

**RELATIONSHIP BETWEEN SAFETY CULTURE AND SAFETY  
COMMITMENT AT WESTSTAR AVIATION SERVICES IN KOTA BAHARU**

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**A Project Paper is submitted to the School of Business Management, Universiti  
Utara Malaysia, in partial fulfillment of the requirement for the Master of Science  
(Occupational Safety and Health Management)**

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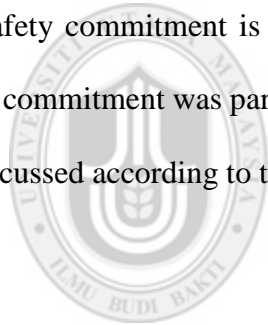
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## **ABSTRACT**

The study was conducted to determine the relationship between safety culture and safety commitment as well as level of safety culture and safety commitment of employees in Iststar Aviation Services Sdn Bhd (WASSB). This survey was distributed among 200 respondents at WASSB by using Loughborough university safety climate assessment tool kit (2003) to measure safety culture and safety commitment questionnaire developed by Abd Aziz (2008). 140 valid responses were received, all the results of measurement were then analysed statistically using SPSS version 22, with descriptive frequencies on demography, correlations and regression analysis. The findings indicated that the level of safety culture and safety commitment is moderately high. Results also indicate that safety culture and safety commitment was partially mediated by employee commitment. Further suggestions were discussed according to the findings to complete the conclusions and recommendations.



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## **ABSTRAK**

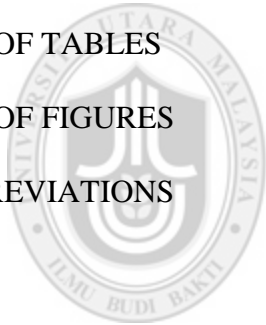
Kajian telah dilakukan untuk menentukan kaitan antara budaya keselamatan terhadap penglibatan keselamatan dan begitu juga kaitan tahap budaya keselamatan terhadap penglibatan keselamatan oleh pekerja Iststar Aviation Services Sdn Bhd (WASSB). Kajian ini telah dilakukan kepada 200 pekerja dalam WASSB dengan menggunakan alat mengukur budaya keselamatan university Loughborough (2003) bagi mengukur budaya keselamatan dan penglibatan keselamatan dalam soal selidik yang dibentuk oleh Abd Aziz (2008). 140 maklum balas yang layak telah diperolehi, semua keputusan penilaian statistik telah dilakukan dengan menggunakan SPSS versi 22, penjelasan setiap tahap telah dianalisa menurut demografi, yang ada kaitan dan tiada kaitan antaranya. Keputusan menunjukkan tahap budaya keselamatan dan penglibatan keselamatan adalah agak tinggi. Keputusan juga menunjukkan budaya keselamatan dan penglibatan keselamatan oleh pekerja adalah separuh tinggi. Cadangan kajian yang selanjutnya akan dibincangkan untuk mengemuka penemuan dan kesimpulan bagi melengkapkan pengkajian ini.

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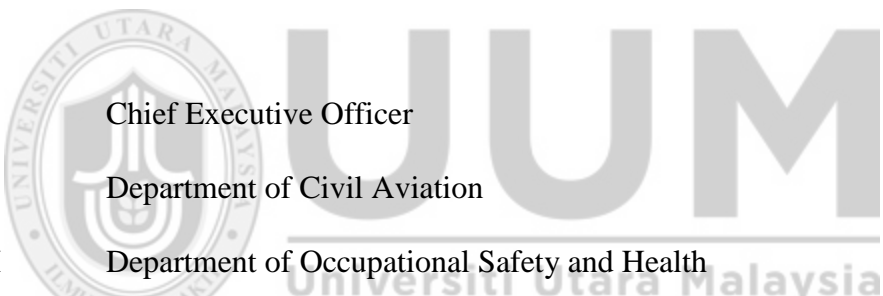
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## LIST OF ABBREVIATIONS



CEO	Chief Executive Officer
DCA	Department of Civil Aviation
DOSH	Department of Occupational Safety and Health
HR	Human Resource
HRM	Human Resource Management
HSES	Health, Safety, Environmental and Security
ILO	International Labour Organization
PETRONAS	Petroleum Nasional Berhad
SRP	Sijil Rendah Pelajaran
SPM	Sijil Pelajaran Malaysia
STPM	Sijil Tinggi Persekolahan Malaysia

WASSB      Weststar Aviation Services Sendirian Berhad

SOCISO      Social Security Organization (Malaysia)



# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

In the past two decades there has been an increasing interest in the concept of safety culture as a mean of reducing potential accidents at the workplace. Notwithstanding its recent appearance in the field of safety management, safety culture is gaining acceptance due to its critical role for improving organizational safety performance. Safety culture influences not only accident rates, but also on work methods, absenteeism, quality, productivity, commitment, loyalty and work satisfaction (Teo and Feng, 2008).

Teo and Fang (2008) explain that safety culture is a concept defined at the group level or higher. The concept refers to the shared values among all members in the organization who are concerned with safety issues at the workplace. It relates to the safety management system at the upper and lower level and emphasizes everyone's participation to practice and promote safety. It reflects the physical behavior of employees, willingness of organization for continual improvement in safety and the reward system for the individual safety performance.

The studies had shown that between 5 to 15 percent of accident at the workplace were caused by inherent job hazards and 85 to 95 percent of accidents were caused by the failure



of employer. The results of the accident had been negatively affected and correlated with safety, productivity, suffering and operational.

Even though several approaches have been employed to improve safety performance, absolute safety for human and properties is still an illusion. Factory machines and oil exploration facilities are still claiming workers' life or limbs. In USA alone, about 6500 American workers die each year because of accidents. National Safety Council also reported on an average day, 14 people died and more than 10,400 people are disabled because of work accident. In Nigeria, it was reported that over 11000 people lost their lives due to workplace accident each year and a worker is injured every 18 second in chemical industry alone. Whereas in United Kingdom, 1.6 million injury accidents and 27 million non injury accidents are recorded annually. All of these accidents affect the economy and become a social burden in the development of the country.

Workplace accidents cost the US economy approximately \$142.2 billion each year, with 4 million nonfatal injuries and 5734 fatalities recorded in 2005 (Bureau of Labor Statistics, 2006 and National Safety Council, 2005). It emerges as one of the key business risk for international and large organization. Researchers have speculated that safety attitudes predict safe behavior in the workplace (Neal and Griffin, 2004) and have empirical evidence to support this claim. For example, Rundmo (1996) found attitude toward safety had a direct effect on risk behaviors. Thus, research facilitating our understanding of the

development of safety commitment may contribute to our ability to reduce workplace accidents and enhance organizational safety performance.

## **1.2 Background of Study**

Studies by Boeing show that accidents involving commercial aircrafts from 1990 to 1999 had been doubled compared to the accidents reported from 1980 to 1989. It was discovered that the dominant cause of these accidents was due to human factor. For example, accidents due to human error in maintaining the aircrafts had been increasing every year. Therefore, this human error must be reduced to prevent accident at the workplace which will endanger the aircrafts and passengers on board. The safety aspects contributed by human and organization factors should be studied to prevent errors which lead to accidents. Appropriate measures must be implemented for preventing mistakes because an accident occurred when individual human errors contributed to a team error. Further examination is necessary to prevent errors while at the same time improve human safety performance (Zhang and Yang, 2006). Safety rules must be established and the technology in aircraft maintenance must be introduced to reduce human-machine interface.

Learning from past accidents and take necessary precautionary measures to prevent recurrence of accidents is crucial. In addition, improving human-machine interface, elevating the workers' competency through rigorous and effective training shall reduce human errors (Zhang and Yang 2006).

Table 1.2 shows the cause of accident for the commercial aircrafts from 2010 to 2014. According to this table, human error was the major cause of accident followed by technical error, environment, etc.

**Table 1.2: Accident from year 2010 to 2014**

No	Cause Of Accident	Total
1	Human Error	47
2	Technical Error	14
3	Environment/Nature	8
4	Unknown	11
5	Hijack	1
6	Terrorist	1
Grand Total Year 2010 – 2014		<b>82</b>

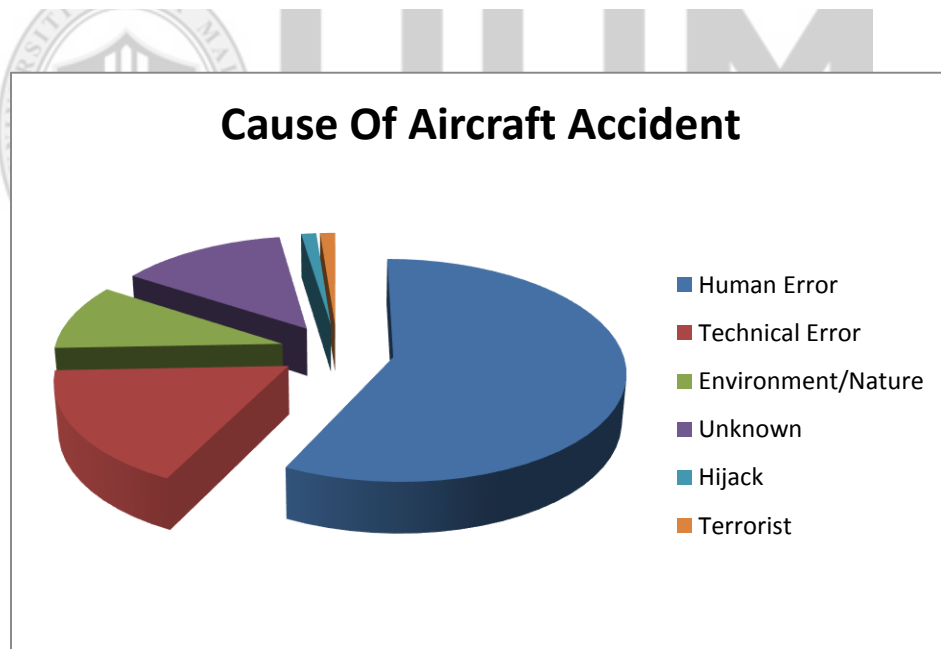
Source: Boeing (2014), *Statistical Summary of Commercial Jet Aircraft Accidents, Worldwide Operation*.

The following factors explain the specific causes of accidents depicted in Table 1.2.

- Violation of company procedures. This represents non-compliance to Standard Operating Procedure (SOP) and taking shortcut to save time and money.
- Lack of supervision. The lack of supervision from an experience person to oversee that the job is executed safety. Lack of control and communication. Control and communication deal with clear instruction to execute the job and getting feedback to improve the quality and safety of the job.

- Lack of understanding of responsibilities. This is about unclear and hazy about the ownership and responsibility of the job.
- Poorly written reports. Poor reports do not get the right message to intended recipients. Sometimes, it causes confusion.
- Communication during shift change. Handing over tasks during shift change is crucial to ensure continuity of the job. However, poor shift handing over had resulted in many accidents due to lack of risk re-assessment of the continuing job.

Figure 1.2 is a graphical form of the cause of accident involving commercial aircrafts from 2010 to 2014.



**Figure 1.2: Pie chart on Commercial Aircraft Accidents**

### **1.3 Organization Background**

Weststar Aviation Services Sdn Bhd is an aviation company which obtain DCA approved Air Operator Certification to provide helicopter charter services for the off shore movement. The company operates from its home base in Sultan Abdul Aziz Shah Airport at Subang, Selangor. Weststar aircrafts could easily be noticed with its distinguish elegant deep blue color exterior and stylish metallic grey stripes running lengthwise along the tail boom of its helicopters or on the fuselage of its business jets. Additionally, the prominent Weststar insignia is displayed on its tail. Weststar Aviation Services Sdn Bhd, a subsidiary of Weststar Group, is a company formed in 2003. During the initial set-up, the company owned and operated a single engine helicopter.

It added the fleet from one to a few helicopters due to increasing demand from its customers. While the helicopter transport remains the mainstay of the Aviation division, Weststar added more helicopters to serve its customers in Kelantan and Terengganu.

