

OPERATIVE IMMERSION TOWARDS SAFETY MANAGEMENT: A CASE STUDY AT OFFSHORE

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Abstract

Safety in the workplace has long been a top concern for every industry. Zero accident ultimately a dream of safety professionals. Data obtained from SOCSO Annual Report 2016, showed that the total of 35 304 industrial accidents reported increased by 3.26% from the previous year. Hence, this study was undertaken to examine the level of operative immersion towards safety management covering three main aspects, namely the employees' perception, employees' knowledge, and employees' motivation. A set of questionnaires was distributed to 82 respondents who were offshore workers in one of the offshore service providers to the oil and gas industry in Malaysia. Data was analysed using reliability, descriptive statistics, regression and inferential statistical data via Statistical Package for Social Science (SPSS) version 21.0. Overall, the findings showed that the level of understudy was positive (moderate). Empirical test showed that all three variables had significant relationship and employee's knowledge was the most significant factor that influenced safety management. Based on the findings obtained, it is hoped that the study will benefit all parties involved in enhancing offshore security practices from time to time and some suggestions have been forwarded to assist further research in the future. Consequently, this study may help employer be more proactive in ensuring the employee involvement in safety and health management at the workplace.

Keywords: Safety Management, Offshore, Perception, Knowledge, Motivation

1.0 INTRODUCTION

Ensuring safety in offshore platforms is a risky job and safety performance across industries is complicated and difficult to achieve. It requires specialized operating procedures and policies to be applied in the field (Faridahwati & A. Khair, 2011). Offshore activities such as oil and gas are industries that can be classified into activities that are often vulnerable to occupational accidents as rigs are located far away from land and hospitals. Therefore, safety management plays an important role in developing safety climate in organizations. Managers are becoming more aware on this issue and begin to perceive it as crucial in ensuring the survival of the organization. However, to make safety management work, commitment from everyone in the organization is needed. In fact, effective security management needs to be implemented by all employers to ensure the safety of their employees, civilians and the environment.

Furthermore, (Tharaldsen, 2009) claimed jobs related to offshore activities are exposed to risks and hazards involving fires as a result of oil production comprising flammable substances. Hence, the distance of contact with the hospital also makes the situation more dangerous. Accidental deaths, fires, explosives and injuries are often used as indicators and measurements of occupational safety aspects (Vinnem, 2010) and (Reiman and Pietikainen, 2012). Consequently, offshore surroundings have been identified as a dangerous working and living conditions. Hystad et al., (2014) states that with today's technological diversity, workers in critical safety organizations such as the oil and gas industry operate in hazardous situations either due to the environment or from human error (Halim et al., 2018). The establishment of such working conditions results in higher possibilities for employees to get stressed (Ndife, 2014), accidents, injuries, and various unwanted health outcomes as well as physical strains such as noise (Jiang et al., 2010).

In this study, operative refers to a skilled employee, especially one working offshore, while immersion pertains to employee involvement. Accordingly, operative immersion (employee involvement) towards safety management, in this regard concerns on employee's perception, knowledge, and motivation to continuously practice proper safety in their work procedure. A successful safety management leads to zero accident statistics, higher profit and lower expenditure on injuries. This indicates a good safety performance applied by the industry (Mearns et al., 2003).

Occupational safety and health management is used as one of the key elements to ensure a safe and conducive workplace to protect the human capital. Therefore, its implementation is vital to the employees and should not be treated as just a policy that is not fully executed. This is study undertaken due to the increasing number of accidents at workplace and the dangers faced by offshore workers which has caused many lives. According to (Faraouk, 2017), in Malaysia, the incidence of occupation-related deaths and injuries is highest in the manufacturing area, compared with its other economic sectors. According to a recent government report (The Department of Occupational Safety and Health (DOSH), 2018), a lack of security practise contributes to the serious injury as reported in local newspapers such as the incident where oil and gas support vessels burned at sea outside Kuala Baram. Besides, SOCSO database also reports that industrial accidents have increased from the previous year. Investigation report by SOCSO is updated and downloaded to the system to assist in the provision of a systematic database to analyse the cause of recent offshore events. Previously, most of these incidents have resulted in the destruction of assets and human life. Therefore, a comprehensive scientific study is recommended by researchers (Halim et al., 2018) to study the environment of offshore security, especially in Malaysia.

