International Journal of Psychosocial Rehabilitation, Vol. 24, Issue 09, 2020
ISSN: 1475-7192

Factors that Affect the Practice, Implementation, Compliance and Culture of Occupational Safety and Health in Institute of Technical and Vocational Education in the Malaysia

[1]Rosidi Fahlid Mohd Isa, [1]Mohamed Nor Azhari Azman, [2]William Akporobaroh Oduh

Abstract--- *In Malaysia, generally, the awareness of occupational safety and health has shown an impressive improvement over the years. However, this condition does not guarantee a satisfactory level of occupational safety as the rate of accidents among workers is still at a high level throughout the years. As a result, this research is conducted to evaluate the occupational safety and health practices among students and lecturers of Technical and Vocational Education and Training Institutions (TVET) in Malaysia from the view of the practice, implementation, compliance and culture level of safety and health practices. The methodology of this research is using a quantitative approach. This study is carried out in two parts, Part A is about the respondents' personal information and Part B is a survey by using a questionnaire with respondents from several institutions of Technical and Vocational Education such as Vocational College (KV), Industrial Training Institute (ILP), National Youth Skills Institute (IKBN) and Mara Skills Institute (IKM). Descriptive statistics tests are used to describe occupational safety and health practice, implementation, compliance, and culture. Hence, this research found that the level of practice and safety applied it at a high level. This means that almost all students and lecturers agree that occupational safety and health practices are very important to be adhered to and practiced. The culture of safe practices will creates a safe working culture, that indirectly create a safety culture. Thus, it will become an organisation that provides a safe environment and give benefit to the workers' activities*

Keywords--- *Practice, Implementation, Compliance, Safety Culture*

I. INTRODUCTION.

In this era, due to the growth of global development to become an industrialised country, Malaysia needs more competent and skilled workforce. Therefore, to train and develop the required manpower with industrialised country quality, the students must be trained to have a good working attitude and positive values such as discipline, diligence, and dedication. For a technology advanced country, it is important to have a lot number of workforce with good discipline, equipped with wide basic skills, and also has positive work culture and ethic [1]. As a result, the Ministry of Human Resources is eager to make this country as a safe country to work with.

[1]Rosidi Fahlid Mohd Isa, [1]Mohamed Nor Azhari Azman, [2]William Akporobaroh Oduh, 1Faculty of Technical and Vocational Education, Sultan Idris Education University, 35900 Tanjong Malim, Perak. Darul Ridzuan, Malaysia, 2Department of Science Education, Faculty of Arts and Education, Benson Idahosa University, Benin City, Edo State, Nigeria.
Email:mnazhari@ftv.upsi.edu.my

Apart from being a developed nation in the industry sector, the occupational safety and health practices are very important matter and should be given with a lot of attention. According to Atil et al [2] the occupational safety and health practices are not only focused on the individual, but should also include with the safety of tools or machines, workplace, and others. Besides, the awareness of occupational safety and health practices should be practiced by every students and employees so that attitude can be practiced during practical and to the career environment.

Safety can be regarded as a form of habit or positive attitude. It cannot be established on its own unless the human who decided whether to consider it a as priority or not. According to Tumari et al [3] safety can be defined safety as a condition that is safe and free from hazards, including injury and risk, knowledge or skills to prevent accident or illness, and quality or condition that is free from risk. On the other hand, Avent-Holt et al [4] defines that safety as the absence of danger, the unavailability of space that can be hazardous, a level of protection and a free-risk environment.

On the perspective of Makhtar [5] safety in the field of engineering, is not only focused on individuals only but it also covers the other aspects such as tools, machinery, hardware, environment and other's safety involved. Occupational safety and health issues are particularly a critical aspects as it involves high-risk jobs either in manufacturing, construction and other industries that involve the use of machinery and chemicals.

Meanwhile, Arifin et al [6] suggests that in moving to become a progressive country, the practice of occupational safety and health is an essential matter that should be given precise attention. Occupational safety and health is not only covers on individual, but also the safety of equipment or machinery, the safety of the workplace, and security of others. The awareness of occupational safety and health practices should be implemented in every students and employees so the safety attitude can be practiced during practical and entering the work industry.

Overall, in Malaysia, the awareness of occupational safety and health has shown an improvement over the years. It began with the enforcement of Occupational Safety and Health Act [7] then the employers and employees began to recognise their respective roles and responsibilities in ensuring to identify, assess, and regulate the hazards in the workplace. However, these conditions still cannot guarantee that occupational safety is at a satisfactory level, as the number of accidents that occur among workers is relatively at a high level over the years. According to the research of International Policy and Research Development of Department of Occupational Safety and Health (DOSH), the total accident declined from 2015 (38,753 people) to 35,460 people and the total deaths in 2015 from 668 people to 611 people in 2018 as presented in Table 1.

