

# A Study on Safety Behaviour in Selected Glove Production Company

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## **Abstract**

*This study was conducted to investigate the correlation between safety climate practices namely management commitment, safety training, workers' involvement in safety, which serve as independent variables to the compliance to safety behaviour namely safety compliance and safety participation as the dependent variable. In this study, the data was collected from 133 samples who were the employees of local glove production company which includes management staff and non-management staff. Management staff refer to those who are in position as clerk, executives and managers. The findings revealed that safety climates practices consist of management commitment, safety training, workers' involvement in safety significantly correlated with both safety behaviour dimensions.*

**Keywords:** Management Commitment, Safety Training, Workers' Involvement in Safety, Safety Behaviour

## **1. Introduction**

Safety at workplace not only will reduce accidents but also will improve work productivity and increase performance of human capital [1, 2]. Similarly said by [3] there is positive implication towards workers motivation and energy in safety secured workplace. However, in higher risk work environment such as manufacturing, construction, mining and offshore it is required to have more rigid rules and regulation

on safety and health (SH). However, even with complete set rules and regulations yet accident still occur.

Unreported accident cases in the other sectors especially in the manufacturing sector, are another emerging major concern [4, 5]. With the increasing number of foreign workers in Malaysia, both with and without permits, the actual number of manufacturing accidents may be higher than reported [6]. Diverse workforce creates a unique work culture which worth of investigating either this work climate compliance to safety rules and regulations.

Therefore, this research investigated to what extent the workplace climate consists of management commitment, employee involvement and training provided on safety and health influence the safety behaviour which is categories into safety participation and compliance. The findings of the present study also could help glove Production Company to become efficient by reducing unwanted incidents, accidents and fatalities. The result of this study can be used as guidance for management and further improve safety related issues in glove production company. It could be helpful in the development of new policy, more specific training program, awareness workshops, safety campaigns, additional safety procedures or work instructions, new guideline for conducting specific task associated with steel industry and even reward for those who show compliance with safety procedures in the course of related work.

### **1.1 Research Questions**

The research questions of this study are as below:

1. What is the level of safety behaviour among employees?
2. To what extent the level of management commitment, employee's involvement and safety training and education had been practiced in the studied organization?
3. Is there any relationship between management commitment, employee's involvement and safety training and education towards safety behaviour?
4. What is the most dominant factor which influences safety behaviour among employees?

## **2. Literature Review**

### **2.3.1 Management Commitment**

Definition of management commitment is management's engagement and in order to achieve a goal [7]. It had become the main significant factor by various researchers in occupational studies [8] Previous studies had identified the importance of management commitment in reducing employee injuries [9]. Management's commitment towards safety is a main reason which leads to the attainment of an organization's safety program [10]. Management commitment can be apparent through job training programs, advancing to consideration of safety in job design, and management participation in safety committees; in addition to evaluate of the speed of work effectively [3, 4, 11, 12].

### **2.3.2 Safety Training**

An organization that wants its employees as contributing participants in safety activities should provide them proper training. Similarly, safety training can be a means by which accident can be predicted [4, 12-14]. In addition, providing safety and health training enables workers to know how to work safely and help organization to avoid litigation because of an accident. Essential and effective safety training is important to expose the employees with types of possible accidents, ways to prevent those accidents and potential hazards involved in their jobs on daily routine basis. Therefore, programs pertaining to training and education enhanced awareness and safety in construction industry [15] While, [16] considered safety training as attitudes to acquire knowledge and skills about risks in job.

### 2.3.3 Workers' Involvement

According to [6], employees at workplace are most qualified personals to make suggestion for making improvement and they are reliable to discuss about safety and health issues that affect the workers in the organization. This empowers workers with authority, responsibility and accountability in making decisions; at the same time ensures that both employees and managements are involved in setting goals and objectives pertaining to safety practices [17]. Thus, it encourages the employees to grant their best involvement as an individual and team in safety climate practices in firm.

### 2.3.4 The Antecedent-Behaviour –Consequence Theory

The antecedent-behaviour-consequence theory of applied behaviour analysis developed by [15] identified antecedents or activators, direct one's focus and attention on relevant safety behaviours needed for a given task. This concept has been widely accepted as a behaviourally based safety (BBS) endeavors. Workers who lack safety participation due to either an increase pressure to expedite production or perceived that the safety climate of their work place is poor often would have poor work attitude and safety behaviour. The importance of skills and job expectations had been identified as an important parameter which could influence safety behaviour among workers. One of the important elements which had been used in this research is the level of safety participation which could be used as an intervention to apprehend unsafe work behaviour and instill good safety behaviour among workers. In addition, safety-incentive programs based on outcomes can stifle employee safety participation in the development and administration of an effective behaviourally based safety programs.

