

EMPIRICAL INVESTIGATION ON RELATIONSHIP BETWEEN SAFETY MANAGEMENT PRACTICES AND SAFETY BEHAVIOR

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ABSTRACT

Safety awareness programs have been actively conducted in order to inspire employee's involvement and commitment toward safety. However, there are still many accidents and incidents reported involving workers at the workplace. Safety management practices improve working conditions, employee's safety motivation and behavior, which in turn will reduce the accidents in the workplace. The main objective of this study is to investigate the relationship between safety management practices and safety behavior at work place. This is quantitative research whereby a survey questionnaire was use among 159 employees from services based company. Data has been analyzed using Statistical Package for Social Science (SPSS) version 21. This study discovered that safety management practices have a strong relationship with the safety behavior. Management commitment, safety training and worker's involvement were the safety management practices that highly correlate the safety compliances and safety participation. This result provided valuable guidance for scholars and practitioners in identifying the method where they can improve safety at the workplace.

Keywords: Safety, Safety Management Practices, Safety Behavior.

1. INTRODUCTION

The equipment and physical environments in the workplace contributed about 10 percent of the rate of injuries in the workplace [1]. In the meantime, other concerns are attributed to workers' dangerous actions and employee contact with the organization's processes [2]. In addition, occupational accident or workplace injury often typically happens as a result of the hazardous conduct of the employee, the organizational factor, and the risks of the work environment rising. Occupational safety and health management therefore provides the regulatory basis for safeguarding safety, health and wellbeing among all workers and shielding others from safety or health threats in relation to the activities of people at work [3]. A safe and healthy workplace is one of the factors to business success. By establishing good safety practices in the workplace, employees will be more motivated and productive with lower absenteeism rates, fewer business interruptions, and cutbacks in the costs of sick pay and temporary auxiliary staff. Safety management practices not only improve working conditions but also positively influence

employees' attitudes and behavior with regard to safety, thereby reducing accidents in the workplace [4]. It will further improve the reputation both in the business world and as an employer of choice. In any industries, the issue of safety is very pertinent. Safety behavior is closely related to productivity, quality of work and discipline.

Good safety behavior in the workplace practices is considered as an asset to the industry since it has connection with productivity [5]. There is an increasing and convincing indication that providing a healthy and safe working environment has the potential to increase labor productivity and in turn increase business profits. One way to improve safety in the workplace is to apply safe behavior in the workplace. Workplace accidents are possibly caused by applications of unsafe behavior in the workplace. Other than that, is the non-compliance with safety policies and safety management practices that is not robust [6]. There are two types of safe behavior which is safety compliance and safety participation. Lack of knowledge of laws and regulations on safety and health at work greatly influenced the rate of accidents at work. Safety management practices should be implemented efficiently and effectively so that the statistics of these accidents can be minimized. It will not only contribute to a conducive workplace, but it can also produce workers who are disciplined and always aware of the importance of working in a safe behavior [7].

The main objective of this research is to study the safety management practices at and its correlations towards safety behavior of the employees. Thus, the following research objectives were formulated:

- i. To measure the level of safety management practices among workers
- ii. To analyze the level of safety behavior among workers at the company.
- iii. To identify the relationship between safety management practices with safety behavior among workers.
- iv. To propose recommendation of best safety and health practices in the workplace.

The outcomes and findings of this study will then provide valued information related to safety management practices and safety behavior in the workplace and it can further be used as a benchmark for future safety program development and action for improvement can suggested to increase the efficacy of employees by reducing incidents, accidents and also medical implications. This study will provide significant references and facts for future researchers on safety management practices and safety behavior.

2. LITERATURE REVIEW

A. Safety Management Practices

Safety management practices are the policies, strategies, procedures and activities implemented and followed by the management of an organization to ensure the safety of their employees. Safety management practices is a management approach that is used in an organization to control hazards in the workplace [8].

i. Workers' Involvement

Worker's engagement is a behavior-oriented technique which involves individuals or groups of workers within the flow of communication and also a decision making in the organization. Employees at workplace are the most qualified personnel to make suggestions for making improvements and they are dependable to deliberate on safety and health matters that affect the workers in the organization. Thus, the involvement of workers in the context of safety is measured

in terms of the level of their involvement in decision making, management's commitment to the issue of safety, worker involvement in identifying safety issues in the workplace as well as discussions on the issues of safety amongst the colleagues [9].