The main focus of this study is at Weststar Aviation Services in Kota Bharu which service the off-shore operations. To support the operation, the staff are divided into several crucial departments: Flight Operation, Engineering, Human Resource and Admin, Quality Assurance and HSES department. The company staff have to follow higher safety standard set for the aviation industry and by its customer. The safety standards include the using personal protective equipments (PPE) and comply with all standard operating procedures (SOP) during task execution. The safety standard is set by the Department of Occupational

Safety and Health (DOSH) and the Department of Civil Aviation Malaysia (DCAM) that must be strictly adhered by all staff regardless of their ranks in the organization.

The intention of this study is to determine the influence of safety culture on employees' safety commitment. This is because safety performance at Weststar Aviation Services Sdn Bhd is below expectation. The records show reporting culture for incidents is low, thus corrective and preventive actions could not implemented to avoid recurrence. The trend also shows the human error, non-compliance to safety rules and absenteeism rate are increasing at alarming rate. The aircraft maintenance department at Kota Bharu is the focus of this study because of its criticality to the safety of aircrafts and passengers onboard. In addition, the focus is to gauge the company's compliance to the aviation standards set by the clients and the authority.

Weststar Aviation Services believe engaging safety culture is a crucial first step to improve safety performance. The company also believes positive safety culture improves productivity while keeping staff fit and healthy. The management is committed and embraced positive safety culture for the benefit of all of its stakeholders.

This commitment is translated in establishing and implementing safety rules and procedures. In addition, the management practices open communication to encourage feedback from employees on safety practices. Zhang and Yang (2006) identify competency building as crucial in the developing safety culture. Therefore, management should plan to ensure the employees are competent to work safely. As such, researcher will collect the data from various levels of staff at Weststar Kota Bharu to determine the

relationship between safety culture and safety commitment as well as the competency of the employees at this site.

#### **1.4 Problem Statement**

The need for safety cannot be overemphasized due to the growing number of accident that occur in work places. Owing to the increased number of system failures, research has been ongoing as to the cause of accident in the work place. Increasing number of research work have attributed accident in the work place to be as a result of unsafe act and unsafe condition (Vrendenburgh, 2002). However, as accidents continue to increase there has been a shift in the occupational safety literature (Neal & Griffin, 2000). On the other hand, researchers now realize that organization culture has a significant role to play in work place accident. The culture of an organization is crucial because Reason's (1997) theory of accident causation points out that unsafe acts are triggered by inherent conditions that remain dormant within the organization, these conditions are referred to as latent condition which if not properly checked would result to employees engaging in unsafe acts.

In line with the above, increasing number of researchers now focus on the concept of safety culture due to its ability to tell the level of safety in an organization (Huang et al., 2006). The concept of safety culture is worthwhile because it reflects how committed management is to safety which impacts on employees' attitude in engaging in unsafe acts (Morrow et al., 2014). This unsafe acts aggregate to mare the performance of the organization with respect to safety (Reason, 1997).

Consequent upon above, a good safety culture in an organization increases an organizations robustness and ability to combat workplace accident. Safety culture is considered to be an aspect of organizational culture regarding the organization's shared belief, attitude and values that contribute to ensure safe operations (Morrow et al., 2014). As such Organizations now are showing interest in the concept of safety culture as a means of reducing disasters and accidents within their day to day activities (Choudry et al., 2007). Simply put the higher the safety culture, the higher the safety performance of the organization or the lower the number of accidents. Empirical studies have agreed to the latter claim for instance (Choudry et al., 2007; Fernandez-muniz et al., 2007; Hajmohammed & Vacchon, 2013). As such this study is an empirical endeavor to determine the level of safety culture in WASSB.

Another concept which has grown grounds in the occupational safety literature is the safety commitment of employees in an organization. Safety commitment plays a vital role in employee safety culture and safety performance development (Abd Aziz, 2008), it reflects the level of safety behavior of employee, and these behaviors in terms of safety are component of safety performance. The concept of safety commitment has been studied in railway (Abd Aziz, 2008) and petrochemical industry (Salleh, 2010), however, studies on safety commitment would be worthwhile to the safety literature if carried out in other sector or domain as such this study fills up the gap by examining the level of safety commitment in WASSB.



This study would be worthwhile as safety in WASSB has been seen to have to be lacking as a result of the following; lack of commitment by WASSB employees on hazard reporting, event planning and safety programs, poor communication among staff regarding hazard sharing and proactive measures, existence of inadequate safety procedures in place by departments with regards to WASSB staff daily duty which involves potential hazards, lack of employee compliance and participation on training and safety awareness, safety culture is not in line with the culture being practiced locally by WASSB employees.

In this study, researchers wanted to see to what extent the safety culture in Weststar Aviation Services Sdn Bhd at Kota Bharu (WASSB) practiced. This is because WASSB is a wholly owned subsidiary of Weststar Group which was recognized by a company that has a strong sense of safety and health issues.

### **1.5 Research Questions**

Based on the problem statement discussed previously, the main questions that become the basis of the research are as follows:

- 1:** What is the level of safety culture among staff at WASSB in Kota Bharu?
- 2:** What is the level of commitment on safety among Kota Bharu WASSB staff?
- 3:** What is the competency of staff on safety at WASSB Kota Bharu?

## **1.6 Research Objective**

Generally, the objective of this study was to investigate the relationship between safety culture and safety commitment that exist in WASSB Kota Bharu by practicing of safety management. The level is referring to the measurement on the impact of after the implementation of safety management in WASSB. The level is measured using Likert scale 1 – 5 representing the changes of the safety culture and commitment and eventually the both will be tested on the relationship where the safety culture is the independent variable and safety commitment will be the dependent variable. In addition, this study also has specific objective, namely:

- 1:** To access the level of safety culture among staff in WASSB Kota Bharu
- 2:** To access the level of safety commitment among staff in WASSB Kota Bharu.
- 3:** To determine the relationship between safety culture and safety commitment among staff in WASSB Kota Bharu.

## **1.7 Research Scope**

The study involved workers in WASSB Kota Bharu. Employees (respondents) were selected at random in the process of collecting data for use in this study. The focus of this study was to examine the safety commitment and safe culture by employees. This study will focus on workers in the aviation industry. Therefore, this research is crucial to

understand and acknowledge the role of safety culture, safety commitment and eventually safety competency among workers in WASSB.

### **1.8 Significance of Research**

The aim of this study was to identify the relationship of safety culture on workers commitment at WASSB Kota Bharu. There are three significances to conduct this study. Firstly is to provide information and guidance to employers about the importance of safety culture to enhance the effectiveness of safety management within the organization. The safety culture development will enhance commitment of the staff regarding safety issues.

Secondly is to provide awareness and exposure to employee related issues of safety and health at work. The implementation of safety management will eventually develop safety culture and commitment in WASSB.

Thirdly is to contribute to the further study in the context of safety culture and safety commitment in the organization.

### **1.9 Organizing Chapter**

This study consists of five main chapters. The first chapter was discussed on introduction to the study, research background, problem statement, research questions, research objectives and the significances of this study.

Next, in the second chapter, literature review of studies that have been done in the past with regard to safety culture. Past studies related to safety culture will also be discussed in this chapter.

The methodology used in this study will be discussed in the third chapter. In this chapter, the conceptual framework, hypotheses, study design, operational definitions, variables and instrumentation research, data collection, population and samples, pilot studies, and data analysis techniques will also be on display.

Chapter four discusses the results of this study. Here, researchers will describe the data processing, the demographic profile of the respondents and test Reliability of questionnaire items.

At the end of the chapter is also the fifth chapter, the researcher will describe the summary of the study, discussion of the findings, limitations of the study and recommendations that can be used by researchers in the future.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter will discuss two major issues related to the theories of safety culture and safety commitment in order to understand the relationship between safety culture and safety commitment. In addition, the mediating variable, the safety competency, will also be discussed in this chapter along with the support from previous studies. Related theory will be discussed. At the end of the discussion, there will be a specific focus on finding the relationship between safety culture as a dependent variable and safety commitment as an independent variable. A modified conceptual framework will be developed based on the old theories.

#### **2.2 Safety Culture**

The definition of safety culture was originated from industries other than aviation industry such as definition from nuclear power, mining and manufacturing industries. Nonetheless, there does appear to be several commonalities among these various definitions regardless of the particular industry being considered.

There has been a growing awareness of the influence and importance of workplace safety culture in influencing safety outcomes. The concept of safety culture emerged in late 1980 after the Chernobyl disaster and refers to organizational management and human factors shape safety outcomes. The related, but is more tightly defined, the concept of safety

culture focuses primarily on employee attitudes toward safety (Kathryn M. et al., 2014). Safety culture is an element of which a company or organization should be considered.

Safety culture is the sum of attitudes, norms, social roles and technical practices, which have the aim to minimize dangerous and risky conditions for employees, managers, customers and public. Safety culture is defined as a system of values, attitudes, beliefs, and behavioral meanings of shared by members of a social group and learned from previous generations. Culture itself, a group level constructs, is neither genetic nor about individual behavior. However, it exists within the knowledge systems of individuals, which are formed during childhood, and reinforced throughout life.

According to Martyka and Lebecki (2014) that cultural conditions of safety first gained the attention and interest of academicians and practitioners of management only in the late 1980s. Thus, this is a relatively new subject with a report by the International Atomic Energy Agency on the causes of the Chernobyl accident increasing its visibility. From that moment on, safety culture has been considered in investigations into the causes of other major catastrophes such as the London Underground fire at King's Cross and the explosion at the Piper Alpha drilling platform in the North Sea. In both these cases, the investigations of the causes strongly suggested poor safety culture.

Poor safety culture can lead to public health or occupational health problems: the Bhopal disaster involving isocyanate in India, the Fukushima disaster in Japan, the long term radiation impact of Chernobyl, the release of benzene in coking plant operations resulting in high community cancer clusters (the fourth largest in the USA is at Clairton, near

Pittsburgh, PA, the site of the world's largest coal coking plant) (Martyka and Lebecki, 2014).

In this context, the position on the safety culture of organizations has been recognized as a crucial factor in influencing the state of safety in enterprises. The development of safety culture and its practical use are two key priorities in creating safety. Pigeon suggests a definition of safety culture as (a) a system of meanings by which individuals, groups or communities understand hazard and risk and (b) a system of principles of behavior in hazardous situations. In principle, accidents are often preceded by the nonsimultaneous (or sequential) occurrence of errors in risk assessment and selection of technology, operating errors, improperly executed technical activities, mistakes of various kinds or violations of safety regulations. Any one of these issues will not necessarily lead to unwanted dangerous events, but their accumulation increases the probability of their simultaneous occurrence, which is a precondition for a catastrophe (Martyka and Lebecki, 2014).

Harvey et al. (2002) mentioned that safety culture is believed to be a key predictor of safety performance but is a concept with no clear definition or measurement. It has often been used interchangeably with safety climate, although the two may be distinct, climate reflecting attitudes, perceptions and beliefs while culture is more complex, reflecting values and norms and being evident in safety management practices. He also defines safety culture as all forms of learned behavior which 'add up to a shared commitment to think safely, to behave safely and to believe and trust in the safety measures put in place by the organization'.

### **2.2.1 Management commitment**

The most frequently researched form of commitment in occupational psychology is management commitment. Management commitment can be thought of as psychological attachment to, or identification with management. Although less extensively researched, it is also possible to consider the nature and level of commitment to a specific project such as a safety intervention. For any individual, commitment to a specific project is likely to be related to his or her level of management commitment. This relationship is not certain, however, and will depend on that person's perception of the importance of the intervention to the management. It is also possible that someone could identify with a specific project, in spite of a low level of commitment to the management as a whole.

In terms of the likely success of an intervention it does not matter whether a manager is committed through genuine enthusiasm, 'affective', and 'continuance' commitment respectively (Becker, 1960; Meyer & Allen, 1991). As long as management contributes the necessary time, resources and positive approach to the project, its role influencing the project's success is capable of being fulfilled. A genuine belief in the value of the project, a desire to receive career recognition; or a generalized belief that one should be committed to all work activities could all be sources of commitment for managers or observers.

