International Journal of Engineering & Technology, 7 (3.30) (2018) 388-392

International Journal of Engineering & Technology

Website: www.sciencepubco.com/index.php/IJET

Research paper



Prioritizing Safety Training for a More Personal Compliance of a Safe and Healthy Work Environment among Students and Staff of Higher Education Institutions of Selangor

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Abstract

Safety is an important element in an organization. A safe work space makes safety a priority throughout the organization. Improved safety will minimize job accidents, injuries, medical illnesses and death. Occupational safety and health (OSH) training that is provided by the top management of universities will create a safe and comfortable environment for both the staff and students. It also guarantees that every employee is safe in the workplace. Thus, the primary objective of this study is to investigate the effect of safety training towards personal compliance. A total of 234 questionnaires were distributed to 20 higher educational institutions in Selangor, Malaysia. A conclusion was reached once the data were analyzed using SPSS; that safety training (B = 0.364, t = 11.90, p <.01) significantly has a positive effect on Personal Compliance.

Keywords: *Safety Training; Personal Compliance; Private University.*

1. Introduction

A safe workplace is central to our ability to enjoy health, security, and the opportunity to reduce accidents in the workplace. In this era, workers encounter various types of occupational hazards ranging from animals and hand tools to ladders and stairs. Therefore, employers choose to work with their employees and with Occupational Safety and Health (OSH) to reduce injuries and illnesses at their workplace. It is important for organizations to have a strong occupational safety and health compliance to ensure that employees work in a safe place and are carrying out work in a safe manner. Moreover, a safe workplace can also help enhance the image of the organization and reduce business cost and disruptions (1). The integration of OSH practices could lead to the sustainable growth of the organization.

Furthermore, the number of accidents, injuries and fatalities can also be minimized if employees comply accordingly with the safety requirements of the workplace. Clarke (2) and Neal & Griffin (3) found that employees who follow safety rules and procedures are less likely to be injured or hurt in a workplace accident, thus ensuring that work is done both efficiently and safely.

The Malaysian Occupational Safety and Health Act (OSHA) 1994 is an example of the government's commitment towards regulatory compliance. This act provides the legislative framework that stimulates and encourages good safety and health standards at work and at the workplace. With OSHA (1994), the employees can protect themselves while at work, very often resulting in fewer occupational accidents as a whole in the organization.

The issue of safety is not only relevant to industries but also to higher educational institutions. In this context, any accident or injury will most likely involve the staff as well as students. According to Jamaludin (4), accidents or injuries at these institutions are normally due to negligence, lack of knowledge of the work to be carried out, as well as damage caused on or failure of equipment, materials and chemicals used. OSH training must be given to university students and staff to make sure that they know how to handle danger and hazards in the workplace. One way of achieving this is by instituting safety training at higher educational institutions with the aim of reducing accidents and injuries at work. Therefore, the main objective of this research is to investigate the effects of safety training towards a personal compliance.

2. Literature Review

2.1 Safety Training

Training refers to "instruction and practice for acquiring skills and knowledge of rules, concepts, or attitudes necessary to function effectively in specified task situations" (5, p. 11). Safety training on the other hand is defined by Cohen et al. (5) as "instruction in hazard recognition and control measures, learning safe work practices and proper use of personal protective equipment, and acquiring knowledge of emergency procedures and preventive actions" (p.11). Safety training is now recognized as an important organizational characteristic that distinguishes organizations with successful safety programs from those without. It is an effective

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means for employees to enhance their skills and knowledge of safety in the organization (6).

According to Wilkins (7), training in a workplace is designed to educate adults of various backgrounds to face different challenges. Trainers are needed to disseminate materials and to tailor their teaching style to suit the requirements of each particular trainee. In the course of developing instructional methods, trainers must consider the value of andragogical theory, which literally translates as methods and theories for teaching adults or mature trainees. Trainers, in particular, will benefit from having access to data that quantify the significance of this approach.

Authors Ali, Abdullah and Subramanian (8); Boughaba, Hassane and Roukia (9); Keffane (10); and Vinodkumar and Bhasi (11) found that safety training is a key factor in maintaining and changing workers' attitude toward safety. Another study on the majority of large contractors in the U.S. by Demirkesen and Arditi (12) proves that an effective safety training program for employees significantly contributes to better safety outcomes and should, therefore, be considered as part of the company's strategy to perform. Effective safety training will also improve safety behavior, skills and knowledge. Meta-analysis studies (13; 14) also reported strong empirical evidence on the effectiveness of safety training on employees' safety behaviors. According to Da Cunha, Stedefeldt, and de Rosso (15), training conducted for food handlers in Brazil has improved their knowledge of the subject matter. The above evidence supports the view that safety training is a major factor that contributes to personal compliance.