ii. Safety Training

Effective safety training is the key elements in any successful accident prevention program and occupational safety and health program. Safety trainings are making accidents more foreseeable to improve safety and health of employees at the workplace. Thus, the responsibility of the management is to organize a comprehensive safety and health training program for employees. The performance of safety training towards the impact on workers' behavior revealed that safety training program did give a significant impact to the behavior among employees in the workplace. The finding of the study had proven that employees' behavior is influenced by safety training programs held at workplace [10].

iii. Management Commitment

One study found commitment to safety management environment is a key factor in determining the success of a safety program [11]. The perception of an employee will influence their confidence in the safety management system in an organization. Therefore, the responsibility of the management is to ensure that all issues relating to safety and health are handled with care. Based on the continuous improvement model elaborated by the Department of Occupational Safety and Health (OSH) (2014) on the Guidelines on Occupational Safety and Health Systems, the employer will need to show strong leadership and commitment to activities in the organization, and make appropriate arrangements for the establishment of an Occupational Safety and Health Management System (OSHMS). Management also must organize the establishment of OSH responsibilities and accountabilities structures, a safety training system, employee competency definitions, safety documentation practices and an effective communication system. The management must then evaluate the implementation by managing those functions associated with measuring the management system's performance. This involves the development of performance monitoring and measurement protocols, investigation practices for accidents, auditing methods and management review arrangement.

iv. Safety Rules and Procedures

Safety rules and procedures that are well established and well documented by an organization and its enforcement towards safety management practices improves the safety behavior of employees at the workplace. Safety rules and procedures are based on the frequent safety checks, the enforcement level of safety implementation by the management and the effectiveness of the occupational safety and health procedures and rules in the workplace in order to prevent accident from occurring. Safety rules and procedures as a factor in their case studies. The findings show that there is a significant correlation between safety regulations and procedures toward the occurrence of accidents at work [12].

v. Safety Communication and Feedback

One form of communication that can be applied is a two-way communication. Two-way communication will be more effective by the active involvement of both workers and employers in giving opinions. It will also be able to control and influence the behavior of an employee when performing their work. Communication and feedback regarding safety and health at work will improve the effectiveness of safety management practices [12]. Constant and direct communication is an important characteristic of any working environment. Efficient communication on safety

related matters leads to the trust of employees. Regular communication about safety issues between management, supervisors and workforce is an effective management practice in order to improve safety in the workplace.

B. Safety Behavior

Two important dimensions of safety behavior have been categorized which are the safety compliance and safety participation. Safety compliance is the core safety activities needed to be carried out by the individuals to maintain and enhance workplace safety. In the safety compliance, it reflects to the individual personality in motivating himself or herself to always abide to the rules and also conducting his or her work based on the safety procedures or standard operation procedures that are documented by the management. Whereas, safety participation is defined as employee's behavior in supporting safety issues in the workplace together with other colleagues [15].

C. Empirical Studies on Safety Management Practices towards Safety Behavior

Safety management practices, supported by employees will form a good safe environment in the workplace [4]. An organization which had a low rate of workplace accidents is due to several factors. Among them are the involvement of management in safety activities, safety training for new employees, ongoing safety training to workers, the efficacy of daily safety poster and daily communication between employees and managers in the workplace [16]. Safety management practices can also be divided to involvement of employees, safety training, hiring practices, reward systems, management's commitment and communication and feedback as safety management practices in hospital environments [17]. In addition, safety training is a key factor and the most important of which will determine the safety behavior of an employee [18].

D. Conceptual Framework

The development of conceptual framework as per depicted in figure 1 is based on the extensive literature review.

The independent variables is Safety Management Practices which consist of five dimensions; Worker's involvement, Safety Training, Management Commitment, Safety Rules and Procedures and Safety Communication and Feedback. While the dependent variable is Safety behaviour consists of Safety compliance and participation.