### 3. Methodology

A comprehensive research framework was developed based on the literature review whereby the framework of this study consists of three independent variables of safety climate practices where these independent variables will later test their relationship on the dependent variable of compliance with safety behaviour namely safety compliance and safety participation as illustrated in Figure 1. The model was constructed from a study conducted by [3].

The research framework of this study is depicted as in Figure 1 below.

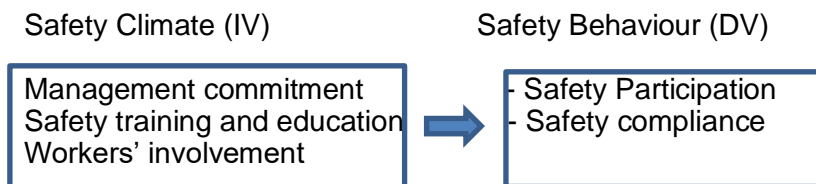


Figure 1: Research Framework

The samples or respondents in this study are employee of glove production company which includes management staffs and non-management staffs. Based on [8, 18-21], the suggested sample size for given population of 200 is approximately 133 respondents. However, for this study, total of 133 samples was selected randomly from the whole population. After the determination of sample size, 150 questionnaires were distributed to the respondents by providing them an adequate time to complete. The study was conducted in four steps. First, before administering questionnaires to the respondents, the researcher will brief the management of the glove production company on the main purpose of the study in order to obtain the permission to conduct

the research besides to earn their full cooperation. Second, the dates for the administration of the questionnaires were fixed. Third, briefing session regarding completing the questionnaires was conducted to the head of departments at their respective workstations. Fourth, the questionnaires were distributed by the researcher to all managerial and non-managerial staffs to respond and collect immediately upon completion. This session took two hours of administration. 150 questionnaires were distributed. Only 133 were usable due to few reasons such incomplete questionnaire and double entries.

#### 4. Results

The descriptive and inferential analyses which provide answers to research objectives 1- 4 are presented below. In interpreting the research findings, the researcher refers to the interpretation scale by other researchers. For research objective 1-2, mean score is used as a reference and the mean score was based on the mean score interpretation scale by [22]. For research objective 3, Pearson correlation analysis ( $r$ ) is used to determine the correlations coefficients and significant value. Correlation interpretation scale by [22-25] is used as a reference. For research objective 4, multiple regression analysis was applied to determine the most dominant factor which influences the employee's safety behaviour.

##### 4.1 Descriptive Analysis

About 4 items was used to measure the safety behaviour among the employees. The descriptive analysis reviewed the level of safety behaviour is high ( $M=4.286$ ,  $SD=0.382$ ) with 97% of the respondents agreed that they are complying to the safety rules and regulations.

In this study, there are three independent variables namely management commitment, employee's involvement and safety training and education. This analysis is conducted to determine the answers for research question two which is "what is the level of independent variables?". The management commitment ( $M= 4.226$ ,  $SD=0.504$ ), employees' involvement ( $M=3.998$ ,  $SD=0.453$ ) and safety education

Independent Variables	Mean Score	Standard Deviation
Management Commitment	4.226	0.504
Employees Involvement	3.998	0.452
Safety Training and Education	4.149	0.520

( $M=4.419$ ,  $SD=0.520$ ) indicate the management's high commitment in safety issues, active involvement of employees in managing safety procedures and high focus on learning safety precautions and knowledges.

##### 4.2 Correlation Analysis

This analysis is conducted to answer the research question three, which is "Is that any significant relationship between the independent variable towards the dependent variable?". The researchers apply Pearson Correlation Coefficient to determine the direction and the magnitude of the relationship. Based on Table 1, all the independent variables were significantly correlated with safety behaviour ( $p<0.05$ ). The management commitment significantly correlated with safety behaviour ( $r=0.277$ ,  $p=0.001$ ), employees' involvement ( $r=0.402$ ,  $p=0.000$ ) and safety training and education ( $r=0.183$ ,  $p=0.035$ ). From this analysis, it was found that the higher the employee involvement in safety participation, the higher will be the safety behaviour among the employees.

Table 1

## Correlation Analysis

Variables	n	Pearson (r)	p-value
Management Commitment	133	0.277	0.01
Employees involvement	133	0.402	0.01
Safety Training and Education	133	0.183	0.035

**4.3 Multiple Linear Regression**

This analysis is conducted to determine the most dominant factor which influenced the safety behaviour among the employees. "Enter" mode was used to analyse the linear regression among the variables. Table 2 indicates the factor which influence the safety behaviour among the employees by observing the p value ( $p < 0.05$ ). The analysis showed that employees' involvement ( $B=0.484$ ,  $t=4.140$ ) is the most dominant factors which influence safety behaviour ( $p < 0.05$ ). Meanwhile, the others two independent variables were not significantly contributing to the safety behaviour since ( $P > 0.05$ ).

