Service

The following table 4.3 shown that there were total of 163 respondents participated in the survey. There was 8% respondents work between 0-5 years, 23.9% respondents work in between 6-10 years, 57.1% respondent's works in between 11-15 years, 9.2% respondents work in between 16-20 years and 1.8% respondents work more than 20 years. From this table, it shows that majority of the respondents at this workplace have been worked in between 11-15 years with 57.1% out of 100% respondent.

**Table 4.3**

*Respondents length of service at workplace*

| Length of service | Frequency | Percentage |
|---|---|---|
| 0 to 5 years | 13 | 8 |
| 6 to 10 years | 39 | 23.9 |
| 11 to 15 years | 93 | 57.1 |
| 16 to 20 years | 15 | 9.2 |
| > 20 years | 3 | 1.8 |
| **Total** | **163** | **100** |

### 4.2.3 Educational Level

Table 4.4 shows that there were total of 163 respondents from the study at workplace had been participated in the survey. 47.2% of the respondents are at SPM level. 7.4% of the respondents are at STPM level, 26.4% are at Diploma level, 7.4% graduated with first-degree level and 11.7% with Master Level.

**Table 4.4**

*Respondents Educational Level at workplace*

| Educational Level | Frequency | Percentage |
|---|---|---|
| SPM | 77 | 47.2 |
| STPM | 12 | 7.4 |
| DIPLOMA | 43 | 26.4 |
| DEGREE | 12 | 7.4 |
| MASTER | 19 | 11.7 |
| **Total** | **163** | **100** |

### 4.2.4 Job Position for the respondents

The following table 4.5 shows the job position at the workplace study. From the table, it shows that there were various levels of employees had been participated in survey questionnaires, which were from manager level until shift manufacturing specialist level. The highest respondents were shift manufacturing specialist level with 58.9% then follow by shift technician level were at 19.6% and the lowest respondents were from managers' level at 1.8%.

**Table 4.5**

*Respondents Job Level at workplace*

| Job Level | Frequency | Percentage |
|---|---|---|
| Manager | 3 | 1.8 |
| Supervisor | 8 | 4.9 |
| Normal shift technician | 10 | 6.1 |
| Shift manufacturing specialist | 96 | 58.9 |
| Engineer | 10 | 6.1 |
| Trainer | 4 | 2.5 |
| Shift technician | 32 | 19.6 |
| **Total** | **163** | **100** |

## 4.3 INTERCORRELATION

A bivariate Pearson's product-moment correlation coefficient was computed to assess the relationship between the independent variables which are middle-management support and safety training program while the dependent variable consists of Safety behavior at manufacturing workplace.

**Table 4.6**

*Reliability coefficient for each variable*

| | | Training | Management Support | Behavior |
|---|---|---|---|---|
| Training | Pearson Correlation | 1 | | |
| Middle-management Support | Pearson Correlation | .900** | 1 | |
| Behavior | Pearson Correlation | .616** | .404** | 1 |

**. P<0.001 (2 Tailed)

A bivariate Pearson's product-moment correlation coefficient was computed to assess the relationship between the IVs (safety training program and middle-management support) and DVs (employee safety behavior). From Table 4.5, it shows that there was a positive correlation between safety behavior and safety training, where r = 0.616 (p < 0.000). Overall, there was a higher positive relationship between safety training program and safety behavior r=0.616. It means that increases in safety behavior were correlated with increases in safety training program.

### 4.3.1 Summary of Hypothesis

Table 4.7 present the results of the hypothesis testing conducted in this study. A bivariate Pearson's product-moment correlation coefficient analysis indicated that there is a relationship between safety training, and management support with safety behavior. Safety training program and middle-management support will influence the safety behavior.