Table 1: Statistics of National Occupational Accident

National Occupational Accident	2015	2016	2017	2018
Total of Accident	38,753	41,005	42,513	35,460
Total of Death	668	668	713	611
Rate of accident (per 1,000 Workers)	2.81	2.88	2.93	2.40
Rate of Death (per 100,000 Workers)	4.84	4.84	4.90	4.14

With the rapid industrial growth, the Industry 4.0 has made the working environment become more challenging and relatively linked to occupational safety and health issues. Thus, Industrialised Building System (IBS) has been imposed to the government projects since 2008 and to educate the private sector to used the IBS in order to reduces the amount of

foreign labour, improved the quality of construction in term safety aspect, lower the cost, and reduce construction time [8]. Through human interaction with the equipment and workplace environment it will result in death, injury, loss of property, destruction and environmental pollution. This development has an impact on the manufacturing industry where the statistics show the highest number of accidents and deaths occurred in industry as illustrated in Table 2 and Table 3.

Table 2: Number of Occupational Accidents by Sector in 2013 to 2018 (October)

Sector	2013	2014	2015	2016	2017	2018 (Until October)
Manufacturing	1,655	1,667	2,041	2,315	2,178	3,228
Mining and quarrying	35	62	39	24	46	41
Construction	164	172	237	222	240	232
Agriculture, forestry, and fisheries	535	492	480	467	522	749
Accommodation	108	69	96	74	104	173
Transportation, storage and communication	92	102	131	127	122	137
Wholesale and retail trade	78	83	108	111	97	73
Hotels and restaurants	20	57	62	90	114	123
Finance, insurance, real estate and Business services	70	74	119	126	146	217
Public services and parties Statutory authority	67	25	32	110	66	58
Total	**2,824**	**2,803**	**3,345**	**3,666**	**3,635**	**5,031**

Source: Department of Occupational Safety and Health of Malaysia (DOSH) (2019*)*

Table 3: Number of Occupational Death by Sector in 2013 to 2018 (October)

Sector	2013	2014	2015	2016	2017	2018 (Until October)
Manufacturing	58	45	46	59	68	62
Mining and quarrying	5	15	4	4	8	4
Construction	69	72	88	106	111	118
Agriculture, forestry, and fisheries	33	42	31	25	23	26
Accommodation	7	0	6	2	10	5
Transportation, storage and communication	8	15	22	13	16	12
Wholesale and retail trade	5	2	6	2	3	0
Hotels and restaurants	2	4	1	0	3	1
Finance, insurance, real estate and Business services	2	4	14	18	16	22
Public services and parties Statutory authority	2	5	0	6	2	9
Total	**191**	**206**	**214**	**239**	**267**	**260**

Source: Department of Occupational Safety and Health of Malaysia (DOSH) (2019*)*

Based on Table 2 and Table 3 shows that the manufacturing sector is the largest contributor to the number of accident in the workplace. The environment of the manufacturing sector mostly used high-tech machinery and the majority of working shifts are in the evenings, for continuous production or 24 hours organisations are also categorised as the contributors to the increment of rates of occupational accidents. Furthermore, in the manufacturing sector usually employs the shift systems that could lead to accidents. The statistics in Table 2 are parallel with the staticstics shown in Table 3, which means that the manufacturing sector is the second-highest contributor in terms of fatal accidents at the workplace. From 2013 in Table 2 and Table 3, the number of death of occupational accidents is difficult to overcome in the manufacturing sector.

The statistics in Table 2 and Table 3 are parallel with the statement given by DOSH [9] where the manufacturing sector is the largest contributor to occupational accidents in the workplace, which represents 59% to 64% of the percentage of the total number of accidents. According to International Labour Organisations (ILO) [10] the daily number of death from occupational accidents or occupational illnesses reaches to 6,300 people.

Based on the statitics report issued by the Social Security Organisation (SOCSO) through SOCSO's official website, the number of accident in the country increased from 2009 to 2011 which in 2009 with 55,186 cases, 2010 with 57,639 cases, and 2011 with 59,897 cases. The result of the observation, the causes of accidents in the workplace based on summary of accident cases from the Department of Occupational Safety and Health, Ministry of Human Resources, majority of accident cases in 2011 until 2012 occurred due to lack of safety in work procedures.

In addition, from the perspective of Woolfson & Beck [11], suggests that accidents can happen in two situations. First, it can happen accidentally even the safety measures were taken. Second, accidents can occur as a result of weaknesses in safety prevention procedures. The second situation is more often occur in the context of industrial accidents compared to the first situation.

Avent-Holt et al [4] stated that the safety regulations in the workplace must be practiced from time to time and everyone should be aware and responsible to avoid accidents from happening. To prevent and reduce the risk of accidents, the awareness of safety practices should be enhanced. Practicing occupational safety and health are very important to avoid accidents especially in the workshop. This is because in the workshop there are various dangerous tools and machineries. Therefore, when working in the workshop it is necessary to maintain safety and follow the rules and instructions by the teacher or lecturer [12]. This safety education should be emphasized as one of the most important components in education especially schools or Institutions of Higher Learning (IPT). Hence, it is able to provide students with the basic knowledge and it can be applied at home when doing dangerous work. This safety issue also should become a major concern by any management or administration of the company [13].