For every increase of one units of employee's involvement, there will be an increase of 0.409 units in safety behaviour. It means, more voluntary participation of employees in safety programmers will increase the safety behaviour. The R value 0.432 indicates total relationship of the independents variables towards the dependent variables.  $R^2 = 0.186$  indicates the variation found in the safety behaviour which can be explain with the three independent variables. There are 82% of factors still needs to be investigated in order to understand the safety behaviour of the employees.

From the coefficient table, the researcher creates regression equation of this survey:

$$(Y) = 2.948 + 0.083(X1) + 0.409(X2) + 0.398(X3) + e.$$

Table 2

## Multiple Regression Analysis

Predictors	B	SEB	$\beta$	t	p
(Constant)	2.948	.299	-	9.850	.000
Management Commitment (X1)	0.083	0.77	0.110	1.085	.280
Employees involvement (X2)	0.409	0.099	0.484	4.140	.000
Safety Training and Education (X3)	0.156	0.083	0.213	1.873	.063

Notes:  $R = 0.432$ ,  $R^2 = 0.186$ ;  $F = 9.846$ ;  $P = 0.000$

## 5. Discussion

*Based on the Antecedent-Behaviour-Consequence Theory, this study analyzed the variables that would lead to a major impact on safety behaviour among the local glove manufacturing company (i.e. management commitment, safety training and education, and employee involvement). The stimulus was expressed in this research by Safety Leadership (management commitment, safety training and education, and workers involvement). Industrial sector review in occupational safety and health management. [26, 27] discovered that the safety climate can influence the actions of safety. Nonetheless, [28] reported that the safety climate's effect on safety actions still exists. Further study is required. [29]*

describes a safety climate as a common employee understanding of the role of management based on safety policies, procedures and practises in shaping safety behaviours. In the analysis of the relationship between safety climate and behavioural safety since 1980 until this decade, the term has become guidelines ([30, 31]. In addition, the definitions made by researchers during this decade were also revealed by [32], still retaining the original concept of safety climate by [29].

The main concept of management commitment, as envisaged, is to shape safety behaviour and share a vision as well as to enhance an individual's safety behaviour [33]. Therefore, the quality of leadership among leaders was able to influence the safety behaviour of members regardless of the difference in the status of subordinates. These findings of this study (as proposed by [18] also parallel the results of studies conducted in the manufacturing sector by [9], [13], and [21]. According to them, to achieve safety and health standards, management commitment has become the key agenda or priority in organizations to improve safety behaviour. [34] studied the effects of mediation of safety education on the relationship between the actions of safety climate and provision. Manufacturing and mining organizations in Australia were included in the locations surveyed by [34]. Education was also applied by [3] as a mediating effect of the relationship between the activities of safety management and safety performance in India's chemical processing organizations. Therefore, although the emphasis and geography of the research varied between this study and previous studies, the relationship between management commitment and safety behaviour among the manufacturing employees was mediated by education and training.

In addition, we discovered that there was a substantial effect on management commitment and safety education and training. This is a likely outcome because commitment of higher management will encourage and strengthen the safety actions of employees. This situation strengthened the stance of [23, 27]) which the conviction that the safety management of a company will inspire subordinates and affect their performance. Findings from this study have supported [7, 35, 36] views that an individual has gained more determination to fulfil their most important needs. This suggests that people agree that ensuring outstanding safety performance is the most important need or goal.

Individual desires and needs vary, as is consistent with Geller's The Antecedent-Behaviour-Consequence Theory and the degree of encouragement provided to achieve good results by the above critical elements needed personalization. For example, there will be little motivation to do so if anything is not valued, just as individuals are not motivated to pursue a course of action if they believe that the outcome is unfair. All the preceding elements lead to results, using A-B-C theory to predict that employees will be motivated when they thought that putting more effort produces higher levels of efficiency.

## 6. Conclusion

Overall, this research has shown that components adapted to The Antecedent-Behaviour-Consequence Theory can outline the effect of the employees of gloves manufacturing on management commitment and safety behaviour. This study also found that education and training could serve as a component of the organism (mediating) that could influence the relationship between manufacturing workers' safety leadership and safety behaviour. As an outcome, appropriate attention should be paid to the results of this study, which could be very critical, necessary and significant for ensuring and encouraging safety management behaviour in the company's manufacturing sector.

Finally, the results of this study are meant to act as recommendations for the company's effective and productive management. The findings of this research are also intended to enhance the current research knowledge and to formulate new ideas for the company's manufacturing safety management. This is considered imperative to ensure that the conduct and understanding of manufacturing safety is elevated to a level that makes it a healthy culture for all workers employed in the company.

In addition, the research ideas derived from this study are expected to be generated by future researchers to study the effect of safety leadership on safety behaviour in other companies' manufacturing areas.

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