**Table 4.7**

*Summary of Hypothesis Testing on Safety Behavior*

| Hypothesis | Analysis Results |
|---|---|
| Hypothesis1 : Middle-management Support and Safety behavior | Supported (Alternate hypotheses accepted) |
| Hypothesis2 : Safety training programs and safety behavior | Supported (Alternate hypotheses accepted) |

### 4.3.2 Multiple regressions

Multiple regression analysis was used to evaluate the effects of independent variables (safety training and middle-management support) on the dependent variable (safety behavior). As depicted in Table 4.8, the regression results revealed the R square value of 0.4927. This indicates that 49.27% of variance that explained the DV (safety behavior) was accounted for by the IVs (safety training and middle-management

support) where the F value = 49.427 at $p < 0.000$. Further, IV, safety training ($\beta = 0.813$, $p < 0.000$) there was a higher positive relationship between safety training program and safety behavior. It was seen that for every unit increase in safety training, safety behavior is predicted to be 0.813 higher. Thus, alternate hypothesis 2 (H2) was accepted.

Middle-management support IV ($\beta = -0.060$, $p < 0.000$) were not significant predictors of employee behavior. Thus, alternate hypothesis 1 (H1) was rejected. Thus, alternate hypothesis 2 was accepted.

**Table 4.8**

*Multiple regressions*

| Independent Variables | **Beta** | **t** | **Sig.** |
|---|---|---|---|
| Middle-management support | -0.060 | 8.874 | 0.000 |
| Safety training program | 1.327 | -7.010 | 0.000 |
| ** p<0.05 | | | |
| **$r^2$ = 0.383 Adjusted $r^2$ = 0.374 F = 49.427 Sig = 0 .000** | | | |

## 4.4 ANALYSIS OF JOB LEVEL TOWARDS SAFETY BEHAVIOUR

A one-way ANOVA was used to investigate the individual safety behavior reported among the job position group. Table 4.9 show that Levene's test for homogeneity of variances was significant ($p < 0.05$, thus, the population variances for each group were not approximately equal. The results must be interpreted with caution. Table 4.9

shows a significant effect for the job position group, F (6,156) = 7.303, p < 0.050 and thus, the alternative hypothesis was accepted.

**Table 4.9**

*Anova*

| | BEHAVIOUR | | | | |
|---|---|---|---|---|---|
| | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 5.317 | 6 | .886 | 7.303 | .000 |
| Within Groups | 18.930 | 156 | .121 | | |
| Total | 24.247 | 162 | | | |