In engineering subject such as electricity, students are required to use various machines, tools, apparatus, and materials in laboratory experiments or workshops. The students need to know how to use tools and machinery safely. Upon graduation, the students will supervise their employees and teach on how to use them and practice the safety regulation in the workshop. Therefore, the engineering students must be educated and trained to equip themselves with sufficient knowledge on the safety of workshops to nurture the safety habits and behaviours. For the benefit of all employees of an association called the Social Security Organisation (SOCSO) which was established in 1971, responsible in governing, implementing and enforcing the acts and regulation such as *Akta Keselamatan Sosial Pekerja 1969* and *Peraturan Peraturan (Am) Keselamatan Sosial Pekerja 1971* [14].

In 1970, United States of America has established law and act on safety. The act is known as Occupational Safety and Health or in short OSHA. This act was introduced to ensure the safety and health of workers in workshops or industries. In Malaysia, the safety act implemented by the Social Security Organisation or SOCSO was established in 1969. The act aims to implement, administer and enforce the social safety act and social security regulations of employees [15].

The establishment of this act is to ensure that the quality of work and the working environment is safe for the employees. Among the acts established are the *Akta Kilang dan Jentera 1967*, which aims to protect workers from hazards in industrial work. It includes occupational illness and by putting minimum standards of work environment required for safety and health. The other act which was established is the *Akta Keselamatan dan Kesihatan Pekerja 1994* and many more. All these were established to prevent accidents from happening [16].

To ensure the intention of reducing accidents in the workplace in success, the awareness of safety needs to be nurtured as a culture since in the student life. Thus, the awareness that is cultivated since the school is able to produce many quality workers and prioritise safety in the working sector [17].

Eventually, to fulfil the demand in the industry sector, the students will be exposed to various fields of skills and knowledge. The students are also will be trained on how to use hand tools and machine handling. In order to learn and meet all this knowledge of the skills, students are not only faced with the possibility of making mistakes and failures but will also face various risks of carelessness and accidents that can occur at any time. The accidents that occur in the workshop will not only cause property damage and the injury to the body but could lead to death [18]. The implementation of safety practices and safe work culture should be absorbed by every students as to have awareness of the importance on safety. This is because student in the future are becoming trainees that will undergo actual work tasks in workshops and get into the industry sector. Therefore, students should applied the safety awareness while undergoing practical work in the workshop so they tend to familiar working in a safe condition [19].

II. LITERATURE REVIEW

This section focuses on the findings from the previous research related to the practice, implementation, compliance, and culture of occupational safety and health at the Institute of Technical and Vocational Education in Malaysia. The early part of this study describes the performance of occupational safety in the manufacturing sector that consists of safety compliance and the components of safety participation. Then, the second part of this article provides a more detailed definition and concept of safety culture.

SAFETY PRACTICES

Several researchers stated that the safety management practices played an important role in creating safety climate and subsequently influenced the level of security compliance in the organisation [19].

According to Masuin et al [20], the management of safety practices considers as a subsystem in the overall organisational management and is design to control hazards that can affect the workers' health and safety. Meanwhile, from the perspective of Leaviss et al [21], the efficient occupational safety management practices can ensure high profit to the organisation and increase the rate of productivity. On the other hand, neglecting the safety and health issues would cause the employers to cover many costs such as worker's compensation and medical costs, accident investigation costs, and legal costs.

Based on the research of the safety management practices conducted before Carthey [22], the researcher choose six (6) dimensional of safety management practices which are. (1) The commitment of management, (2) safety training, (3)

employee engagement, (4) security communication and feedback, (5) safety rules and procedures, and (6) safety promotion policies as independent variables of the study. These six security management practices were further tested to identify its relationship with occupational safety compliance behaviour.

According to Alhejji et al [23] discovers that the unsafe employee behaviour is the cause of accidents in the workplace. For example, employees will do the job in unsafe situation due to incomplete work procedures and not given safety training. Based on Heinrich's Domino Theory on insurance claims documents, he states that human error is the highest contributor to occupational accidents by 85% to 95%.

Thibault et al [24] suggests that safety management practices as the policies, strategies, procedures and activities undertaken by the management to enhance the safety of their employees. Meanwhile, Eldejany [25] added that to improve the dimensions of occupational safety practices, management should includes the aspects of employee engagement, security training, compensation systems, and management of communication commitment as well as safety management practices as the research in the hospital.

Afterward, Afif [26] discusses that safety management practices as the subsystems in the overall organisational management and are designed to control hazards that can affect worker's health and safety. Additionally, Kim & Philips [27] state that efficient occupational safety management practices can ensure high profit to the organisation and increase productivity. On the other hand, neglect safety and health issues would cause employers to bear costs such as workmen's compensation and medical costs, accident investigation costs, and legal costs.

Newaz et al [28] view that management practices should include the management commitment, supervisor support, co-workers support, and employee level participation.

Overall, this study has been able to demonstrate the importance of effective safety management practices in influence them to demonstrate safe behaviour and attitude in the workplace and ultimately adhere to the occupational regulations.

IMPLEMENTATION.

The development of safety practices in the industry in Malaysia is dominated by the enforcement and implementation carried out by the government with occupational safety and health especially the agency of government and statutory bodies that related to human resources [29]. The related institute of occupational safety and health are as follows:

- Department of Occupational Safety and Health (DOSH)
- National Institute of Occupational Safety and Health (NIOSH)
- Social Security Organisation (SOCSO)
- Construction Industry Development Board (CIDB)

As the safety in workplace, all employees must obey the standard security rules and work in a situation that causes self and also the colleagues. Security compliance is achieved when employees perform on their work [22]. According to Thibault et al [24], any workers that do unsafe work and not follow the rules will be provided with the right safety training.