Previous research Neal and Griffin (1997) has shown that management commitment is important to the success of safety commitment. According to them, between 5 percent and 15 percent of accidents are caused by inherent job hazard and 85 percent to 95 percent are



caused due to what employers do or failed to do. It also reported there is exists immense correlation between safety and productivity. Neal and Griffin (1997) proposed a model of safety performance based on current theories of job performance this model distinguishes between performance components, determinants of performance, and performance antecedents.

The case for an improvement in safety commitment can be argued on financial, legal and moral grounds. The important issue now is not referring to the argument but the process by which the corporate aims are translated into a program that will achieve the desired safety commitment. The basis for acceptable safety culture is generally recognized to be an established and robust safety management system, which provides the means for controlling and monitoring commitment. If this is the sole criteria for achieving safety culture, many other organizations already reached their desired commitment targets. With consider on any management function, the commitment not only depends on the management policies and influencing the project's success is capable of being fulfilled. A genuine belief in the value of the project, a desire to receive career recognition; or a generalized belief that one should be committed to all work activities could all be sources of commitment for managers or observers.

The case for an improvement in safety commitment can be argued on financial, legal and moral grounds. The important issue now is not referring to the argument but the process by which the corporate aims are translated into a program that will achieve the desired safety commitment. The basis for acceptable safety commitment is generally recognized

to be an established and robust safety management system, which provides the means for controlling and monitoring commitment. If this is the sole criteria for achieving safety culture, many other organizations already reached their desired performance targets. With consider on any management function, the commitment not only depends on the management policies and procedures, it also focuses on the development of effective operational practices, which are appropriate to the workforce implementing them. In order to identify current strengths and weaknesses of the commitment, it requires employers to audit and review their management systems and operational practices.

Management are aimed to prevent occupational accidents at work, which is an approach to control the workplace accidents. In essence, some authors have established about management practices, that management practices are an important factor of an organization's and it plays an effective role in reducing workplace injuries.

A study conducted on workplace health and safety on 312 workers in Canadian manufacturing firms found administrative policies; practices and attitudes have a direct positive impact on safety in the workplace. In addition, Injuries are low on the administrators and workers skilled or highly experienced in working. And official policies and practices such as encouraging workers to meet the requirements of safety, issuing a reward, motivation, and participation in the decision have a positive relationship in the rate of injury in the workplace. Department's cooperation with the workers through the Health and Safety Commission is a prominent role in the nappy to make workplaces free from injuries.

### **2.2.2 Communication**

A number of factors can facilitate on organization's capacity for change including the work context in which change of behavior occurs. Organizational climate is an important contextual component for shaping employee actions (Litwin, Stringer, 1968) including employee change-related behavior. A conceptual change process framework, citing that employee cognitions mediate in work context factors and change behavior, which suggests that employee climate perceptions or psychological climate should play an integral role in the change process. On the other hand, the safety culture seems to have a significant effect in risk behavior.

### **2.2.3 Priority of safety**

There is a direct connection between management commitment and employee perception whereby the leaders may influence organizational change by developing relationship with employees and engaging in behavioral practices. Hence, the initial focus of the study is supervisor-employee relationship and how the nature of their relationship and supervisor climate views influence the employee change climate perceptions.

It had been suggested that social cues from immediate supervisor play a role in influencing employee task related perceptions. Moreover, other studies by identified that manager's perceptions of team climate influenced individual employee perceptions. Other study (Jones and George, 1998) indicates that the quality relationship between team peers will make the members more apt to engage in behaviors entailing a certain amount of calculated

risk and deviation. It means strong supportive nature of teams will contribute a safety net for employees allowing them to engage in change behaviors within their jobs.

#### **2.2.4 Safety rules and procedures**

Effective safety management is important in managing the interaction between system and people. Thus human factor play a significant role in the safety commitment. Numbers of researchers recognized that in ensuring the organization and employee to achieve a high standard of safety culture in workplace, they must have strong safety culture which consists of safety rules and procedure in safety commitment.

#### **2.2.5 Supportive environment**

This component is unavoidable for the successful implementation of a safety program. It comprises of good communication, delegation of authority and responsibility, and sufficient resource allocation. It is essential for an effective safety program that rules, regulations, standards and expectations must be communicated throughout the workplace. As a result, everyone would comprehend and follow standards, and be safety conscious in the course of executing their roles and responsibilities in order to prevent work-related accidents and injuries.

To implement a safety program effectively, management must clearly assign responsibilities with adequate authority to qualified members who understand their roles

in the safety efforts. Additionally, it must be noted that the long-term and short-term goals of the safety program cannot be accomplished by a lack of adequate resources. The effectiveness of a safety program depends largely on the level of resources allocation including sufficient staffs, time, money, information, methods used in safety works, facilities, tools, machines, etc. (Rollenhagen and Kahlbom, 2001). A determination then needs to be made whether the employee and/or supervisor can assess the situation with the available information, or whether information and advice needs to be sought from the district office.

#### **2.2.6 Employee Involvement**

The worker involvement component comprised of positive group norms, personal attitude, personal motivation and continuing participation of workers. According to Fang et al. (2006), workers' safety attitude can be shaped by norms of peer groups and can be directed by individual motivation. Higher levels of worker' motivation towards safety can be strengthened by the degree of their participations in safety-related activities such partaking in activities of the workplace safety committees, reporting and correcting hazards under their operations, analyzing routine hazards within each step of a task or process, etc.

#### **2.2.7 Personal Priorities and need for safety**

Although in theory training seems to increase organizational performance, in actuality the evidence for such a claim is scant. Bartel (1994), in a survey conducted in the

manufacturing sector, found that there is a positive relationship between implementing formal employee training programs and labor productivity, both at individual and organizational level. In addition, another study to test the relationship between implementing training and organizational commitment, came across various findings concerning all three aspects of commitment, affective, normative and continuance. They did not receive support for their hypothesis, which was stating that training has an impact on commitment but they found that various dimensions of training are related with all three aspects of commitment. In general, it can be argued that the effect of training on employee outcomes (motivation, job satisfaction and commitment) has not received as much attention as it deserves. Few studies have been carried out that test the possibility that firms can affect their employees' attitudes by implementing training interventions. Lang (1992) argued that training should be designed to achieve increased organizational commitment. Another survey revealed that employees' commitment was associated with the actual and perceived HRM practices. These practices were internal promotion, employment security and training opportunities

#### **2.2.8 Personal Appreciation of risk**

It was discovered that personal appreciation of risk as a unique practice, affects the quality of the HR outcome of skills and ability, but behavioral and attitudinal change and thus higher commitment will be achieved by the contribution of the implementation of other practices as well. However, in theory, according to Harrison (2000), personal appreciation

(triggered by training) is a variable that may have a positive effect on organizational performance and is considered to be a key element to the attainment of organizational goals. Nevertheless, adopting a training activity as a solution to lagging performance presupposes that this performance problem, i.e. this gap between the desired and the actual performance, is due to lack of training.

### **2.2.9 Physical works environment on Safety**

The physical aspects of a workplace environment can have a direct impact on the productivity, health and safety, comfort, concentration, job satisfaction and morale of the people within it. Important factors in the work environment that should be considered include building design and age, workplace layout, workstation set-up, furniture and equipment design and quality, space, temperature, ventilation, lighting, noise, vibration, radiation, air quality.

## **2.3 Safety Commitment**

According to Cooper (1998), commitment to safety is defined as “an individual’s identification with an involvement in safety activities, characterised by a strong acceptance of and belief in the organization’s safety goals at workplace”. Employee’s safety commitment at workplace is a crucial element in organizational behavior. It reflects the employees’ attitudes and behavior toward preventing accident at workplace. Numerous

dimensions had been identified to explain the meaning of commitment (Morrow, 1983). It refers to consistent behavior (Becker, 1960), employees' involvement (Brown, 1969), employee's identification (Hall et al., 1970), organizational citizen membership (Becker & Randall, 1995), employer and employee binding (Allen & Meyer, 1990).

Safety practices and activities typically seek to gain safety commitment from both the employees and employers. A major main determinant of the commitment to safety is employee attitude and behavior, which is related to attitudinal commitment and behavioral commitment toward achieving safety goals. Zohar (1980), and Diaz and Cabrera (1997) concluded that management commitment is prerequisite for safety improvement. Dedobbeleer and Beland (1991), in a study of safety climate amongst construction workers, found that there are two important factors that should be included in safety surveys, namely management commitment to safety and employee involvement. Similarly, O'Toole (2002) in a study on mining and construction product companies found that management commitment to safety had an impact on employee's perception toward safety.

Cooper (1998) cited that management commitment plays an important role in the safety change process and safety auditing, and Cox and Flin (1998) found critical factors for safe operations. Likewise, organizational commitment is linked with employee motivation and accident rates. Diaz and Cabrera (1997) mentioned that some findings showed that low-accident companies were very precise in their management of commitment to safety, safety training, and selection procedures.



Clarke (1998, 1999) found that in the railway safety practice, the manager's commitment to safety influences the employee's perception upon safety practices. Manager commitment and action play as the main elements for improving the employee's attitude toward safety and safety activities (Cheyne et al., 1998). However, looking from the social engineered approach, commitment is a driving force upon the safety engine in organizational safety (Reason, 1990). Commitment to safety is a key element for safety culture performance in the organisation (Cox & Flin, 1998) and involves personal decision-making processes (Cooper, 1998).

All workers should give strong commitment to safety in order to improve safety commitment at the workplace. Implementation of safety and health activities depends on employees' attitude and commitment (Cascio & Baughn, 2000). Safety managers should study the employee's attitude and behavior to gain commitment from them (Goetsch, 1999), and major accidents and disasters in many organizations are mainly signs of a lack of commitment to safety (Hopf, 1994). Barling and Hutchinson (2000) in a study of safety behavior revealed that commitment-based safety practices would significantly affect perceived safety climate, both directly and indirectly. Without full commitment to safety from workers, all safety programs would be unsuccessful (Cascio & Baughn, 2000). Employees with high commitment to safety would enhance safety performance and generate rewards in terms of quality and profitability (Cooper, 1998). Clarke (1998) found that there were different perceptions on safety practices among groups of employees, but they shared understanding of the importance of safety issues at the workplace. Safety

committee members should comprise all levels of management in the organization and feedback or opinions from subordinates are valuable information for the safety management system (O'Toole 1999). Therefore, a similar safety policy and regulations should be applied to all departments in the organization to achieve organizational safety.

Safety procedures and regulations are priority in high risk industrial working environments (Reason, 1997; Cox & Flin, 1998; Cheyne et al., 1998). Normally only well-trained, experienced, and competent employees are selected to perform the job in these industries (Reason, 1997; Cheyne et al., 1998, 2000) and these employees have high commitment to safety at the workplace (Cheyne et al., 1998 Cooper, 1998). Therefore, these employees have high knowledge and skill to perform the job within high risk working environments.

Management practices are aimed to prevent occupational accidents at work, which is an approach to control the workplace accidents. The concept of employee's commitment at the workplace is widely utilised and have been receiving increasing attention in occupational safety studies. Management and employee's commitment to safety are crucial elements in safety management and accident prevention programmes (Zohar, 1980 Dedobbeleer & Beland, 1991; Cooper, 1998).

A Study by Abd Aziz (2008) among Malaysia railway employees found that employees' safety commitment is multi-dimensional. This study also revealed that safety commitment consists of three dimensions which are priority on safety, safety involvement and safety

compliance. However, the findings from only one research study (i.e., Malaysian Railway) might not be conclusive to apply employees' safety commitment in other industries and population, therefore this study conducted among employees in WASSB Industry would complement and extended the above findings in wider area of applications.

### **2.3.1 Priority on Safety**

There is a direct connection between management practices and employee perceptionx whereby the leaders may influence organizational change by developing relationship with employees and engaging in behavioral practices. Hence, the initial focus of the study is supervisor-employee relationship and how the nature of their relationship and supervisor climate views influence the employee change climate perceptions.

Schnake and Dumler (1987) suggest that social cues from immediate supervisor play a role in influencing employee task related perceptions. It may influence by shared interpretations. Moreover studies by Burke and Litwin (1992) and Bernstein (1987), mention that manager's perceptions of team climate influenced individual employee perceptions.