**Table 4.10**

*Multiple Comparisons*

| Multiple Comparisons | | | | | | |
|---|---|---|---|---|---|---|
| (I) Job Level | (J) Job Level | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
| | | | | | Lower Bound | Upper Bound |
| Manager | Supervisor | .01894 | .23583 | 1.000 | -.6855 | .7234 |
| | PM Crew | .54848 | .22931 | .209 | -.1365 | 1.2335 |
| | MSes | .50568 | .20423 | .175 | -.1044 | 1.1158 |
| | Engineer | .03030 | .22931 | 1.000 | -.6547 | .7153 |
| | Trainer | .43939 | .26605 | .649 | -.3554 | 1.2341 |
| | Shift MTE | .63826* | .21033 | .044 | .0100 | 1.2666 |
| Supervisor | Manager | -.01894 | .23583 | 1.000 | -.7234 | .6855 |
| | PM Crew | .52955* | .16523 | .027 | .0360 | 1.0231 |
| | MSes | .48674* | .12819 | .004 | .1038 | .8697 |
| | Engineer | .01136 | .16523 | 1.000 | -.4822 | .5049 |
| | Trainer | .42045 | .21332 | .437 | -.2168 | 1.0577 |
| | Shift MTE | .61932* | .13769 | .000 | .2080 | 1.0306 |
| PM Crew | Manager | -.54848 | .22931 | .209 | -1.2335 | .1365 |
| | Supervisor | -.52955* | .16523 | .027 | -1.0231 | -.0360 |
| | MSes | -.04280 | .11575 | 1.000 | -.3886 | .3030 |
| | Engineer | -.51818* | .15578 | .019 | -.9835 | -.0528 |
| | Trainer | -.10909 | .20608 | .998 | -.7247 | .5065 |
| | Shift MTE | .08977 | .12620 | .992 | -.2872 | .4668 |
| Mses | Manager | -.50568 | .20423 | .175 | -1.1158 | .1044 |
| | Supervisor | -.48674* | .12819 | .004 | -.8697 | -.1038 |
| | PM Crew | .04280 | .11575 | 1.000 | -.3030 | .3886 |
| | Engineer | -.47538* | .11575 | .001 | -.8212 | -.1296 |
| | Trainer | -.06629 | .17776 | 1.000 | -.5973 | .4647 |
| | Shift MTE | .13258 | .07111 | .507 | -.0798 | .3450 |
| Engineer | Manager | -.03030 | .22931 | 1.000 | -.7153 | .6547 |
| | Supervisor | -.01136 | .16523 | 1.000 | -.5049 | .4822 |
| | PM Crew | .51818* | .15578 | .019 | .0528 | .9835 |
| | MSes | .47538* | .11575 | .001 | .1296 | .8212 |
| | Trainer | .40909 | .20608 | .428 | -.2065 | 1.0247 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Shift MTE | .60795* | .12620 | .000 | .2310 | .9849 |
| Trainer | Manager | -.43939 | .26605 | .649 | -1.2341 | .3554 |
| | Supervisor | -.42045 | .21332 | .437 | -1.0577 | .2168 |
| | PM Crew | .10909 | .20608 | .998 | -.5065 | .7247 |
| | MSes | .06629 | .17776 | 1.000 | -.4647 | .5973 |
| | Engineer | -.40909 | .20608 | .428 | -1.0247 | .2065 |
| | Shift MTE | .19886 | .18474 | .934 | -.3530 | .7507 |

**Multiple Comparisons**

| (I) Job Level | (J) Job Level | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| Shift MTE | Manager | -.63826* | .21033 | .044 | -1.2666 | -.0100 |
| | Supervisor | -.61932* | .13769 | .000 | -1.0306 | -.2080 |
| | PM Crew | -.08977 | .12620 | .992 | -.4668 | .2872 |
| | MSes | -.13258 | .07111 | .507 | -.3450 | .0798 |
| | Engineer | -.60795* | .12620 | .000 | -.9849 | -.2310 |
| | Trainer | -.19886 | .18474 | .934 | -.7507 | .3530 |

*. The mean difference is significant at the 0.05 level.

## 4.5 CONCLUSION

In this chapter 4, the entire submitted questionnaires were gone through several analyses that inclusive of demographic analysis, frequency analysis, descriptive analysis, crosstab analysis, correlation analysis and also ANOVAs analysis. Total of 163 respondents had responded to the questionnaire that was distributed at the workplace. There were total of three hypotheses being used for the research purpose. In this research, the researcher found that there was a positive correlation in between safety behavior and safety training thus it concludes that the safety behavior will increase with the safety training programs that being provided at the workplace. In hypothesis 2, the researcher found, the individual safety behavior will not increase with the support and commitment given by the middle level management. Researcher

had also revealed that the safety training had a positive relation with the middle-management support. In summary, two hypotheses being accepted and 1 hypothesis rejected.

# CHAPTER 5

# DISCUSSION

## 5.0 INTRODUCTION

In this chapter, researcher will go through the discussion on the finding from the analysis that was conducted and explain in Chapter 4. The relation of the hypotheses finding and result to be discus in relates to the objective of the study. Follow by the summary of the findings and also the summary of the whole study that includes the limitation of the study, barriers that was faced during research was done. This chapter also will listed the recommendation to the study workplace on what are the strategy for improvements and also the criteria that need to take into consideration in regards to the middle-management support and safety training program towards safety behavior among employees at workplace. At the end of this chapter, researcher will draft a conclusion for the whole project paper.