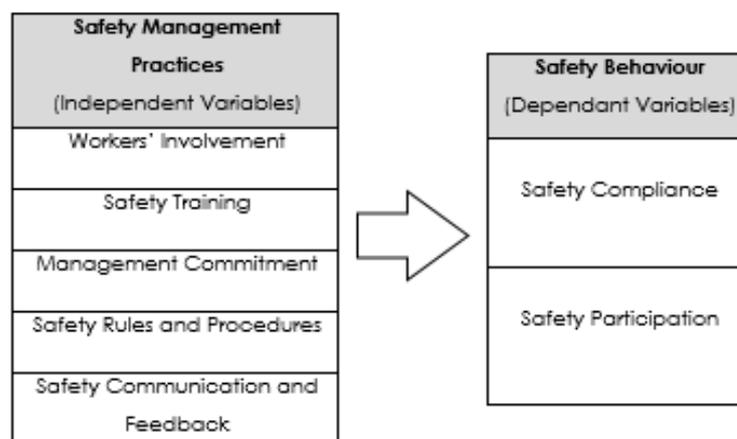


Figure 1: Conceptual Framework

3. RESEARCH METHODOLOGY

This study was conducted at one private company which involve in manufacturing, properties, service and technologies in Malaysia. It has more than 300 employees and operated more than 20 year in east coast of Malaysia. This is a quantitative research whereby the primary data was collected from employees at the company. A total of 175 questionnaires were distributed among the respondents of this company. The secondary data were collected from ISO 45001:2018 and guidelines related to safety management practices and safety behaviour. The secondary sources data that has been used by the researcher in this research are the official statistics, mass media products, letters, government reports and web information. Other than that, the researcher obtained the secondary data from the historical reports that have been given by the Safety, Health and Environment (SHE) of the company.

In this research, the questionnaires were developed from the adaptation of previous studies on the similar topics. The data collection begins by establishing a survey form on the employee perception on safety management practices and its correlations towards safety behavior. Pilot test was conducted among 30 samples from the total samples of this study. A total of 175 questionnaires were distributed among the respondents of this company. The sampling is based on the convenience sampling method. The questionnaire that is divided into three main sections being used for data collection purposes. The first section contains the demographic characteristics of the respondents, the second section which is the safety management practices, the researcher used five different instruments according to the different dimensions of workers' involvement, safety training, management commitment, communication and feedback systems, and rules and safety procedures. The third section used two main dimensions which were safety compliance and safety participation. All the above variables were measured using the five-point Likert Rating Scale.

4. DATA ANALYSIS AND FINDINGS

Data analysis was conducted based on 159 of good returned questionnaire after data cleaning and checking for outliers is conducted.. SPSS version 21 has been used for data entry and data analysis. The

Research Question 1: What is the level of safety management practices among workers?

To answer the research question number one, the T-Test was employed. Table 1 below displays the results of the T-test for the five dimensions of safety management practices. The mean value for five dimensions in safety management practices ranges from 4.273 – 4.372.

Table 1: Dimensions in Safety Management Practices– Mean and Std. Deviation Statistics

Dimensions	N	Mean	Std. Deviation
Management commitment	159	4.273	0.909
Safety training	159	4.372	0.947
Workers' involvement	159	4.354	0.832
Safety communication and feedback	159	4.283	0.837
Safety rules and procedure	159	4.312	0.876

The results showed that the safety management practices in this company have a mean value of 4.312, which indicates a very high level of data consistency. Thus, this company has been in the industry for more than 2 decades and have acquired many experienced and skilled workers. This has been proven further by the certification of ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 and other quality accreditations as well.

Workers' involvement in this study also shows a very high mean value of 4.354. Due to the majority of the respondents have the skilled and experienced in the organizations, thus the knowledge and skills in the aspect of safety and health have also developed into the years. Thus, safety rules and procedures feedback gave a mean value of 4.312 which is also relatively high. This is a supporting dimension to the management commitment whereby with the certification of ISO9001:2015 to the company in study, it gave a high impact to the perception and understanding on the safety and health rules and procedure amongst the respondents. As for the lowest mean value which is management commitment, the value of mean is still considered very high (4.273). This shows that the respondents' notion towards the management commitment is very high. The management commitment with regards to safety will influence the safety behaviour of an employee and it will protect the employees from accidents.

Research Question 2: What is the level of safety behavior among workers?