Other study indicates that the quality relationship between team peers will make the members more apt to engage in behaviors entailing a certain amount of calculated risk and deviation. It means strong supportive nature of teams will contribute a safety net for employees allowing them to engage in change behaviors within their jobs.

Finally, employee development and learning and high level of mutual behavior among peers are partially predicted on the receipt of relevant feedback, resources and task guidance. The combination of these will provide a foundation for personal learning and skill enhancement of team members.

### **2.3.2 Compliance on Safety commitment**

We approach compliance broadly relating to conformity with all requirements, not limited to legal requirements. This includes business best practices, standards for sustainability, operational activities, or self-imposed requirements to target customer types, etc. Managerial attention has focussed increasingly on meeting sustainability standards, one element of the ‘triple bottom line’ of economic, environmental, and social sustainability. Sustainability is founded on organisational ability to balance the short- and long-term needs of stakeholders (direct and indirect) through value-adding goods and services, produced in line with the earth’s carrying capacity, exerting a maximum positive social impact. Consumer sentiment and regulation increasingly identify environmental attributes as not only desirable but required. It is in this context that integration of quality and compliance-

related activities becomes central and motivates our hypothesis that a cross-cutting concept is needed.

### **2.3.3 Involvement on Safety Commitment**

The worker involvement component comprised of positive group norms, personal attitude, personal motivation and continuing participation of workers. Higher levels of worker' motivation towards safety can be strengthened by the degree of their participations in safety-related activities such partaking in activities of the workplace safety committees, reporting and correcting hazards under their operations, analyzing routine hazards within each step of a task or process, etc.

## **2.4 Employee Competency**

Duta and Rafaila (2014) had mentioned that competence belongs to a family of concepts that rapidly enforces itself within a field necessitating a profound analysis. In the field of sciences of education, the notion causes lexical uncertainties and controversies. By “competence“ is named the capacity to select, combine and use adequately, as an integrated and dynamic unit, the knowledge, skills (cognitive, actional, relational) and other attainments (values and attitudes), in order to solve successfully, effectively and efficiently, a certain category of problem situations, in various contexts. This definition can be expressed by the following formula:

A competence is defined in its three dimensions:

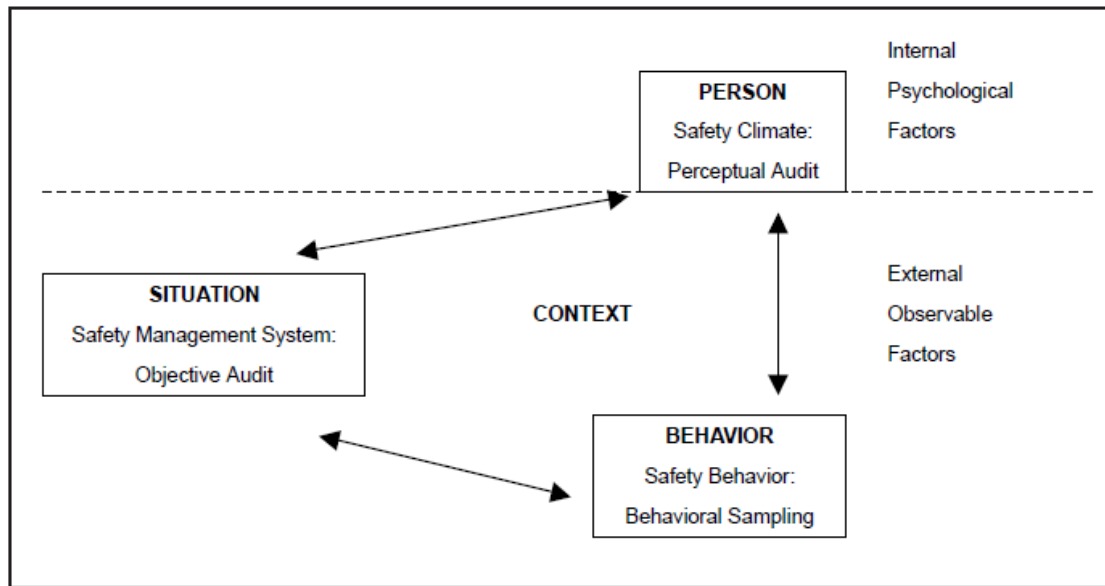
- the cognitive dimension- knowledge;
- the functional-actional dimension – skills; and
- The attitudes-values dimension which is related to the individual autonomy and responsibility in exerting the professional competences.

Duta and Rafaila (2014) has also defined competence represents an integrated and dynamic set of knowledge, skills, values and attitudes, all combining in a strategy for solving problems, anticipating, estimating the probabilities of some events to happen, for diagnosing a situation starting from a set of prior clues. Competence grants efficiency, precision, confidence and allows solving difficult situation in the practice they were developed.

## **2.5 Theory of accident causation**

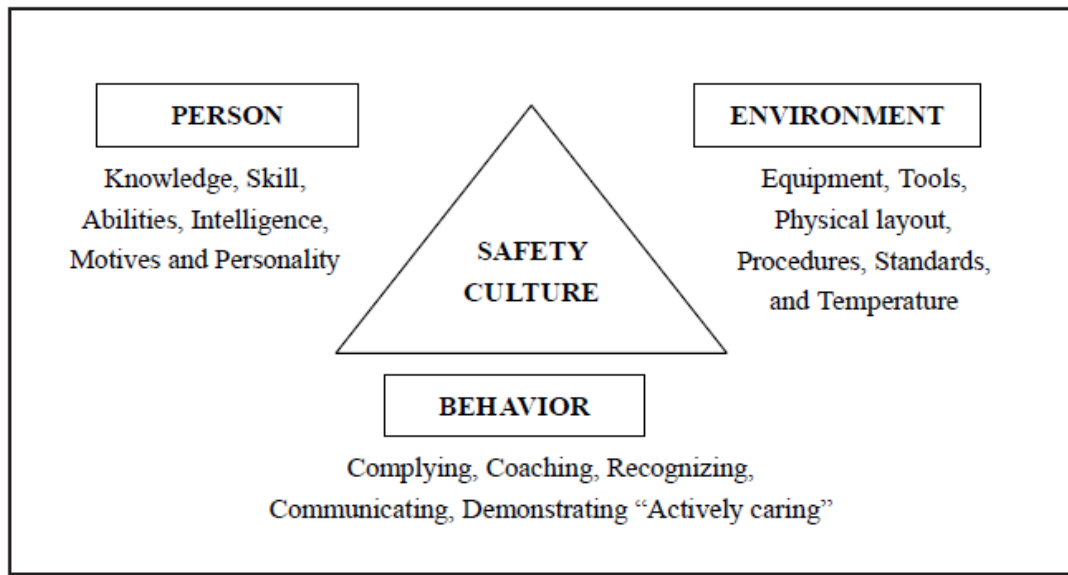
In order to reflect the concept of safety culture, Bandura's model was adapted by Teo and Feng (2008, see Figure 2.1), who suggested that “organizational culture is the product of multiple goal-directed interactions between people (psychological); jobs (behavioral); and the organization (situational)”. In the adapted model by Teo and Feng (Figure 2.1), the internal psychological aspects of safety culture, such as attitudes and perceptions, can be assessed by safety climate questionnaires. The observable behavioral aspects of safety culture can be accessed through peer observations, self-report measures and/or outcome measures; and the objective situational aspects of safety culture, such as safety rules and

procedures, can be accessed through safety management systems audits/inspections (Teo and Feng, 2008).



**Figure 2.1: Safety Culture Model (Adapated from Teo and Feng, 2008)**

The Total Safety Culture model by Teo and Fen (2008) distinguished three dynamic and interactive factors: Person, Behavior, and Environment (Figure 2.1).



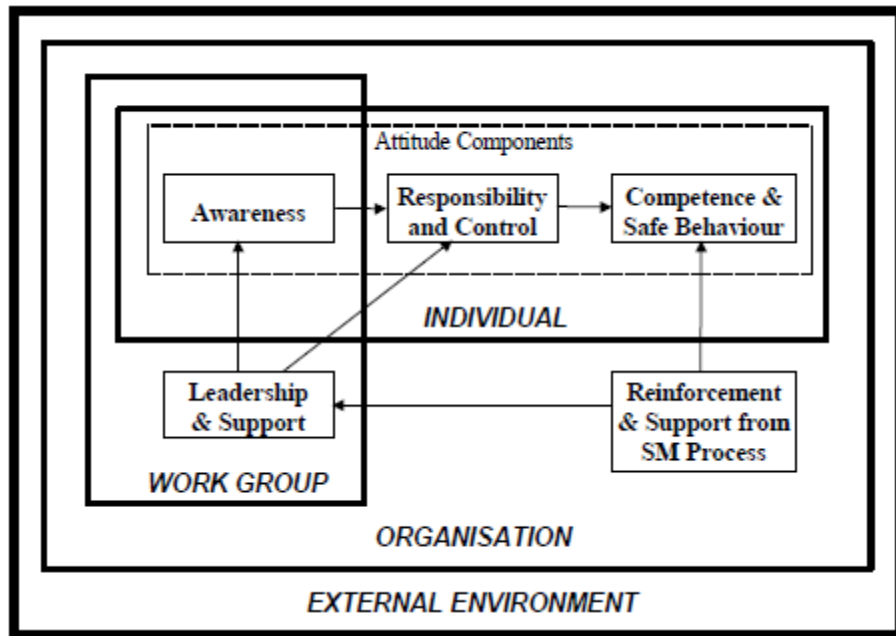
**Figure 2.2: Geller's Total Safety Culture (Adapted from Teo and Feng, 2008)**

Arfanis et al. (2011) stated that there is a broad interest in developing an appropriate safety culture throughout industry in general focused on four key areas:

- the nature of safety culture and safety climate
- the potential of safety climate assessments in securing continuous improvements in health and safety;
- the development of appropriate safety climate indicators and measures;
- the application of practical (and industry specific) methodologies of safety climate assessment (for example, in benchmarking and monitoring).

The model used by Arfanis et al. (2011) is as follows:





**Figure 2.3: A systems Model of Safety Culture (Adapted Arfanis et al., 2011)**

Figure 2.3 illustrates the essence of a systems based model of culture. It shows how individual safety awareness can be promoted within the immediate work group. This awareness, and the work group sub-culture, shapes individual safety beliefs, attitudes and perceptions of responsibility and control. This, in turn, drives the individual's behavior, which is either sanctioned or reinforced (or supported) by the safety management (SM) process.

The model shows that the safety culture control two factors as drawn in this research. The factors include firstly safety responsibilities and control which represent the safety commitment and secondly the safety competency which is being supported by management overall in an organization.