## 5.1. RECAPITULATION OF RESULTS

The objective of this study is to examine on the middle- management support, demographic factor and safety training programs towards employee safety behavior at manufacturing floor environment. Study was conducted at Multi National Semi-conductor Company with total 163 respondents participated in the survey questionnaires.

The regression analysis was used to evaluate the effects of independent variables (safety training programs and middle-management support) on the dependent variable (employee safety behavior). As depicted in Table 4.8, the regression results revealed the R square value of 0.383. This indicates that 38.3% of variance that explained the DV (employee safety behavior) was accounted for by the IVs (safety training programs, demographic factor and middle-management support) where the F value = 49.427 at $p < 0.000$. Further, the two IVs, safety training ($\beta = 0.813$, $p < 0.000$) and middle-management support ($\beta = -0.060$, $p < 0.000$) were significant predictors of employee safety behavior. In additional employees who have had work more than 10 years' experience showed the highest mean score on safety behavior at 99.4%, indicating that the longer they work with the company, the higher the level of their perception will be about safety behavior.

## 5.2 DISCUSSION ON THE RESEARCH OBJECTIVES

Following will discussed the details objective of the research as explained in chapter 1, the research objectives are as listed below:

a) To identify the relation in between the middle-management support on the employee safety behavior.
b) To justify the relationship in between the safety training programs towards the employee safety behavior.
c) To determines whether there are any differences in employee's safety behavior base on demographic differences.

### 5.2.2 Research objective to identify relationship in between the safety training programs and employee's safety behavior

This study provides important evidence of the safety training in reducing workplace accidents among employees at manufacturing workplace. Overall, there was a positive relationship between safety training programs towards employee behavior with the respondent agree that the training programs provided by the employer at the workplace will enhanced their safety knowledge and understanding the importance of safety practices at the workplace as indicate in table 4.7. This research as well revealed that the safety training programs is one of the important elements to provide minimum information to the employees about the workplace safety practices thus the employees can gain and use the knowledge to apply in their daily working task thus created a safe working environment and as well as committed to the safety practices at the workplace.

Researcher has also revealed that in this company, safety training program is embedded as part of the company orientation program for the new hire. Employees are mandated to attend and refresh the safety training programs in yearly basis and it is mandatory to all the employees. The training programs has enable the employees to understand the company's safety rules and procedures, the job hazards that present at the workplace and also the controls in place to eliminate or reduce these hazards (engineering and administrative controls and personal protective equipment). It is expected that employees who receive the safety training will be aware of the existing hazards and able to identify the hazards at the workplace. The information that being provided in the safety training will boost up the employees understanding in regards

to the safe work practices. Employees should be better prepared to work around those hazards and use proper personal protective equipment. Employees are also expected to be aware of company safety rules and procedures implemented to eliminate or reduce existing hazards. Therefore, it is likely that proper safety training programs lead to a reduction of workplace incident.

This finding is consistent with previous study and suggests that employees who have received appropriate safety training are expected to enhance their safety knowledge, safety attitude, and safety behavior as well as perform work activities in a safe manner.

The result of the finding indicated that the understanding of safety among employees is important towards employee's safety behavior at the workplace. With understanding, will influence the employees to think of safety before they conduct any job at the workplace thus they will ensure that there will be no safety incident as they understand that safety is not just at the workplace but also as the way of their life. Thus with understanding, less forces needed from the management thus can create the safety behavior at the workplace.

To some extend from the finding indicated for this study might be that although employees pose sufficient safety knowledge and skill as well as safe work practices, there are still conflicts between production and safety. Production employees working at the workplace have their own daily production targets. Therefore, in order to reach the production targets set by the company, they might ignore safety priority in their work place.

The assessment of safety training outcomes (i.e., levels of safety knowledge and skill, safe work practices and safety and risk understanding) discovered that over a period of time the levels of safety training outcome have been improved. This finding confirms the theory of training evaluation as suggested by Holton (1996), that changes in individual performance occur because they apply what they had learned in the training. This finding indicates that knowledge and skill from the safety training program was successfully applied by employees in the workplace environment.