COMPLIANCE

A lot of previous research has been made before that showed that most the cases of accidents occur due to the attitude of neglecting the security rules. Fadlie & Rani [30] found that the employee's attitude or behaviour can lead to accident in the workplace. Therefore, the employers must ensure that all employees obey with the rules set out in the workplace. Johari

et al [31] discover that the safety culture practices in terms of effective communication, good organisational learning, the organisational focus on safety and health and external focus.

Majority of the organisations also strive to maintain safety performance through strategy of preventing or minimizing accidents and injuries in the workplace, especially in two dimensions of safety performance which are the safety compliance and safety participation. Security attitude can be described as the relationship between security culture and safety compliance and security participation.

According to Thibault et al [24] safety compliance is a very important element to reduce accidents at the workplace and it is also closely related to management practices implemented in every educational institutions or occupation. Safety practice management is a policy, strategy, procedure, and activity that should be implemented by the management to enhance the safety of their employees.

Meanwhile, on the perspective of Huda et al [32] and Agustina et al [33], compliance behaviour refers to employee action or activity in establishing or maintaining a safe environment in the workplace such as conducting work according to procedures, laws and regulations, and wearing equipment personal protection in order to avoid accident. Table 4 presented the list of act and regulation on occupational safety and health which has been gazetted by the Government of Malaysia.

Table 4: List of act and regulation on occupational safety and health which has been gazetted by the Government of Malaysia.

No.	Acts and Regulations	Hazard and Occupation
1	Akta Kualiti Alam Sekitar (Akta 127) 1974 dan Peraturan peraturannya.	Toxic and schedule materials
2	Akta Kilang dan Jentera (Akta 139) 1967	Safety and health in machinery handling plant
3	Akta Perlesenan Tenaga Atom (Akta 304) 1984 dan Peraturan peraturannya.	Safety and health in managing ionized radiation
4	Akta Petroleum (Langkah-langkah Keselamatan) 1984 (Akta 302)	Act on safety in transportation, storage and use of petroleum
5	Akta Bekalan Elektrik (Akta 447) 1990	Electrical safety
6	Akta Keselamatan dan Kesihatan Pekerjaan (Akta 514) 1994 dan Peraturan peraturannya.	Occupational health and welfare at work

According to Jaber [34], the effective monitoring and compliance system is important to ensure the safe working culture is nurtured as a continous working value. The implementation of a monitoring system should be focused on specific behaviours so the action results in a change of effective positive behaviour. When the employer found out that the employees carry out their work in an unsafe manner, we need to study why they act on such behaviour. Does it because the employee does not know that behaviour is unsafe due to lack of training or intentionally violates the safety procedures provided? [35]. The main purpose of monitoring is to change or abandon the unsafe behaviour of safety.

SAFETY CULTURE

Safety culture is an important element in an organisation (IAEA) [36] and as a whole organisation [37]. This is because safety culture is capable to prevent the accident from happening and raise the awareness of occupational safety and health which should be an agenda to give attention by all parties [38].

According to Turner [39], among the steps to nurture safety culture includes appreciation, management roles, and policies. The factor of developing a safety culture lies in the method of how to achieve the consent of all parties on the

implementation of the security elements in a particular organisation.

Meanwhile, on the perspective of Peterson [40], safety culture formed should consists of high-quality productivity by ensuring all the activities that are carried out in a safe condition. This culture is called a safety culture and it is a result of cooperation between the management and staff or students for an institution. According to Schlagwein et al [41], the characteristics of safety culture can be identified based on the following elements:

- Leadership and commitment of safe work condition from the genuine and clear higher levels.
- It is a long-term strategy.
- The need for a policy with high expectations that leads to good faith beliefs about and might be supported by proper procedures.
- Exists the sense of belonging to the safety standards with its extensive involvement in the implementation of policies and training for safety
- Establish goals for safety achievements and periodically measure the comparisons with realistic goals.
- Good safety behaviors should be a prerequisite for job extensions and annual assessments
- The information management system includes the security evaluation of commercial information

Through this method an organisation can move towards a more efficient culture of security, raising and enhancing the organisational culture's security climate.

III. RESEARCH METHODOLOGY

Research design is a very important aspect of planning. It is one of the data processing procedures compiled based on specific and systematic planning involving a network of variables in the study [42].

In this research, it is conducted into three parts, which are part A is for the respondent's personal information, part B is a survey using questionnaires that is an open question with the respondents from the students and lecturers or instructors. The sample of this research consists of students and instructors from several institutions of Technical and Vocational Education such as Vocational College (14), Industrial Training Institute (10), National Youth Skills Institute (10) and Mara Skills Institute (10).

The population is 772 respondents involved in this study. They are chosen by random sampling according to the group based on their gender and areas of specialization such as mechanical engineering students, civil engineering, electronic and electrical engineering.

In this research, the instrument of study is divided into two parts, part A is the section to obtain information relating to the respondent, meanwhile part B to find the factors affecting practices, implementation, compliance, and culture of occupational safety and health.