## **CHAPTER 3**

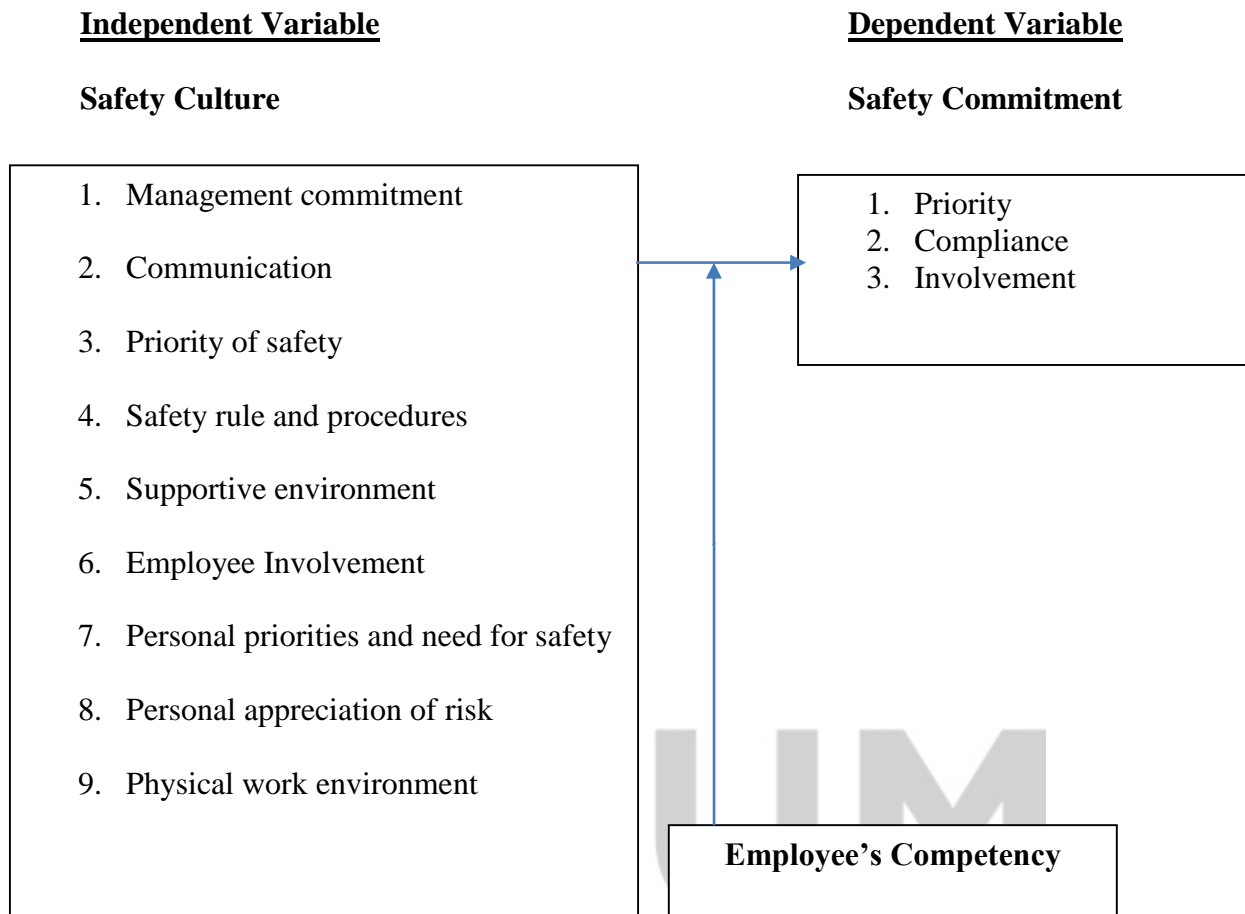
### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter describes the methodology applied for this study, which includes conceptual framework, research design, operational definitions, measurement tool, data collection, sampling technique and data analysis.

#### **3.2 Conceptual Framework**

This study focused on two variables, namely safety culture as an independent variable and safety commitment as a dependent variable. The framework is adapted from Geller's Total Safety Culture model depicted in Figure 2.2. According to this model, total safety culture is attainable when the person, behavior and environment factors are working in harmony in the organization. However, in this study the researchers have developed a conceptual framework that has two variables, namely safety culture of as independent variables and the safety commitment as the dependent variable. The conceptual framework for this study visualized in Figure 3.1 below:



**Figure 3.1 : Research Conceptual Framework**

### **3.3 Research Design**

The most important aspects of this research were the types of investigation, the study setting, the unit of analysis were discussed in this topic. In this study, there were 3 factors had examined, which are; safety culture, safety commitment and employees' competency. The research process will be defining on the problem, reviewing relevant literature, planning a research design, planning a sample, collection data, analysing data, formulating

the conclusions, and preparing report (Zikmund, 2003). Furthermore this study was applied quantitative research design because it is appropriate to what is needed by this study. Based on Creswell (2003) a research is based on quantitative, cross-sectional and survey type due to its economic design and effective completion in collecting the data. In this study the unit analysis was individual, who worked at Weststar Aviation Services Sdn Bhd. The survey was conducted in the field where individuals responding to the questions based on their own experience.

### **3.4 Operational Definition**

In this study, the operational definition of the related variables as below:

#### **Safety culture**

According to (Cooper, 1998), safety culture is defined as a trust, norms and value of the workers and gives priority to practices and organizational security policies.

#### **Safety commitment**

Safety commitment is defined as an individual's identification with an involvement in safety activities, characterized by a strong acceptance of and belief in the organization's safety goals at workplace (Cooper, 1998). It reflects the attitude and behavior toward preventing accidents at workplace. Researchers (e.g. Abd Aziz, 2008) debated that safety commitment is reflected in employees' safety attitudes and behaviors.

## Employees Competency

According to Berge et al, (2001), employee competency is explained in the literature through knowledge, skill and abilities during performing the job.

### 3.4.1 Safety Culture

Culture is a complex construct in organizations, consisting of attitudes, perceptions, values and beliefs, which must necessarily be set in context. Many authors imply that culture is organization-wide and common to all employees. In terms of safety culture, the organizational context may determine its salience and likelihood of averting behavior, especially in a highly regulated environment such as the nuclear industry Harvey et al (2002).

**Table 3.1: Independent Variable in the studies**

Area	Dimension
1.Organisational context	1. Management commitment perception of management's overt commitment to safety and health issues 2. Communication the nature and efficiency of safety and health communication within the organization 3. Priority of safety the relative status of safety 4. Safety rule and procedures views on the efficacy and necessity of rules and procedure

2. Social environment	5. Supportive environment the nature of the social environment at work, and the support derived from it
3. Individual appreciation	6. Involvement-the extent to which safety is a focus for everyone and all are involved 7. Personal priorities and need for safety- the individual's view of their own safety and health management and the need to feel safe 8. Personal appreciation of risk-how individuals view the risk associated with work
4. Work environment	9. Physical work environment- perception of the health issues within the organization

### 3.4.2 Safety Commitment

Safety commitment is important for organizational effectiveness in that it enhances employees' desire to remain in an organization, improves their performance, and stimulates their utmost efforts to accomplish the organization's goals (Srithongrung, 2011).

**Table 3.2: Dependent Variable in the studies**

Area	Dimension
Safety Commitment	1. Priority on Safety Performance 2. Compliance on Safety Performance 3. Involvement on Safety Performance

### 3.4.3 Employee Competency

*Competence* may be defined as a learned ability to adequately perform a task, duty, or role. *Competencies* are conceptualized as the building blocks of effective functioning and are demonstrable capabilities, knowledge, skills or abilities, personal characteristics, attitudes, or a cluster of these attributes that required for effective performance of job tasks, which can be observed and evaluated against standards. Professional competencies have wide appeal as they establish consistent standards of practice across settings, and provide directly observable indicators to assess performance.

### 3.5 Research Instruments

The study is a quantitative study, which involved survey by using questionnaire. Applied quantitative approach was used in collecting data for this study because it is the most suitable due to the economical design in collecting the data (Creswell, 2003; Anderson, Sweeney, & Williams, 2000). In completing this study, questionnaire method is used as well to collect the data and it is the most common method in collecting data (Sekaran, 1992). In this study, there are 3 instruments were applied to measured the safety culture, safety commitment and employees competency. Safety culture was adopted from Loughborough safety climate tools kit which developed by Chyne (1998). Safety commitment instrument was adopted from Abd Aziz (2008) while employees' competency was adopted from The Health and Safety Executive (1999),

In this study, there are five sections developed in this questionnaire with the specific questions to be answered and to test the hypotheses. In section A, demographic questions were included. Thereafter, section B measured safety culture (43 items), section C measured safety commitment (21 items), section D measured employees' competency (4 items). All items were measured using 5-point Likert scale and ranged from "1-strongly disagree" to "5-strongly agree". At the same time, the questionnaire was also translated into Bahasa Malaysia by translator, later on it was finalised by the supervisor for any anomalies that might be found. After it had been edited, it was re-sent to another translator and was translated back into English to assure consistency in language to the extent possible.

### 3.5.1 Instruments of Safety Commitment

The instrument of Safety commitment instrument was adapted from Abd Aziz (2008) the details of safety commitment items statement are listed below:

**Table3.3: Questionnaires on Commitment**

No	Item
1	I would not be worried about the hazard and risk at the workplace
2	I am willing to do extra jobs in order to improve the safety performance at my workplace
3	Employees here are not happy to wear the personal protective equipments



- 4 I really care about the safety procedures and regulations at my workplace
- 5 I am willing to put in great effort to achieve safety goals.
- 6 Near miss accidents are not important in safety records
- 7 I never give cooperation with my supervisor/manager about safety issues
- 8 I would like to obey the safety regulations in order to keep my workplace safe.
- 9 All employees should be actively involved in safety promotion activities
- 10 I would be extremely glad to be a member of safety committee at my workplace
- 11 I would like to be involved in safety discussion at my workplace
- 12 I am ready to involve myself in the organisation safety activities.
- 13 It is very important to work in a safe environment
- 14 I would not feel guilty if I used a “shortcut” while completing my work
- 15 I really would like to take part in occupational safety rules/procedures/reviews
- 16 Safety procedures and regulations reflect the safest technique of doing a job

- 17 I think putting more effort into understanding all safety rules is a waste of time
- 18 It is an employee's duty and responsibility to support and encourage colleagues to obey the safety rules/ procedures / regulations
- 19 I would like to be involved in the safety goals planning at workplace
- 20 I will ensure the risks are assessed before starting my work
- 21 I always ensure that the safety equipment is working properly before I start a job
- 

### **3.5.2 Instruments of Safety Culture**

This instrument was adapted from the safety climate assessment toolkit which had been developed by Loughborough University Business School (2003). Basically this toolkit assessment contains quantitative and qualitative approaches for measuring safety culture of an organization. The quantitative part of safety climate the toolkit contains 43 statement items and one open question. These items explain four areas of the working environment covering nine dimensions of organizational safety. For each of the nine dimensions of the safety climate measurement tool, there is a list of several item statements, which included both positive and negative statements and then were combined and mixed together to become the Loughborough University Business School (2003) safety climate assessment toolkit (SCAT). The details of safety culture items statement are listed below:

**Table 3.4: Questionnaires on Culture**

No	Item
1	Management operates an open door policy on safety issues
2	Safety is the number one priority in my mind when completing a job
3	Co-workers often give tips to each other on how to work safely
4	Safety rules and procedures are carefully followed
5	Management clearly considers the safety of employees of great importance
6	I am sure it is only a matter of time before I am involved in an accident
7	Sometimes I am not given enough time to get the job done safely
8	I am involved in informing management of important safety issues
9	Management acts decisively when a safety concern is raised
10	There is good communication here about safety issues which affect me
11	I understand the safety rules for my job
12	It is important to me that there is a continuing emphasis on safety
13	I am involved with safety issues at work
14	This is safer place to work than other companies I have worked for
15	I am strongly encouraged to report unsafe conditions
16	In my workplace management turns a blind eye to safety issues
17	Some safety rules and procedures do not need to be followed to get the job done safely

- 18 I am rarely worried about being injured on the job
- 19 Management acts only after accidents have occurred
- 20 I believe that safety issues are not assigned a high priority
- 21 Some health and safety rules and procedures are not really practical
- 22 Employees are not encouraged to raise safety concerns
- 23 Personally I feel that safety issues are not the most important aspect  
of my job
- 24 In my workplace the chances of being involved in an accident are  
quite large
- 25 I do not receive praise for working safely
- 26 Corrective action is always taken when management is told about  
unsafe practices
- 27 Operational targets often conflict with safety measures
- 28 My line manager/supervisor always inform me of current concerns  
and issues
- 29 I can influence health and safety performance here
- 30 Sometimes conditions here hinder my ability to work safely
- 31 Safety information is always brought to my attention by my line  
manager/supervisor
- 32 When people ignore safety procedures here, I feel it is none of my  
business
- 33 In my workplace management acts quickly to correct safety problems

- 34 I am clear about what my responsibilities are for health and safety
- 35 Sometimes it is necessary to depart from safety requirements for  
operation's sake
- 36 A safe place to work has a lot of personal meaning to me
- 37 There are always enough people available to get the job done safely.
- 38 In my workplace managers/supervisors show interest in my safety
- 39 I am never involved in the ongoing review of safety
- 40 Management clearly considers safety to be equally as important as  
operation
- 41 A no-blame approach is used to persuade people acting unsafely that  
their behaviour is inappropriate
- 42 Management and supervisors express concern if safety procedures are  
not adhered to
- 43 I cannot always get the equipments I need to do the job safely

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For the safety culture questions was developed in order to test and measure the worker perception on safety in their workplace. The rating used was the five pointed Likert scale rating which was rated from 1 (strongly disagree) to 5 (strongly agree). The questionnaire was prepared in Bahasa Malaysia to provide the better understanding to the respondent during filling up the questions.