2.2. Personal Compliance

It is important for organizations to have a strong occupational safety and health compliance. This is to ensure that employees are working in a safe workplace and practices high safety compliances that have been set. According to Neal, Griffin, and Hart (16), safety compliance is defined as adhering to safety procedures and carrying out work in a safe manner. Accidents in the workplace can be minimized if employees comply accordingly with safety compliance. Examples of safety compliance behavior include maintaining the standard of work procedures and wearing personal equipment (3).

The Malaysian OSHA 1994 is an example of the government's commitment towards regulatory compliance. This act provides the legislative framework to stimulate and encourage good safety and health standards at work and at the workplace. There are several benefits when organizations practice strong safety compliance. For example, businesses that emphasize high safety measures will create a productive working environment which will lead to happier employees. A safe workplace can also help to enhance the image of the organization and reduce business cost and disruptions. Furthermore, work premises that are kept to high standards of safety can reduce the number of accidents, injuries and fatalities in the workplace. Thus compliance towards safety requirements will help the work to do both efficiently and safely.

Weaver and Trevino (17) studied in depth typical compliance programs which require employees to be trained under the context of ethics in Human Resources. They discovered that when an ethics program is seen as unfair, for example where employees are aware that their attendance at an ethics training meeting would be used to hold them blameworthy for future problems (a practice we encounter in a large company's ethics office), management should expect reduced or reluctant attendance at voluntary training sessions.

On the other hand, if the prescribed ethics program is perceived as fair, more employees will be willing to conform its expectations and to commit themselves to using the program. We can conclude that the employee's evaluation of fairness significantly affects their reactions to compliance initiatives.

2.3. Safety Training and Personal Compliance

Many studies have documented the relationship between safety training and safety compliance. A study was done by Shah Rollah et al, (18) revealed the significant influence of safety training practices towards an organization's safety performance. The study was conducted using a systematic sampling design among 696 employees in automotive manufacturing and assembly plants in Malaysia. Another study among 244 fire fighters from nine fire departments in Selangor revealed that management commitment, safety training, and safety rules and procedures are positively related to safety compliance (19). Safety compliance has a direct impact on an individual or personal compliance where it induces the person to have the intention and to behave in a targeted manner.

There are several studies that show the significant relationship between training and compliance. Under the scope of food safety, Roberts et al, (20) conducted a research on the effectiveness of ServSafe food safety training by comparing a group of restaurant employees who have received training with a group that has not. The study concluded that training has significantly improved the knowledge and behavioural compliance of the trainees. On the same subject matter, (21) concluded that training alone is effective in improving employees' compliance and can be perceived as having control over behaviours. In addition, meta-analytic findings show perceptions of safety training as positively related to safety compliance (22).

Waehrer and Miller (23) looked into the synergy of training effects, benefit packages, and workplace practices on work injury. They suggested that safety training increases the reporting of injuries as well as contributes to safety on days-away-from-work injuries, especially in smaller firms. Safety training contributes to the positive behaviour of employees which has proven to be more effective in preventing severe injuries in large firms than in small ones. The positive behaviour of employees is, therefore, another way of showing compliance.

3. Methodology

This study employs a quantitative research method via the use of questionnaires. The study covers 20 higher educational institutions in Selangor and has the required sample size of 234 as recommended by Krejcie and Morgan (24). A 6-point *Likert* scale ranging from 1 (strongly disagree) to 6 (strongly agree) is used for measurement and later analyzed by SPSS.

4. Analysis and Results

4.1 Respondent's Profile

Table 1 summarizes the profile of respondents who participated in this study. The majority of the respondents were female (67.9%) with 75.2% of them being students. As for the highest level of education, 63.7% of them currently hold a Bachelor's Degree followed by 17.9% Diploma holders and 6.4% Master's Degree.