According to McCrudden et al [43], the reliability of Cronbach Alpha is a measure for the internal consistency of the constructs. An alpha greater than 0.60 is used as an instrument's reliability index [43]. For Sekaran & Bougie [44], the reliability values that are less than 0.60 were considered low and unacceptable, the Alpha values between 0.60 and 0.80 were acceptable while Cronbach Alpha values above 0.80 were considered good. Table 5 shows the value of Cronbach's Alpha for the practice, implementation, compliance and safety culture.

Table 5: The variable of value Cronbach Alpha

Variable	No. of item	Cronbach Alpha

Practice	10	0.79
Implementation	10	0.75
Compliance	10	0.86
Culture	23	0.84

Referring to Table 5, the overall Cronbach Alpha value of the variables exceeds the value of 0.70. This shows the items that measure of the variables of practice, implementation, compliance, and culture are suitable to be adapted. This finding indicates that the instrument used to have good reliability.

This study involve a total number of 772 respondents consists of students and lecturers from four technical institutes in Malaysia. Male respondents are 500 (64.8%) and female respondents are 272 (35.2%). Thus, the number of students and lecturers shows similar composition which are 612 students (79.3%) and 160 lecturers (20.7%).

There are three categories of the age of the respondents are from 17 to 26 (66.1%), 27 to 34 years (6.1%) and 35 to 55 years (27.8%). The respondents of the four technical institutions involved in this study which are 277 from vocational college (35.9%) and the other is 101 respondents respectively from Mara Skills Institute (13.9%), Industrial Training Institute (29.7%) and National Youth Skills Institute (21.4%).

The composition of the respondents based on the academic field showed a total number of 331 people from Mechanical Engineering (41.5%), 169 people from Civil Engineering (18.3%) and 283 people from Electronic and Electrical Engineering. Finally, the academic background of the respondents with the diploma qualification is 154 people (19.9%) Bachelor's Degree of 93 people (12.0%) and only 15 respondents had Master's Degree (1.9%).

Table 6: Level of Practice, Implementation, Compliance and Culture

Variables		Level	Percentage
Occupational safety and health practices,	4.63	High	100
Implementation of occupational safety and health,	4.59	High	98.3
Compliance of occupational safety and health,	4.61	High	98.4
Culture of occupational safety and health.	4.61	High	100

IV. DESCRIPTIVE INFORMATION OF RESEARCH VARIABLE.

This study focuses on a dependent variable which is the practices of occupational safety and health at the Institute of Technical and Vocational Education in Malaysia and three independent variables which are the implementation, compliance, and culture of occupational safety and health. Table 7 indicates the mean value and standard deviation of all four variables.

Table 7: The Value of Mean and Standard Deviation of Practice, Implementation Compliance and Culture of Safety.

	Mean	Standard Deviation
Occupational safety and health practices,	4.63	0.15
Implementation of occupational safety and health,	4.59	0.23
Compliance of occupational safety and health,	4.61	0.25
Culture of occupational safety and health.	4.61	0.15

The results of analysis of the lecturers and students in technical institutions, the mean values and standard deviation of the four variables recorded as follows: Practice (mean=4.63, standard deviation=0.15), Implementation (mean=4.59, standard deviation=0.23), compliance (mean=4.61, standard deviation=0.25) and culture (mean=4.61, standard deviation=0.15). This findings shows the feedback of respondent of the variables are positive in terms of practice,

implementation, compliance and culture.

V. RESEARCH FINDINGS.

FINDINGS OF RESEARCH QUESTION OF SAFETY PRACTICE LEVEL

The first research question is the level of safety practice of occupational safety and health practice at the Institute of Technical and Vocational Education in Malaysia. It is categorised into three levels which are low, medium, and high. Table 6 shows the frequency values and percentage of safety practice level.

Overall, all respondents from the technical and vocational institutions (100%) adapted the safety practice at a high level. This finding shows that all respondents have actively implemented the level of occupational safety and health practices.

FINDINGS OF RESEARCH QUESTION OF SAFETY IMPLEMENTATION LEVEL

The second research question focuses on the level of safety implementation based on three levels which are low, medium and high. Table 6 shows the frequency values and percentage of safety implementation levels.

For the level of safety implementation in the technical and vocational institutions, the research findings show a total of 759 respondents (98.3%) adapted it at a high level and only 13 respondents (1.7%) implement it at a medium level. This means that most of the lecturers express the implementation of safety as important or priority to avoid any risks and accidents from occurring at their respective Institute of Technical and Vocational Education.

FINDINGS OF RESEARCH QUESTION OF SAFETY COMPLIANCE LEVEL

The third research question focuses on the level of compliance in occupational safety and health at the Institute of Technical and Vocational Education in Malaysia that refers to three levels which are high, medium and low. Table 6 shows the frequency values and percentage of safety compliance levels.

The result of the descriptive analysis found that safety compliance is at high and medium levels. A total of 760 respondents (98.4%) agree that safety compliance is at a high level and 12 respondents (1.6%) expressing safety compliance is at a medium level. This illustrates that almost all students and lecturers agree the compliance of occupational safety and health practices are important to be adhered to and practiced by every student and lecturer.