Based on the mean value, most of the respondents show the agreement that they have high tendency to practice their work in a safe manner, using the required equipment, follow the exact safety rules and procedure, ensure the maximum levels of safety and do not move away from the correct work procedures. Safety compliance shows the least mean value out of the two which measured 4.291 and considered as high. Thus, most of the respondents show the agreement that they have high tendency to practice their work in a safe manner, using the necessary equipment, follow the correct safety rules and procedure, ensure the highest levels of safety and do not deviate from the correct work procedures by taking 'short-cuts'. Besides that, safety participation tracks a mean value of 4.342 which shows the highest value amongst the two safety behavior dimensions. This proves that the respondents have an excellent voluntary behavior towards pertaining safety at the workplace.

Table 2: Safety Behavior – Mean and Std. Deviation Statistics

Dimensions	N	Mean	Std. Deviation
Safety compliance	159	4.291	0.873
Safety participation	159	4.342	0.865

Research Question 3: Is there a strong correlation between safety management practices and safety behavior in the workplace?

The analysis results of the Pearson's correlation between safety management practices (management commitment, safety training, workers' involvement, safety communication and feedback, safety rules and procedures) and safety behaviour (safety compliance and safety participation) were revealed in Table 3 below. It shows a very strong correlation at $r = 0.944$.

Table 3: Pearson's Correlation Analysis (Safety Management Practices and Safety Behavior)

		SMPAVERAGE	SBAVERAGE
SMPAVERAGE	Pearson Correlation	1	.944**
	Sig. (2 tailed)		<.001
	N	159	159
SBAVERAGE	Pearson Correlation	.944**	1
	Sig. (2 tailed)	<.001	
	N	159	159

The correlation value between safety management practices have a very strong relationship (within the range of 0.910 – 1.00) with safety behavior. This proves that the safety management practices applied have a very strong significance to the safety behavior in the company.

Hypothesis Test Result and Test Method

The hypothesis which mentions that the safety management practices has a strong correlation with safety behaviour among workers is accepted. The level of correlation of safety management practices towards safety behaviour was at a very strong level with $r = 0.944$. This demonstrates that the safety management practices when applied will have a strong implication to the safety behavior in the company.

Table 4. Summary of Hypothesis Test Result and Test Method

	Hypothesis	Results	Test method
H1	The safety management practices have a very strong correlation with safety behaviour among workers at UMP Holdings Sdn. Bhd.	Accepted/ Very strong	Pearson Correlation Analysis Result

In this research, it is indicated in research question number four, to propose recommendation of best safety and health practices in the workplace. Employees also have a responsibility to act in a way that protects their own health and the health of their coworkers. According to Applied Sciences on "Safety at Work", personal safety, a healthy atmosphere, and safe behavior are crucial elements that employers must ensure their availability within their organizations. Staffs and managers must be trained to keep a health and safety mindset in order to maintain a secure and stable work environment. Such a mindset does not always go hand in hand with the learning of expertise or experience in the application of machinery. Most people will learn to drive a car, for example, in a very short amount of time, however, a mature attitude is needed [19]. Employees should be encouraged to act in ways that are unusually or extremely safe as part of a successful safety incentive model. The rewarded activity should reduce the risk of injury and increase occupational safety. Rather than concentrating on the result, rewards focused on observable safety actions and attitudes can inspire improved safety efficiency. Money can be an effective motivator, but incentives do not have to be monetary to be effective.

This research was conducted in order to find out the relationship between safety management practices and safety behavior among the employees. It is expected that with the study of safety management practices and safety behavior, it can enhance a better reliability of the subject in the future. However, not many researches were conducted in the corporate company thus providing space and opportunity for other researchers to analyze the total industry average as benchmark it best practices. This research will provide a very good reference for the employees in the company to better appreciate the safety management practices and safety behavior in the organizations. Good safety management practice is important to be delivered as it gives affect not only to the issues of productivity, awareness and also discipline if no precaution taken, but the safety behavior will also become a problem in the work setting. Thus, this quantitative research engaging with the strategic respondents have been conducted so that the data from the respondents with proper analysis can offer some solution to the organizations.

5. CONCLUSION

This research successfully discovered the relationship between safety management practices and safety behavior among the workers at different level. It is highly recommended that the management of organization to raise the commitment and safety communication between management team and worker. Overall, this research revealed that the safety behavior of people in organization depending on the management practices component.

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