### 3.5.3 Instruments of Employee Competency

The questionnaire on competency is shown in Table 3.5.

**Table 3.5: Questionnaires on Competency**

No	Item
1	I fully understand the health and safety risks associated with the work for which I am responsible
2	I fully understand the safety procedure/instruction associated with my job
3	The employees understand the nature of all hazards they are likely to encounter during their work
4	Sometimes I am uncertain what to do to ensure safety in the work that I am responsible for

### 3.5.4 Data Collection by Survey

This study used a questionnaire which is divided into five parts. Further details regarding the items in the questionnaire are based on Table 3.6.

**Table 3.6 Items in the Survey Feedback Form**

Section	Variable	No. Of items
1.0	Demography	5
2.0	Organization Information	5
3.0	Safety Culture	43
4.0	Safety Commitment	21
5.0	Employee Competency	4
<b>Total</b>		<b>79</b>

This study has used the Likert scale (Likert Scale) to the position of a scale ranging from 1 to 5 Likert scale is used because researchers wanted to give freedom to the respondents to answer questions with more precision than using a closed question.

While answering the questionnaire, respondents were asked to answer all the questions based on their degree of agreement. Examples of position scale are as shown in Figure 3.2.

1	2	3	4	5
Strongly	Disagree	Neither	Agree	Strongly
Disagree		Agree nor		Agree
		Disagree		

**Figure 3.2: Likert Rating Scale**

### 3.6 Population and Sampling

The population for this study is to involve employees in the Weststar Aviation Services Sdn Bhd, Kota Bharu permanent status and contracts consisting of 232 workers. According to the schedule Krejcie and Morgan (1970), the minimum number of samples required by the researchers in this study was 140 people. However, researchers face a problem in getting a proper number of respondents. The problem for the recovery of this questionnaire is caused by not getting full cooperation of respondent. Table 3.7 shows the number of questionnaires that have been distributed and the number of recoveries questionnaires received by the researcher.

**Table 3.7 Number of Survey Feedback Form Distributed and Collected**

SITUATION	TOTAL
Number of distribution	200
Number of Collection	150

### 3.7 Data Collection

Researchers have begun distributing questionnaires began on 1<sup>st</sup> November, 2015 and the process of collection of questionnaires began on 14<sup>th</sup> November 2015, namely after 2



weeks. A total of 200 questionnaires were distributed to respondents, and 150 questionnaires were returned on 14<sup>th</sup> November 2015.

Of the process of updating the form, found as many as questionnaires were completed and are eligible for admission as data for this study. The total rate of return received data collection is as much as 75 percent.

### **3.8 Pilot Test and Reliability Test**

A pilot study was conducted by researchers before the exact research. The pilot study involved 50 respondents who are employees at the WASSB. The raw data obtained from this pilot study were analyzed using Statistical Package for Social Sciences (SPSS) version 22.0. The aim of this pilot study was to analyze the reliability of the instruments used in this survey form. Moreover, the purpose of this pilot study was to evaluate and see whether respondents can understand clearly each of the questions.

Instrument reliability refers to the ability of the instrument to obtain a consistent and stable measurement. These measurements can be made as a result of internal consistency measured using Cronbach's alpha. Cronbach's alpha showed a positive relationship for each item. Reliability is described by the coefficient of reliability (alpha) that is between 0.00 to 1.00. The higher the coefficient alpha is the better the test. According Zickmund (2010), the Cronbach's Alpha received is greater than 0.65.

**Table 3.8: Reliability of Research items**

	<b>No. of Item</b>	<b>Cronbach's Alpha</b>
<b>Measurement</b>		
Safety Culture	43	0.857
Safety Commitment	22	0.781
Employee Competency	4	0.829

### **3.9 Data Analysis**

In this study, researchers have used the Statistical Package for Social Sciences (SPSS) version 22.0 in the process of analyzing the data collected. The data will include several activities such as organizing, selecting, combining and tabulate the data collected during the study. Two analyzes were used in this study is analysis descriptive and inferential analysis.

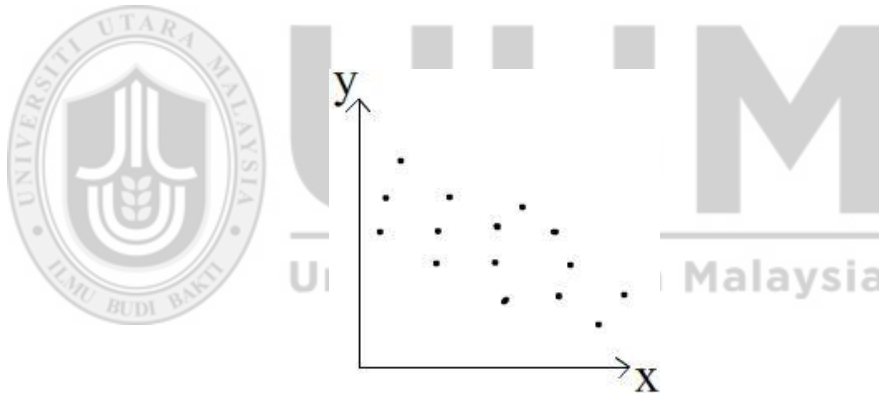
For the descriptive analysis, it was done for the purpose of explaining the nature of the data obtained. For example, is to get the distribution of the survey respondents and also for calculating the average score for each item used. Statistical calculations involved are covering frequency, mean and standard deviation values.

However, inspection data (data screening) should be done to ensure that data is used is clean and no foreign data is used.

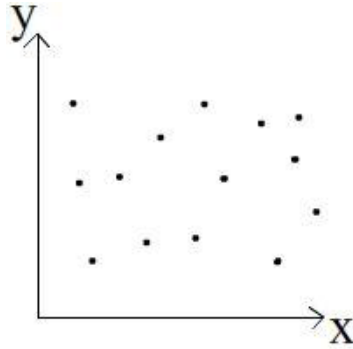
If we consider a pair of such variables, it is frequently of interest to establish if there is a relationship between the two; i.e. to see if they are *correlated*. We can categorise the type of correlation by considering as one variable increases what happens to the other variable:

- *Positive correlation* – the other variable has a tendency to also increase;
- *Negative correlation* – the other variable has a tendency to decrease;
- *No correlation* – the other variable does not tend to either increase or decrease.

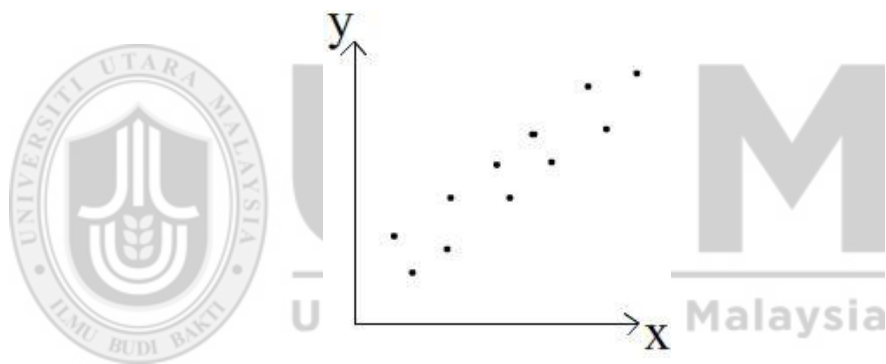
The starting point of any such analysis should thus be the construction and subsequent examination of a *scatter plot*. Examples of negative, no and positive correlation are as follows.



**Figure 3.3 : Negative Correlations**



**Figure 3.4: No Correlations**



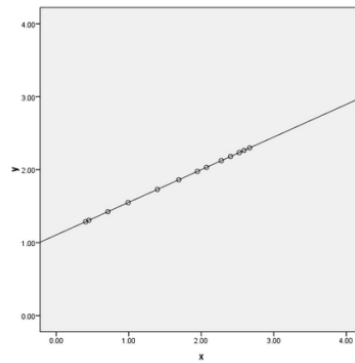
**Figure 3.5: Positive Correlations**

Pearson's correlation coefficient is a statistical measure of the strength of a *linear* relationship between paired data. In a sample it is denoted by  $r$  and is by design constrained as follows

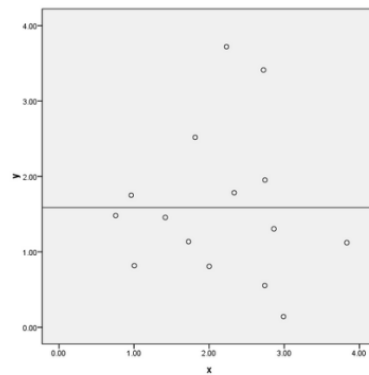
Furthermore:

- Positive values denote positive linear correlation;
- Negative values denote negative linear correlation;
- A value of 0 denotes no linear correlation;

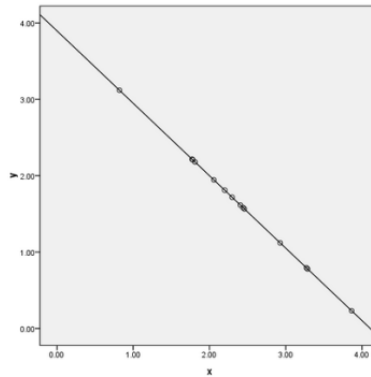
- The closer the value is to 1 or  $-1$ , the stronger the linear correlation.



**Figure 3.6:  $r = 1$ ; Perfect Positive Correlation**



**Figure 3.7:  $r = 0$ ; No Correlation**



**Figure 3.8:  $r = -1$ ; Perfect Negative Correlation**

Correlation is an effect size so that it can describe the strength of the correlation based on Wiersma (1998):

- 0.00 – 0.19 : Very Weak
- 0.20 – 0.39 : Weak
- 0.40 – 0.59 : Moderate
- 0.60 – 0.79 : Strong
- 0.80 – 1.00: Very Strong

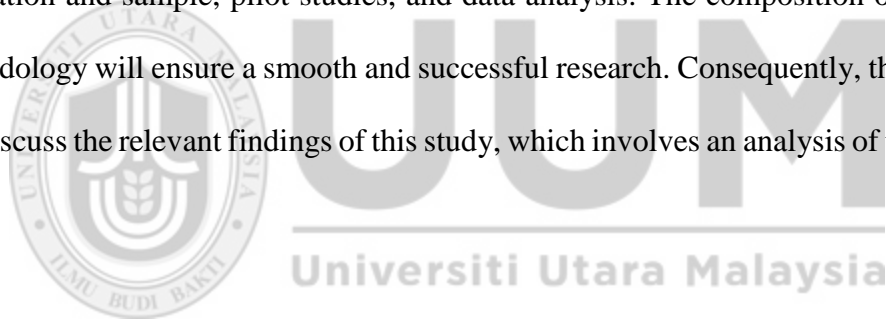
For example a correlation value of  $r = 0.42$  would be a “moderate positive correlation”.

### **3.9.1 Data Screening**

The purpose of this inspection is carried out to ensure that no extraneous data, or data that is not included and logic used during data analysis. In addition, the codes are invalid, for example as a magnitude 8 will be detected.

### **3.10 Summary**

This chapter discusses the research methodology that was used by the researchers in the study carried out; it covers the design of the study, instrumentations and variables, population and sample, pilot studies, and data analysis. The composition of a systematic methodology will ensure a smooth and successful research. Consequently, the next chapter will discuss the relevant findings of this study, which involves an analysis of the descriptive data.



## CHAPTER IV

### RESULTS AND ANALYSIS

#### 4.1 Introduction

This chapter discusses the findings of from the data collected through the survey. The questionnaire was distributed and collected from WASSB staff (140 respondents). All data were analysed using Statistical Package for Social Science (SPSS) version 22 to perform the statistical analysis. The data collected were examined with descriptive frequency analysis for demographic details of respondent. The analysis proceeds with reliability analysis, descriptive statistic of variables.