FINDINGS OF RESEARCH QUESTION OF SAFETY CULTURE LEVEL

The fourth research question is the level of the culture of occupational safety and health at the Institute of Technical and Vocational Education in Malaysia. It is categorised into three levels which are low, medium and high level. Table 6 shows the frequency values and percentage of safety culture levels. Overall, all respondents in technical institutions (100%) adapted a high level of safety culture. This finding indicates that all respondents acknowledged that they are implemented safety culture when performing daily tasks in workshops and workplaces.

VI. CONCLUSION & RECOMMENDATIONS

The findings of the research show that overall average of respondents had practiced the safety practices in the workshops as prescribed by the institutions, however there are some students ignoring the safety practices of the disregard prohibition. This will lead to accidents and hazards, therefore to reduce accidents tight monitoring from the teachers and lecturers during practical work and focusing proper work practices are acquired.

Based on the findings of the safety practice level, the result shows that almost all the Institute of Technical and

Vocational Education in Malaysia obey the occupational safety and health practices (OSHA). Whereas this practice works with management of the institutions to manage the risk of hazards that can occur in the place of learning and working. This practice also manages for students or workers to make an early preparation if any unexpected accident happens that can threaten their safety and health. The 772 respondents agree that the level of practice safety should be given a lot of attention so that all graduates from the Technical Institute will be able to create a safety culture in the industry.

The establishment of Occupational Safety and Health Act 1994 (Act 514) that has been enforced since 1994, has help the Institute of Technical Education to focus towards the adaptation of occupational safety and health management system. It also provides a legal framework to nurture, stimulate and promote high safety standards at the workplace by putting those responsibilities to specific experts involved in the field of industry.

The approach and commitment of leaders from organisation management can be fully implemented and successful if they agree to provide a safe and healthy working environment. According to Zaira & Hadikusumo [45], the implementation of poor security programs and policies can cause accidents in the workplace. According to Section 16 of the Occupational Safety and Health Act 1994, every workplace or institute of Technical Education must provide and review the written statement of policies with the organisation about the safety and health matters with students and employees thus reupdating the policies and notifying students or employees about the existence or changes occur. As a result, the professionals of modern safety and health must be able to explain the leadership commitment with confidence. For example, the importance of commitments are to manage occupational safety and health activities and management efficiency to provide a safe environment for every employee under their responsibilities.

This research illustrates the role of occupational safety and health practices to be practiced at all Institute of Vocational and Technical education in this country.

- The existence of the practice of Occupational Safety and Health (OSHA) will indirectly build a new culture in an organisation. This is based on the following paragraph:

  "...the government is very conscious to the safety, health and welfare of the employees. The statistics of accidents in the construction sector is at a high level, especially the fatal accident, which is very worrying the government. There are many people will be involved directly and indirectly when an accident occurs. The victim's family will lose their loved ones and their source of income. On behalf of the contractors, they will lose their trained workers and have to support the high costs of the interrupted project, the depleted of workers' moral and the increment of medical costs and insurance premiums. In addition, they have to face with the authorities, for example, DOSH, if they found out to violate legal provisions under *Akta Keselamatan dan Kesihatan Pekerjaan 1994* and *Akta Kilang dan Jentera 1967*." [46].

- Safety culture related to attitudes, behaviours, systems and environmental factors that promote effective safety and health management. An organisation can be categorised as a good or negative safety culture based on the effectiveness level in risk safety management strategies.

- Safety culture is a good culture that can be implemented in the workplace, it helps to encourage employee's awareness towards safety practices. It is also a norm thing to become a specific set of, beliefs and holdings, rules, attitudes and practices in the organisation. It is a step to adapt to safety culture including appreciation,

management roles, and policies. It is also defined as a set of trust, attitude and social-technical practices at a minimum level that is disclosed to the individuals, both within and outside the organisation. The disclosure also takes into account the condition related to danger or accidents.

A few recommendations can be considered by all parties or organisations to develop a culture of safety in a workplace or organisation based on the following:

- Increase the training programs for all employees and students involved in the construction and manufacturing industry. From this research found out that education and training are important to raise the level of awareness of workers towards safety and health.,
- Implement a safety culture development system that enhance continuous safety behaviour practices.,
- Organise a lot of campaign for awareness on safety.,
- Apply the Merit system to the employees or students at the Institute of Technical and Vocational Education,
- Coordinate periodic monitoring systems as well as monitoring in the implementation of systems and safety standards,
- Focus on the increment of the sensitivity of students or workers to safety and health by implementing an incentive of a programme that can motivate employees in an organisation.

In addition, organisations need to provide a clear policy of occupational safety to prevent accidents by providing training in order to enhance the understanding and awareness of occupational safety and to adapt the environment of a safe working culture at work. The important aspect of training to the employees are occupational safety and health training.

Moreover, the employees should be given education and training on safety and health on the elements to nurture a safe and healthy working culture. By providing effective education and safety training, employees will learn how to control it and avoid accidents. Therefore, occupational safety guarantee at work should be given full attention because the accident in the workplace will affect the image and reputation. A safe work culture should be practiced at work to achieve a quality and safe working life and reduce the risk of accidents at the workplace.