Researcher had found that the result in this research paper had the same finding with the previous research that was wrote by Holton as indicate in chapter 4 where safety training program is important and give a great influence towards the employee safety behavior at workplace.

### 5.2.4 Middle-management support and safety training programs towards the employee's safety behavior.

The result from the middle-management support towards the employee's safety behavior as indicated in table 4.8 shown that the middle-management support was not significant in influencing employees safety behavior at the workplace with B= -0.60, p<.000. Researcher had found that, even though the middle-management support had been given a responsibility in ensuring the safety of the employee at the workplace, however, the middle-management tends to left safety behind and prioritize production productivity during the month end shipment closure. Researcher had further monitor and observed the situation and revealed the middle-management was not role model safety as part of their way of work but it was on situational basis and or being forced by the top management to comply with safety. This has indirectly gave a negative

perception to the employees and not be able to influence in creating positive safety behavior among employees at the workplace.

Safety training appears to have positive correlations with safety outcomes (incident). Safety training appears to be an effective way of reducing safety incident in the workplace as it prepares employees to engage in activities that lead to fewer accidents and injuries. The company had placed safety training at a high priority and it has employees with positive safety attitudes toward safe work practices and promoting a positive safety behavior at workplace.

Tomas et al. (1999) found that supervisors played an important role in the accident prevention process by transferring the element of safety to members of workforce. In fact, some of the concepts experimentally found that supervisor could dramatically improve safety performance use by merely emphasizing safety in internationals (Zohar, 2002).

Researcher had found that the result in this research paper had the same finding with the previous research that was wrote by Zohar (2002) and Tomas et (1999) all as indicate in chapter 4 where supervisor or management support is important and give a great influence towards the employee safety behavior.

### 5.2.5 Objective to determine whether there are any differences in employee's safety behavior based on demographic differences

Results from this study showed that employee safety behavior significantly different among three demographic factors (length of service, educational level and job level) towards employee safety behavior. Respondents, who had worked under five years showed significantly different perceptions from others as indicate in appendix C. Workers who have had more than 10 years' experience showed the highest score on safety behavior, indicating that the longer they work with the company, the higher the level of their perception will be about safety climate. This finding is consistent with Kao et al. (2008) who found that the longer the tenure, the higher the level of their perception on the safety at workplace. However, education level has no different as indicate in appendix C.

Furthermore, there is significant different from job level in this study where normal shift technician showed the lowest score towards employees safety behavior as indicate in appendix C. This might be normal shift technician will be dealing directly on the issues such as equipment's down or during engineering activities such as new product integration, new equipment's installation and other engineering activities.

Therefore, it seems that the demographic factor had significance differences in the employee safety behavior perceptions.

## 5.3 IMPLICATION OF THE STUDY

In this section, the implications resulting from the outcome of the study will be discussed. It will be focused to both theory and practice.

### 5.3.1 Theoretical Implication

This study was done to investigate the influence of middle-management support and safety training program towards employee safety behavior at workplace. There are many similar studies on safety behavior was done in various industries such as telecommunication industry, hospitality industry and construction industry. The research was done to prove on safety behavior among employees at workplace. Besides that, this study was conducted at Multi National Semi-conductor Company located at northern region of Malaysia where it creates new opportunity for researcher in the eastern to prove on the safety behavior among employees at workplace.

Many safety training theorists like Holton (1996), Kirkpatrick (1954, 1998), Kraiger et al. (1993) have argued that the positive outcome of training in terms of transferability and applicability of acquired knowledge, skills and practices indicate the successfulness and effectiveness of training programs.