#### 4.2 Response Rate

There were a total of 200 questionnaires distributed to staffs of WASSB. The complete questionnaire was returned total 150. Thus, the total response rate for this research was 75%. However the complete (reliable) only 70%, the details of data collection and the response rate are explained the table below:



**Table 4.1: Response Rate**

No.	Status	No. of Survey	Percentage
1	Total Distributed	200	100
2	Collected	150	75
3	Not Collected	50	25
3	Reliable	140	70
4	Unreliable	10	5

Table 4.1 shows that the details about response rate about the study survey. The completed questionnaire was 70%, thus this number was applied for data analysis.

### 4.3 Profile of Respondents

This survey consist of 120 male respondents or 85.7% while the female constitutes 20 which reflects about 14.3% of the respondents. The details are explained by Table 4.2 below.

**Table 4.2: Distribution of sample based on Gender**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	120	85.7	85.7	85.7
	Female	20	14.3	14.3	100.0
	Total	140	100.0	100.0	

In this study, the respondent's age are explained by table 4.3 below. The minimum age of respondents is less than 20 years while the maximum age of respondents is more than 51 years.

**Table 4.3: Distribution of sample based on Age**

	Frequency	Percent	Valid Percent	Cumulative Percent
< 20 Years	10	7.1	7.1	7.1
21 - 30 Years	64	45.7	45.7	52.9
31 - 40 Years	42	30.0	30.0	82.9
41 - 50 Years	14	10.0	10.0	92.9
51 - 60 Years	10	7.1	7.1	100.0
Total	140	100.0	100.0	

Table 4.3 indicates that the majority of age fell on 21 to 30 years old which is 45.7% in Weststar Aviation Services Sdn Bhd. The experience respondents at age more than 50 years old are only about 7.1% from the respondents.

Table 4.4 shows descriptive with respect to status of respondents, the study revealed that more respondents were married with a frequency of 102 which covers 72.9% of the population, while the least in terms of status was widowers with a frequency 14 which reflects about 10% of the respondents.

**Table 4.4: Distribution of sample based on Status**

	Frequency	Percent	Valid Percent	Cumulative Percent
Single	24	17.1	17.1	17.1
Married	102	72.9	72.9	90.0
Widower	14	10.0	10.0	100.0
Total	140	100.0	100.0	

Table 4.4 indicates that 72.9% are married, 17.1% are single and 10% are widower.

This study revealed that the highest academic achievement by respondent is Degree while the lowest is MCE (SPM) the result of descriptive for education level is depicted in table 4.5 below.

**Table 4.5: Distribution of sample based on Education**

	Frequency	Percent	Valid Percent	Cumulative Percent
Primary School	18	12.9	12.9	12.9
SRP/SPM	74	52.9	52.9	65.7
STPM	10	7.1	7.1	72.9
Degree or equivalent	14	10.0	10.0	82.9
Other	24	17.1	17.1	100.0
Total	140	100.0	100.0	

Table 4.5 indicates the education background of the respondents and the majority is holding SRP or SPM certificate that is about 52.9%. The others contribute about 10% which is the license engineer.

The descriptive statistics shows the various departments in WASSB involve in this study. Most respondents were flight operation with a frequency of 64 or 45.7%. The table below further depicts the details of the respondents department of the study.

**Table 4.6: Distribution of sample based on Department**

	Frequency	Percent	Valid Percent	Cumulative Percent
Human Resource	10	7.1	7.1	7.1
Administration	28	20.0	20.0	27.1
Flight Operation	64	45.7	45.7	72.9
Engineer	38	27.1	27.1	100.0
Total	140	100.0	100.0	

Table 4.6 indicates that the department that the sample working from. Majority of the respondents are flight operator which is about 45.7%.

Based on job category, descriptive statistics reveals that the highest number were technical executive with a frequency of 60 which reflects 42.9% of the total respondents while top management (technical) and executive (management) were least with a frequency of 10 and 7.1% respectively.

**Table 4.7: Distribution of sample based on Job Category**

	Frequency	Percent	Valid Percent	Cumulative Percent
Top Management	14	10.0	10.0	10.0
Top Management (Technical)	10	7.1	7.1	17.1
Executive (Management)	10	7.1	7.1	24.3
Executive (Technical)	60	42.9	42.9	67.1
Non-executive Management	10	7.1	7.1	74.3
Non-executive Technical	36	25.7	25.7	100.0
Total	140	100.0	100.0	

Table 4.7 indicates that 42.9% of the samples are executive technical and the second highest is the non-executive technical about 25.7% of the sample.

A one-way Anova had been tested on the six different groups of the respondents on job categories. The test was to investigate if there is a significant different on the group mean on the measured dimensions of safety culture, commitment and competency. Table 4.8 showed the outcome of the test.

**Table 4.8: ANOVA (Job Categories)**

		Sum of Squares	df	Mean Square	F	Sig.
Safety Culture	Between Groups	2.233	5	.447	58.012	.000
	Within Groups	1.032	134	.008		
	Total	3.265	139			
Safety Commitment	Between Groups	8.961	5	1.792	20.098	.000
	Within Groups	11.950	134	.089		
	Total	20.911	139			
Employee Competency	Between Groups	6.111	5	1.222	30.396	.000
	Within Groups	5.388	134	.040		
	Total	11.498	139			

Table 4.8 clearly showed that all groups had different perception and expectation on the safety culture, commitment and competency. This can be viewed at significant value of all dimensions at 5% significant level, therefore all job categories mean are significantly different from each other.

Table 4.9 shows descriptive for employment status, results shows that permanent employees where maximum at a frequency of 70 and 50% of the total respondents, however results revealed that contract staff were the least at a frequency of 24 occupying 17.1% of the respondents

**Table 4.9: Distribution of sample based on employment status**

	Frequency	Percent	Valid Percent	Cumulative Percent
Permanent	70	50.0	50.0	50.0
Contract	24	17.1	17.1	67.1
Temporary	46	32.9	32.9	100.0
Total	140	100.0	100.0	

Table 4.9 indicates that 50% is permanent staff, 17.1% is contract staff and 32.9% is temporary staff.

#### 4.4 Reliability Analysis

The reliable test was tested on 10 respondents. The pilot test was conducted on the 27<sup>th</sup> September 2015. The outcome is shown in Table 4.10 safety culture items, Table 4.11 safety commitment items and Table 4.12 safety competency items.

**Table 4.10:  $\alpha$ -Cronbach for safety culture**

Reliability Statistics	
Cronbach's	
Alpha	N of Items

0.857	43
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Table 4.10 indicates the reliability test for all safety culture items which is the  $\alpha$ -Cronbach is 0.857.

**Table 4.11:  $\alpha$ -Cronbach for safety commitment**

Reliability Statistics	
Cronbach's	
Alpha	N of Items
0.781	21

Table 4.11 indicates the reliability test for all safety commitment items which is the  $\alpha$ -Cronbach is 0.781.

**Table 4.12:  $\alpha$ -Cronbach for employee competency**

Reliability Statistics	
Cronbach's	
Alpha	N of Items
0.829	4

Table 4.12 indicates the reliability test for all employee competence items which is the  $\alpha$ -Cronbach is 0.829.

A pilot test will be conducted to measure  $\alpha$ -Cronbach.

Cronbach's basic equation for alpha

$$\alpha = \frac{n}{n-1} \left( 1 - \frac{\sum Vi}{V_{test}} \right)$$

- n = number of questions
- Vi = variance of scores on each question
- Vtest = total variance of overall scores (not %'s) on the entire test

In this research the  $\alpha$ -Cronbach will not be calculated manually but being analyzed and auto calculation by SPSS. Alpha was developed by Lee Cronbach in 1951 to provide a measure of the internal consistency of a test or scale; it is expressed as a number between 0 and 1. Internal consistency describes the extent to which all the items in a test measure the same concept or construct and hence it is connected to the inter-relatedness of the items within the test. Internal consistency should be determined before a test can be employed for research or examination purposes to ensure validity.

If the items in a test are correlated to each other, the value of alpha is increased. However, a high coefficient alpha does not always mean a high degree of internal consistency. As pointed out earlier, the number of test items, item interrelatedness and dimensionality affect the value of alpha. There are different reports about the acceptable values of alpha, ranging from **0.70 to 0.95**. A low value of alpha could be due to a low number of questions, poor interrelatedness between items or heterogeneous constructs (Wiersma, 1998).



All dimensions show that  $\alpha$ -Cronbach which is greater than 0.7 therefore the items in the survey can be used on the real sample for the research. The survey is said to be strongly reliable.

#### 4.5 Statistics of Variables

The statistics of variables can be divided into three parts; the first will be on the safety culture, secondly will be on the safety commitment and finally on the employee competence. The measurement of the variables are from the survey are analyzed.

The response from the respondent based on survey question is shown in Table 4.13 below:

**Table 4.13: Means of the response based on variables**

No.	Variable	Mean	Percentage
1	Safety Culture	3.31	66.2
2	Safety Commitment	3.19	63.8
3	Employee Competency	3.81	76.2

Table 4.13 shows that for safety culture and safety commitment the mean of all respondents on all the 43 and 21 items is 3.31 and 3.19 respectively showing that the response is moderately high in level. However the mean for employee competency of all respondents on all the 4 items is 3.81 showing that the response is high.

## 4.6 Correlation Test

The relationship between safety culture and commitment had been analyzed by using Pearson's Correlation ( $r$ ). Table 4.14 shows the correlation between both dimensions that had been tested.

**Table 4.14: Correlation**

		Safety Culture	Safety Commitment
Safety Culture	Pearson Correlation	1	.664**
	Sig. (2-tailed)		.000
	N	140	140
Safety Commitment	Pearson Correlation	.664**	1
	Sig. (2-tailed)	.000	
	N	140	140

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

Table 4.14 show that the correlation between safety culture and commitment is significant at 5% level and this indicates that there is a relationship between safety culture and safety commitment. The correlation is strong at  $r$  value of 0.664.

## 4.7 Summary

In this chapter the analysis of data will be used in order to make conclusion and recommendation based on the research objective and research questions. In this chapter it has been shown that the response rate from the respondents is 75% from the total 200

number of survey that has been delivered. Therefore the data analysis was based on 140 respondents.

The reliability test was conducted by using SPSS under scale and reliability analysis. The reliability test is to find  $\alpha$ -Cronbach. The total number of pilot test sampling is 10 respondents. The  $\alpha$ -Cronbach for safety culture questionnaire is 0.857, for safety commitment questionnaire is 0.781 and for safety competency questionnaire is 0.829 which indicates that the reliability of the questionnaires is very strong. Therefore it survey can be used for the real survey that need to be conducted on the 200 respondents.

The objective 1 which is to access the level of safety culture among staff in WASSB Kota Bharu will be concluded in chapter 5 by abstracting information from questionnaires 1 to 43. The objective 2 which is to access the safety commitment among staff in WASSB Kota Bharu, the data analysis from all questionnaires from 1 to 21 will be summed up to make conclusion about the commitment.

The objective 3 which is to determine the relationship between safety culture and safety commitment among staff in WASSB Kota Bharu, the data analyzed from objective 1 and 2 will be used in chapter 5 in order to determine the relationship.

## **CHAPTER V**

### **CONCLUSION AND RECOMMENDATION**

#### **5.1 Introduction**

The objective of this study is to examine the relationship between safety culture and safety commitment among staff at Weststar Aviation Services in Kota Bharu. The commitment of the organization is shown by allocating financial and manpower resources to promote safety culture. On top of that, the management provides reward and recognition to enhance safety commitment among employees. The employees will be rewarded for the highest numbers and qualities of safety reports submitted every month. Routine internal audit is performed to identify weaknesses in safety management system and implement measures to resolve safety issues. Nevertheless, safety commitment among staff is below satisfactory in the eyes of management. Therefore further effort to reach competitive level in safety performance is highly recommended.

The finding of this study was significant because most of the WASSB staff is locals who had practically not been exposed with safety in their job prior to joining WASSB. Thus, safety culture in this organization is at the infant stage. Meanwhile, the clients who engaged WASSB demanded for a high level of safety standards to meet their clients' requirements. Continuous assessment and improvement of competency programs are therefore imperative to generate a pool of highly competent employees to operate the facilities.