Table 1: Respondent's Profile

Profile	Frequency	Percentage
Gender		
Male	75	32.1
Female	159	67.9
Position in the University		
Administrative Staff	42	17.9
Academic Staff	16	6.8
Student	176	75.2
Education Level		
Foundation	9	3.8
Diploma	42	17.9
Bachelor's Degree	149	63.7

Master's Degree	15	6.4
PhD	6	2.6
Others	13	5.6

4.2. Assessment of Validity and Reliability Analysis

Table 2 is a summary of the multiple criterion used to determine the number of factors to be extracted. The analysis indicates that the EFA analysis should extract two factors from a group of eleven items since the first two eigenvalues under Kaiser's Criteria (i.e. 6.035 and 1.812) exceeded the first two simulated eigenvalues from the parallel analysis (i.e. 1.373 and 1.263). Besides that, the extracted factors also exceeded 60% of the cumulative percentage of variance explained (i.e. 65.41%), hence confirming that only two factors should be extracted from the eleven items.

Table 2: Multiple Criterion for Factors to be Extracted

Component Number	Initial Eigenvalue (Kaiser's Criteria)	Parallel Analysis Simulation Eigenvalue	Cumulative % Variance Explained	Decision
1	6.035	1.373	51..83	Accept
2	1.812	1.263	65.41	Accept
3	0.598	1.181	-	Reject

Table 3, on the other hand, shows the results of the EFA analysis for twelve items by using a combination of methods; PAF extraction and Direct Oblimin rotation. The KMO index for this analysis was .910 and the Bartlett's Test for sphericity for this set of items was largely significant (X^2 (55) = 1787.63, p< .01). Therefore, it can be concluded that the covariance matrices for these twelve items were not identical; hence the items could be used for the EFA analysis.

By referring to the same table (i.e. Table 3), the analysis indicates that all items exceeded the threshold value of .50 (Range: .548 to .962) factor loading, and also a communality value of at least .50 (Range: .528 to .836) which was maintained at their respective variables. The grouped items were named Safety Training (Cronbach's Alpha = .923) and Personal Compliance (Cronbach's Alpha = .863) and had a good to excellent reliability level since the Cronbach's Alpha values were above .80 and .90. Therefore, all these twelve items could be considered valid and reliable for measuring the targeted variables in this study.

Table 3: Summary of EFA Analysis

Factors and Items Included	Loading	Communalities
Safety Training		
Every university member was given sufficient training when entering the university	.900	.743
There is a follow-up training for all university students and staff.	.962	.836
Safety training is carried out once a year.	.792	.643
Safety training improves responsibility towards a safe environment in the university	.548	.528
Everyone in the university knows the emergency plan.	.863	.698
There is a program for everyone to develop a safe environment.	.833	.734
Eigenvalue = 6.035, % variance explained = 51.83%, Cronbach's alpha = .923		
Personal Compliance		
I protect myself against hazards (physical and electricity) when in the university.	.846	.652
I use the correct safety signage.	.819	.663
I ensure the highest level of a safe university.	.794	.699
I use all the necessary equipment (fire extinguisher and fire hose) in the university	.709	.548
I feel that the university provides a safe environment.	.653	.551
Eigenvalue = 1.812, % variance explained = 13.58%, Cronbach's alpha = .841		

Note: KMO-index = .910; Bartlett's Test of Sphericity, X^2 (55) = 1787.63, p< .01.

4.3. Assessment of Cause and Effect Analysis

A Simple Linear Regression (SLR) analysis was performed to investigate the effect of Safety Training towards Personal Compliance. The analysis reported in Table 4 indicates that Safety Training (B = 0.364, t = 11.90, p <.01) had a positively significant effect on Personal Compliance. Hence, it can be concluded that if the average level of Safety Training was high, the average level of Personal Compliance would also be high. The analysis also reveals that Safety Training was able to explain about 37.6% (R^2 adjusted = .376) of the total variation in Personal Compliance.

Table 4: Summary of SLR analysis

Variable	B (SE)	beta	t-statistic
IV: Safety Training	0.364 (0.031)	0.616	11.90**
Note: Dependent Variable = Personal Compliance; Model Fits = F (1, 232) = 141.61, p <.01; B = Unstandardized Coefficient; beta = Standardized Coefficient; IV = Independent Variable; **p <.01.			

In terms of model evaluation, the regression model reported in Table 4 indicates that the regression model was fit to the data since the ANOVA test was significant (F (1, 232) = 141.61, p <.01). Besides that, the Normal Probability plot (i.e. Figure 1) also indicates that the model's residual value was normally distributed as a majority of the observed values (small dots) were on the straight line. By looking at the scatter plot of the standardized residual value against the standardized predicted value (i.e. Figure 2), the pattern of this graph was at random. From the graphical method analysis, the residual of this model is therefore homoscedasticity. In terms of outliers, Figure 2 indicates that there was no outlier since no residual value was outside the boundary of ±3.0 standard deviation.