REFERENCES

[1] Meng, C. C., & Idris, N. (2015). Form Four Science Students' Perceptions of the Quality of Learning Experiences Provided by Assessments in STEM Related Subjects. Asian Journal of Assessment in Teaching and Learning, 5, 50-56.

[2] Atil, A., Jeffree, M. S., Rahim, S. A., Sharizman, S., Hassan, M. R., Lukman, K. A., & Ahmed, K. (2020). Occupational Determinants of Leptospirosis among Urban Service Workers. International Journal of Environmental Research and Public Health, 17(2), 427. Awang Lukman & Shamsudin. (2019);

[3] Tumari, M. Z. M., Saat, S., Johal, M. S., Bahari, M. F., & Ahmad, M. A. (2019). Single Input Fuzzy Logic Controller for Liquid Slosh Suppression. International Journal of Electrical Engineering and Applied Sciences (IJEEAS), 2(1), 45-52.

[4] Avent-Holt, D., Henriksen, L. F., Hägglund, A. E., Jung, J., Kodama, N., Melzer, S. M., & Tomaskovic-Devey, D. (2019). Occupations, workplaces or jobs?: An exploration of stratification contexts using administrative data. Research in Social Stratification and Mobility, 100456.

[5] Makhtar, N. K., Parasuraman, B., Zakaria, M. N., Ismail, A. R., Husna, N., & Hassan, C. (2018). Research Framework for Safety Culture in Malaysian Education Sector: Moderating Effect of Safety Knowledge. International Journal of Engineering & Technology, 7(4.22), 146-149.

[6] Arifin, K., Abudin, R., & Razman, M. R. (2019). Penilaian iklim keselamatan persekitaran kerja terhadap

komuniti kakitangan kerajaan di Putrajaya. (Work environment safety climate evaluation of government staff community at Putrajaya). Geografia-Malaysian Journal of Society and Space, 15(4).

[7] Akta Keselamatan dan kesihatan Pekerjaan 1994 (Akta 514). (OSHA, 1994).

[8] Nawi, M.N.M., Azman, M.N.A., Baluch, N., Kamar, K.A.M., Abd Hamid, D.Z. (2015). Study on the use of industrialised building system in Malaysian private construction projects. ARPN Journal of Engineering and Applied Sciences, 10 (17), 7368-7374.

[9] DOSH (2019) Department of Occupational Safety and Health.

[10] International Labour Office (ILO). 2018. Care jobs and the care economy: A challenge and an opportunity for the future of decent work (Geneva).

[11] Woolfson, C., & Beck, M. (Eds.). (2019). Corporate social responsibility failures in the oil industry. Routledge.

[12] Wagiran, Retnowati, E., & Azman, M. N. A. (2020). When Vocational Teacher Improve Their TPACK Competencies Through Lesson Study. International Journal of Psychosocial Rehabilitation, 24 (4), 1475- 7192.

[13] Amin, M. A. M., Abas, N. H., Azman, A. H., & Mohamad, S. K. (2019). Identification of the Activity-based Hazards/risks Involved in the IBS Construction Process: Case Study of Project That Uses Prefabricated Steel Framing System and Prefabricated Timber Framing System. In IOP Conference Series: Materials Science and Engineering (Vol. 601, No. 1, p. 012032). IOP Publishing.

[14] Rasih, S. R. A. (2019).Pemulihan klien dalam konteks kerja sosial: pengalaman penggunaan teknologi di pusat rehablitias Tun Abdul Razak, Bandar Teknologi Hijau Melaka. Human Sustainability Procedia, 86-98.

[15] Department of Occupational Safety and Health (2000). Malaysia: Ministry of Human Resource.

[16] Samsuddin, S., & Ismail, N. (2019). Markov Chain Model and Stationary Test: A Case Study on Malaysia Social Security (SOCSO). Sains Malaysiana, 48(3), 697-701.

[17] Vaiagae, B. W. (2020). Workplace Safety Strategies Used by Managers to Reduce Workplace Accidents.

[18] Perai, P. S. (2017). Conference proceedings:[electronic resource]/telecommunication technology in education and innovation: conference, competition, exhibition 2014 hold in Penang. Conference, Competition, Exhibition Pulau Pinang);(2014: 9119).

[19] Trinchero, E. F. O. (2017). Workplace relationships, psychological capital, employees' performance, accreditation and safety culture: the case of healthcare professionals in Italian acute care settings. PhD thesis, Southern Cross University, Lismore, NSW.

[20] Masuin, R., Latief, Y., Zagloel, T. Y., & Sagita, L. (2018, June). Integrated management system to achieve sustainable construction-A conceptual framework. In AIP Conference Proceedings (Vol. 1977, No. 1, p. 040013). AIP Publishing LLC.

[21] Leaviss, J., Gibb, A. G., & Bust, P. D. (2017, June). Ageing workforce in construction–equipment use and the prevention of early retirement. In Contemporary Ergonomics 2008: Proceedings of the International Conference on Contemporary Ergonomics (CE2008), 1-3 April 2008, Nottingham, UK (p. 221). CRC Press.