Apparently the literature review revealed that most of previous studies on safety culture and safety commitment focused on organizations and employees as the main respondents. There had been a little discussion about specific characteristic of employees' towards safety commitment been published. In addition, the issue on their competency during performing their job was also not detailed discussed. Therefore, it was a compelling urge to examine the safety commitment among the employee's in aviation industries in Malaysia. The outcomes of this study could assist the management to improve its safety performance by enhancing the safety programme, rewards, recognitions and activities.

Employee's safety commitment at workplace is a crucial element in organizational behavior. It reflects the employees' attitudes and behavior toward preventing accident at workplace. The worker involvement component comprised of positive group norms, personal attitude, personal motivation and continuing participation of workers. Accordingly, workers' safety attitude can be shaped by norms of peer groups and can be directed by individual motivation. Higher levels of worker' motivation towards safety can be strengthened by the degree of their participations in safety-related activities such partaking in activities of the workplace safety committees, reporting and correcting hazards under their operations, analyzing routine hazards within each step of a task or process, etc. . The independent variable was safety culture and safety commitment was dependent variables. While the employees' competency as the moderating variables. The quantitative approach was applied in this study, which involved 200 respondents among the WASSB employee at Kota Bharu. Random sampling was applied for data collection process.

It can be concluded that the individual knowledge, skill and abilities strong influenced safety commitment during performance the job at the workplace. Furthermore, the employees fully comply with safety rules and safe operating procedures are viable by changing the attitude towards safety. Similarly, active self-participation in safety programs organized by the employers shall be possible with positive look about the important of safety at the workplace.

## **5.2 Discussion on the Findings towards Research Objectives**

The results of the analysis supported all the dimensions and therefore fulfilled the objectives of this study. Safety commitment and employees' competency were all have positive relationship with safety culture. Among the three antecedents used in this study, safety commitment appeared to have the strongest influence on safety culture, followed by employee competency.

This is a clear indication that elements of commitment are a significant role in determining the safety culture among staff while conveying their daily duties safely. The elements were management commitment, safety training, safety promotion and communication, safety rules and procedures and policies, priority of safety, supportive environment, involvement, personal priorities and need for safety, personal appreciation of risk, physical work environment and just and fair culture. However, this aspect is almost neglected by many organizations in providing solution to occupational incidents or accidents and as well to

bring them to as low as reasonable as practicable. It would definitely have a great impact on safety commitment if these elements were taken seriously by the manager and top management.

The findings also fulfilled the objectives that there is a moderating effect of employee competency in the relationship between safety culture and safety commitment. Though partially moderated, this finding means that safety programme plays the crucial role to improve employees' safety commitment by enhanced theirs' understanding towards safety goals. Highly motivated staff influenced by good safety culture and safety commitment. Both of these antecedents are interlinked and together forced or motivated employees to achieve safety performance. Furthermore, motivation to work safely is the key driver for the employees to perform work safely. It was explained that this driver is originated from the regulatory requirements and organizational safety goals mandating compliance from the employees. The number of incidents and accidents rate which involve property, injury to personnel and damage to environmental need to reach at lowest as possible. Accountable and responsible manager should have access to provide sufficient resources as to meet the intended objective. If the manager thing that to compliment the ultimate safety is an expensive cost than they could try an accident to occur than the cost impact is much greater.

The study finding revealed that safety culture related to method of work will contribute to an organization as no blame culture when it involve to mitigate hazards in the workplace by participating in reporting any unsafe act, unsafe conditions and a near misses situations.

This conducive environment was practiced at Weststar Aviations Services since the day one of the operations. Proven to manage good safety records. Beside good safety culture by rewards and recognitions from management and the safety department will generate promptly and highly committed towards hazards report and as well mitigation actions.

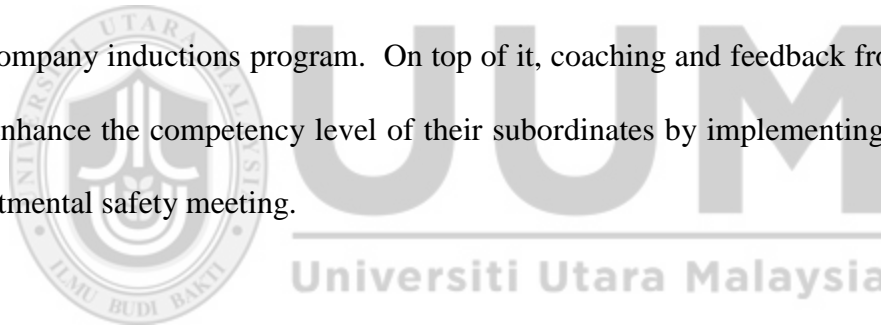
The staff in Weststar Aviation Services definitely will find very much satisfied with their daily work when safety culture a good communications towards mitigating hazards in place. Communication among staff is also importance as to generate conducive environment at work which these lead to ultimate work satisfactions. In the organization, total management commitment in implementing safety is the assurance to motivate staff towards positive and proactive safety culture.

### **5.3 Implications to managers and organizations**

The results of this study have several practical implications. In term of personality, the findings suggest that the employees who are low on competency may be trained to adopt certain skill to be alert and more confident. Employees' characteristics should be taken into account during safety training need analysis developments. Furthermore, the training has to be associated with adequate motivation to improve themselves. Besides sending them for formal training, managers or immediate supervisors shall play their role to help their subordinates to achieve challenging goals and at the same time overcome obstacles. Individual coaching and positive feedback rather than emphasizing punishment should help employees to enjoy their work more and hopefully improve their commitment in safety.



The employees must have a basic knowledge about hazards identification, risk assessment and risk control (HIRARC). They also need to be exposed with hands-on experience while they were in college or just about to enroll in the organization. This can be accomplished by internship programs, industrial training programs, site visits, inductions or safety awareness program. WASSB have to prepare the long term planning as to establish a competent workforce. It has to start from recruitment process and the development shall continue from day one until the employees decide to leave or retired from the company. The employers have to establish safety mandatory training where it is applicable for all staff. As an example, hazard identification and risk assessment training, shall be part of mandatory safety trainings which is to be incurred during first day safety for awareness and company inductions program. On top of it, coaching and feedback from supervisors will enhance the competency level of their subordinates by implementing tools box and departmental safety meeting.



The result of this study also suggests that safety motivation drives safety commitment at the workplaces. The primary motivator is to leave the workplace at the end of the day as healthy as when leaving the house for work in the morning. To live with this notion, a person needs adequate knowledge about the job and the risks associated with it. Not only that, a person needs to mitigate those risks to as low as reasonable and practicable. In any case of emergency, this person needs to know how to respond and protect himself against the danger. The widely used method for motivating the individuals is by using the reward

and punishment method or carrot and stick technique. Rewarding someone for safety performance encourages a person to continue the good deeds and sets the role model for colleagues to act in similar manner. The method of “obey me or you will be punished works because of fear. Ideally, safety commitment and safety competency was the best motivator for individual commitment during performing the safety culture

The manager should be able to translate safety policy and manual in workplace to their staff. The safety manual and safety policy are not promoting dual languages (Malay and English) as such majority of the Weststar Aviation Services Staff which is a local resident on top of rarely fluent in English languages. The desire to read and as to made understand the content are ignored. To encourage each and every staff to get involve in safety activity which most of the activities which require ultimate commitment and sacrifice.

The purpose of the research is to determine the relationship between safety culture and safety commitment. Table 3.11 shows that Pearson's Correlation  $r$  is significant at 5% level with  $r$  value 0.664. This shows that the relationship between safety culture and safety commitment is moderately strong. As a conclusion, that can be made here is that the safety culture is needed more to be promoted at Weststar Aviation services at Kota Bharu so that the staff will be more safety committed to their organization and self.

#### **5.4 Implication for future research**

The safety culture model should be applicable to various work setting and industries because the variability of working conditions and the workers. The variation may be in

the form of risks, working environment, specific group of employees and job performance assessment. As an example, it is a known fact that the other airlines employ foreign workers whose safety conscious might not be as good as locals. Therefore future research should examine the safety culture in these areas and compare with the findings of this study.

The future research should consider supporting the survey data by safety observation using behavioral checklist and safety records as part of safety commitment. However, the safety observation must be conducted with the intention to reinforce safe behavior and correct the unsafe act on the spot. It should not be used to reprimand employees for safety violations. The safety records would be the records of the individual violations of safety rules. When comparing with the survey data, the observation method and individual safety records should provide a strong support for the actual individual safety commitment.

### **5.5 Limitation of the study**

Several limitations of this study were noted. This study used self-administered questionnaires as a primary tool to collect the data from the respondents. These measurement tools can be viewed as limitation because self-administered questionnaires may raise the tendency of single-source bias. It is understood that majority of the respondents like to show their good safety commitment in responding to the surveys. This might lead to a wrong conclusion, assuming the responses represent the true picture of their safety performance at the workplace.

The scope of this study is limited to the selected safety culture and its relationship with safety commitment. Safety culture was discussed in the context of fulfilling the obligation of the regulation imposed by the organizations and the government. In addition, employees' competency was discussed in term of education background and the knowledge about the safety at work. This is a limitation because competency covers the breadth and depth of the overall work scope in which safety is a part of it. Other limitation is the sample size which is only two hundred samples. For the results to be more accurate, it should involved larger sample groups. The findings from the larger sample size group will helps to provide the stability and better representation of the study to the whole population. Besides that, the data obtained from the study is only applicable for safety situation in aviation only. It only can be used to measure the perception of staff towards safety culture and commitment, and may not be used for other research involving other safety research that is not with the same nature and environment from Weststar Aviations Services Sdn Bhd.

## **5.6 Conclusion**

This research provided significant contributions to the academy and safety practitioners. This study revealed that safety commitment and employees' competency were all have positive relationship with safety culture. These findings may be used to enhance management's and human resource manager to understand the specific characteristic employees' safety commitment and how it can be influenced. This research also provides

a foundation for future research to extend the study on safety commitment by covering wider range of employees' characteristic and in different dimensions.

Employees are important asset to the organization, therefore it is imperative that the employers have clear understanding of the best strategy to win the employees to engage and involve in accident prevention programme. This is the best approach for employees' safety commitment improvement. The focus should be on developing competencies while at the same time motivating them to realize the important of safety commitment. The strategy should be communicated efficiently and then employees' safety commitment review should be regularly conducted to assess and to take corrective actions when necessary.

The research shows that the safety culture perceptions of Weststar Aviation Services staff are at level 3.31 (66.2%) moderately. It shows high that safety culture is important aspect to prevent accidents at the workplace. Majority of respondents were strongly disagreed on the fact that safety culture is not seriously communicated at this site and also they disagreed with the statement that they refuse to comply to safety rules and regulations. It is proven that with the way they work and practice, positive safety culture yields reduction in accident rates. The response from respondents were moderately high due to different perception on safety culture as shown and explained by Table 4.8 during T-test Anova which was significantly different between job categories probably due mediator variable on employee competency. The safety culture can be enhanced by hiring and developing

competent employees... Therefore the safety culture can be further improved by conducting sustainable awareness programs, enforcement, training and effective communication.

The study also shows that majority of respondents moderately agreed at 3.19 levels or at 63.8% that safety commitment is crucial in order to ensure continuous safety in place. They are also strongly disagreed on the lacking of safety commitment on particular safety issues. However, Weststar Aviation Services is committed to further promote the understanding on safe working environment, participations on safety, safety committee, safety activity and comply to safety rules and regulations. The T-test Anova had shown a significant different on the mean between the six job categories measured. Therefore they were having different perception and expectation on the safety commitment. The safety commitment is said to be dependent to safety culture and being mediated by employee competency. The safety commitment can be enhanced in WASSB if the safety culture can be improved aggressively through training, awareness, enforcement and availability of SOP manuals.

The employee competency was at 3.81 levels or at 76.2%. This showed that the competency of WASSB staff were high. The competency is high which shows that the staffs were well trained and being supported by management. However the safety culture and commitment were moderately high probably due to the fact that the implementation of safety management system was just recently at WASSB. The research can be repeated in the future after 6 to 12 months cycle after implementation of the safety management

system. The results can be different if the factors on safety culture can be enhanced through training and awareness programs.



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