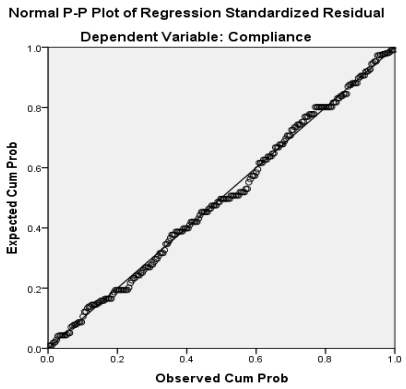


Fig. 1: The Normal Probability Plot of Standardized Regression Residual Value

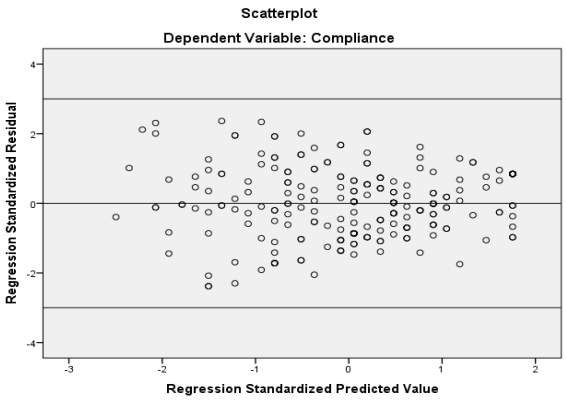


Fig.2: Scatter plot of Standardized Regression Residual and Standardized Regression Predicted Value

5. Discussion

This study found that safety training has a significantly positive relationship with personal compliance. The results indicate that if the average safety training in higher education institution was high, then the average level of personal compliance could also be high. Most of the students and staff from the higher education institutions involved in the survey considered a safe working environment important in ensuring that accidents could be prevented at work. Most of them also confirmed that they had been given sufficient training and exposure to safety issues, procedures and methods during the yearly training program that their universities organized. Hence, this indicates that the management of most of the universities under study in Selangor emphasized safety training to inculcate a safe working culture among their students and staff. This finding affirms the conclusion of a study by (23) where safety training contributes to the positive behavior of employees in preventing severe injuries.

Furthermore, frequent safety training also creates a better occupational safety and health awareness among the students and staff of these higher education institutions. They would be more aware of what needs to be done in an emergency or during an accident if and when they occur at the workplace. They would also know how to protect themselves from hazards and be familiar with the evacuation procedure of an emergency situation. In support, Lai, Liu and Ling (25) revealed that they found safety training as the most effective tool to minimize hazards since training helps to improve work skills as well as the ability to identify hazards at the workplace. Generally, good safety knowledge and understanding help minimize accidents.

Workplace hazards are present in any industry including the education industry. It is crucial for top management of higher education institutions to provide more safety programs for the students and frequent safety training for their staff in order to achieve a strong personal compliance towards safety. By prioritizing safety training, the staff will be working in a safe environment and are able to focus better on their task, thus increasing productivity and quality of work. Consequently, top management support towards safety training will eventually create a reputable image for the organization itself due to the zero accident rates which will finally result in better financial performance in the long run.

6. Conclusion and Recommendation

This study explores the personal compliance status of a randomly selected population of students and staff of several universities in Selangor, Malaysia. While the staff would normally have a longer tenure at the university, new batches of students join the university every semester. Hence, a more consistent OSH training program which could be permanently scheduled into the students' plan of study would be the more desirable outcome. The students also need a more personal compliance with the philosophies and operating principles of the university, and of relevant legal and ethical issues on OSH. OSH compliance assures students and staff sufficient awareness of existing hazards and know-how to handle danger and hazards in the workplace.

Specifically, this study concludes that OSH compliance at higher education institutions is essential, therefore, necessitating as a prerequisite that these institutions meet the minimum requirements of the OSHA 1994. To make sure that this is adhered to, the universities' top management must identify and assess workplace hazards prior to the implementation of a suitable training program for both the students and staff. For this purpose, the Malaysian government has to aggressively promote OSH at higher education institutions at the top management level so that the training would be consistently scheduled as part of the university's academic program package. The university's OSH compliance could be realized once these training programs become more than an obligation.

Acknowledgement

This research work is partially supported by Universiti Selangor (UNISEL). Special thanks to the Faculty of Business and Accountancy for the permission given to the researcher to participate in the current conference.

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