The assessment of safety training outcomes (i.e., levels of safety knowledge and skill, safe work practices and safety and risk understanding) revealed that over a period of time the levels of safety training outcome have been improved. This finding confirms the theory of training evaluation as suggested by Holton (1996) that changes in individual performance occur because they apply and transfer what they learned in the training. As such, changes in individual performance lead to changes at the organizational levels (i.e., reduction of workplace accidents). The more successful learners would be expected to perform better and thus be more motivated to transfer what they had learnt in training to the real work context.

### 5.3.2 Practical Implication

The study on safety behavior is not only an essence to the academic world but also the operations of a company. It is, mandatory for every industry to follow and implement safety working environment without fail in order to increase productivity and profitability of the industry. Thus, this study will be helpful to investigate on the effectiveness of safety implementation of the company. By conducting more study on safety behavior, the management could see the lacking in enforcement to improve the quality of working and provide a safe working environment to the employees. Besides that, training on safety should be held more often to provide awareness and ensures that safety practices are implemented fully in workplace environment. Thus, the management plays an important role in improving the recruitment and selection process. The safety training and simulation on safety practices and emergency response should be given to the employees.

## 5.4 LIMITATION OF THE STUDY

In this study there are several limitations that being faced throughout the preparation of the study. Following are some of the limitation faced during the preparation of this research paper.

The company name that being used for this study is not the actual name of the company name. As this is one of the agreement and the company policy that do not allowed to publish the actual company name due to confidential and also will affect

the company reputation. Thus is this research paper, Multi National Semi-conductor Company being used.

The survey can only be conducted at one of the organization which the data might be too small. It is better to have more data from another organization so the data will be more efficient and less gaps or variance. However due to the limitation of the paper submission timeline, it is only can be conducted at one of the organization to represent the Multi National Semi-conductor Company.

## 5.5 RECOMENDATION

Based on analysis, researcher found that safety training program does influence the safety behavior at workplace. However middle-management support has not significance value toward safety behavior at workplace. There are some recommendations by researcher in order to improve the safety behavior at workplace. Management need to consistently remind the employees in regards to safe work practices and keep on encouraging the employees without fail. Frequent remainder through briefing during shift meeting will enhance the safe work practices at the workplace and enhance the safety behavior among employees at workplace. Management also need to invite shift manufacturing specialist and shift technician to EHS committee meeting to let them understand on what are the management activities in regards to the safety. This can be done by randomly selected the employees to the meeting and get their inputs as well on what are the safety issues either bad or good so that the management will get direct feedback from the employees. Besides that, the management needs to improve on the prioritization of the safety at the workplace.

Managers and supervisors need to show to the employees that safety is always the first value to consider for any decision making. Not just publish the banner or just brief the employees on the safety policy and company rule but they need to demonstrate it to the employees and to the workplace that safety is always top priority.

Supervisor needs to improve on the safety prioritization comparing to productivity. This one of the criteria that need to be improve in order to show to the employee that the management to practice safety behavior and as the role model safety to the employees. Supervisor need to ensure and check of their employees ration per tool during running production to follow the safety recommendation and procedure. Supervisors also need to have strong decision to stop for any equipment those not meeting the safety standard from being operate by the employees. Therefore, further research is needed to investigate specific safety training intervention, which targets improving the safety behavior in manufacturing workplace. Furthermore, the demographic factors towards employee safety behavior should be further investigated in this company.

## 5.6 CONCLUSION

In this study, researcher had gone through the analysis in regard to the middle-management support and safety training program towards employee safety behavior at workplace. The study was conducted at the manufacturing environment at one of Multi National Semi-conductor Company located at northern region of Malaysia. Total of 163 employees has been participated in the qualitative survey questionnaires

with various level of job working level that includes shift manager, engineers, shift supervisor, trainers, shirt technician, normal shift technician and shift manufacturing specialist.

The finding of the study had proven that employee safety behavior is influenced by safety training programs held at workplace. In this study, the researcher found, the individual safety behavior not significance with the support and commitment given by the middle level management. Researcher had also revealed that the safety training had a positive relation with the middle management support. Therefore safety of employees are primary important at workplace.

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