[22] Carthey, J. (2018). Improving Safety Culture in Healthcare Organisations. In Patient Safety Culture (pp. 167-186). CRC Press.

[23] Alhejji, H., Garavan, T., Carbery, R., O'Brien, F., & McGuire, D. (2016). Diversity training programme outcomes: A systematic review. Human Resource Development Quarterly, 27(1), 95-149.

[24] Thibault, T., Gulseren, D. B., & Kelloway, E. K. (2019). The benefits of transformational leadership and transformational leadership training on health and safety outcomes. In Increasing Occupational Health and Safety in Workplaces. Edward Elgar Publishing.

[25] Eldejany, R. (2019). The Relationship between Safety Management Systems, Safety Performance and Customer Satisfaction in the Australian Construction Industry: A Quantitative Research Proposal. Journal of Research in Marketing, 10(1), 766-771.

[26] Afif, M. H. (2017). Hubungan antara amalan pengurusan keselamatan dengan pematuhan keselamatan di Jabatan Pengairan dan Saliran (JPS) negeri Perak (Doctoral dissertation, Universiti Utara Malaysia).

[27] Kim, J., & Philips, P. (2010). Health insurance and worker retention in the construction industry. Journal of Labor Research, 31(1), 20-38.

[28] Newaz, M. T., Davis, P., Jefferies, M., & Pillay, M. (2019). The psychological contract: A missing link between safety climate and safety behaviour on construction sites. Safety science, 112, 9-17.

[29] Osman, N. W., & Kamis, A. (2019). Innovation leadership for sustainable organizational climate in

institution of technical and vocational education and training (TVET) in Malaysia. Asian Journal of Assessment in Teaching and Learning, 9(1), 57-64. https://doi.org/10.37134/ajatel.vol9.no1.6.2019.

[30] Fadlie, M., & Rani, A. (2016). Tahap kesedaran pekerja pembinaan terhadap keselamatan dan kesihatan pekerjaan: Kajian di tapak pembinaan SA2 Logistic Hub (Doctoral dissertation, Universiti Utara Malaysia).

[31] Johari, J., Yean, T. F., & Adnan, Z. (2017). Demystifying the Empirical Link Between Safety Climate, Safety Communication, Work Environment and Unsafe Behaviour At Work. Jurnal Pengurusan (UKM Journal of Management), 50.

[32] Huda, U. F., Sukmawati, A., & Sumertajaya, I. M. (2016). Model perilaku keselamatan kerja karyawan pada industri berisiko tinggi. The Asian Journal of Technology Management, 15(1), 51.

[33] Agustina, A., Chahyadhi, B., & Ardyanto, D. (2020), Hubungan Safety Leadership dengan Safety Performance Pada Pekerja Industri Pakan Ternak Sidoarjo. Preventia: The Indonesian Journal of Public Health, 4(2), 81-92.

[34] Jaber, M. Y. (2016). Learning curves: Theory, models, and applications. CRC Press

[35] Lee, W., Migliaccio, G. C., Lin, K. Y., & Seto, E. Y. (2020). Workforce development: understanding task-level job demands-resources, burnout, and performance in unskilled construction workers. Safety Science, 123, 104577.

[36] IAEA (International Atomic Energy Agency) 1998 Developing Safety Culture : Practical Asggestions to Assist Progress. Safety Series Report No. 11-IAEA Vienna : International Atomic Energy Agency.

[37] Rinaldi, R. P. (2016). Assessing Educators' School Safety and Security Preparedness at a New Jersey K-12 Nonpublic School. (Harvey, 2002:O'Toole, 2002)

[38] Romzaya, R. A., & Azizanb, N. H. (2019). Accidents and diseases in selected secondary schools in sabak bernam Selangor. In proceeding of 5th (p. 172).

[39] Turner, D. C. (2017). A review of over three decades of research on cat-human and human-cat interactions and relationships. Behavioural processes, 141, 297-304.

[40] Peterson, S. A. (2019). Advances in Information Technology Integrated with Strategic Direction'. Advances in the Technology of Managing People: Contemporary Issues in Business (The Changing Context of Managing People). Emerald Publishing Limited, 13-24

[41] Schlagwein, D., Conboy, K., Feller, J., Leimeister, J. M., & Morgan, L. (2017). "Openness" with and without Information Technology: a framework and a brief history.

[42] Johnson, D. M., & Shoulders, C. W. (2019). Beyond Magic Words and Symbols: Rethinking Common Practices in Quantitative Research. Journal of Agricultural Education, 60(3). Kerlinger (1986).

[43] McCrudden, M. T., Marchand, G., & Schutz, P. (2019). Mixed methods in educational psychology inquiry. Creswell (2010).

[44] Sekaran, U., & Bougie, R. (2016). Research methods for business: A skill building approach. John Wiley & Sons.

[45] Zaira, M. M., & Hadikusumo, B. H. (2017). Structural equation model of integrated safety intervention practices affecting the safety behaviour of workers in the construction industry. Safety science, 98, 124-135.

[46] Shafii, H. B., Bin-Shahna, E. A., Meryam, S., & Yassin, A. M. (2019). Study On Promote Occupational Safety And Health Practices In Construction Projects. Journal of Technology Management and Business, 6(3).