Research on offshore security should be taken seriously because employees are exposed to hazard risks involving their lives. While the study of these issues is limited to a particular need, it is a necessity to ensure that companies are able to provide the security requirements for every aspect in the field of duty. In addition, the real situation in the workplace is not taken into account by the employer but only concerns the need to protect the workers and surrounding areas. Therefore, in achieving a good safety management in an organization employee involvement is the most important indicator. Even if there is the best safety management program organized by employer, failure to get employees involved will make that system meaningless and definitely will cost the company in the future.

2.0 SAFETY MANAGEMENT

A security management system is a planned mechanism in a specific organization for risk control that is capable of ensuring the safety and health of workers. Hence, the integration within the system along with company procedures can help to ensure consistent internal harmony. Major industrial accidents abroad are caused by overlooking safety practices and cultures that have led to less capability to grow business. Analysis of multiple recurrent industrial accidents has identified that some of the causes are the lack of an effective early warning signal, worker, instrument, and operative procedures. This opinion is supported by

(Okoh and Haugen, 2014), and (Qabazard and Srikanth, 2011). Human error is often associated with the main cause of accidental and occupational injuries, as cited by (Subramaniam et al., 2016), and it is proposed that an individual approach to campaigning be conducted to control losses as well as to reduce unnecessary incidents. The main purpose of this campaign is to ensure that every employee must work safely in achieving good work performance by complying with safety standards. In this study, safety management is defined as providing a safe operational atmosphere which is free from any danger of incidences that can cause psychological and bodily harm. This is related to the operations performed in laboratories that emphasize the mastery of knowledge, practice and attitude.

2.1 Employee's perception

A study conducted by (Clarke, 2006) found that the condition of a work environment is important for both accident and harmful behaviour. The findings also show that employees' awareness of the working environs are influenced by firm security practices as it affects individuals. Hence, this statement is confirmed by findings showing the perception of risk level as well as the effectiveness of security officers and committees have a substantial impact on safety routine at work.

Thus, perception also plays an important role in avoiding any dangers while conducting offshore jobs. Workers who have good attitudes will always comply with safety rules at work. Besides they can form a positive work culture and always inculcate attitudes that emphasize safety in any work done. The factors that lead to the occurrence of an accident and in matters pertaining to security is due to the attitude of the employee.

2.2 Employee's knowledge

The research findings conducted by Langford et. al (2000), found that effective company safety management can lead to positive attitudes and good perceptions of occupational safety. These factors lead to understanding the difficulties faced by employers to implement good safety practices in their employees. At the organizational level, widespread knowledge is a key requirement in ensuring effective safety management techniques among employees. With this, a positive attitude can be highlighted by managing and monitoring safety practices equipment supervision in stimulating good drills at the job site.

In addition, different studies have been done on knowledge management. Knowledge is seen as one of the important issues in maintaining and managing the resources of knowledge as well as human capital that will have a positive impact on the improvement of the organization's superiority and performance. So, this survey is through job safety and security management to preserve the resources from any problems that cause the company's performance to be affected. Furthermore, knowledge is an important factor in doing something. By having knowledge, the work done will run smoothly. The knowledge aspect of offshore security practices is important to avoid accidents. This aspect is able to determine whether the level of employee's awareness is low, medium, or high. Practicing knowledge that has been acquired is more important when doing work. According to (Line and Albrechtsen, 2016) each employee will be more sensitive to safety issues and health and can increase the level of security as well health through proper and safe procedures. Therefore, rudimentary knowledge on safety management at the workplace must be present in everyone involved including employee, employer and also the public.

2.3 Employee's Motivation

The concept of commitment and motivation should be can be differentiated or more easily explained as follows; commitment is a component of motivation. It requires a better understanding of both the process itself and the workplace behaviour. For instance, commitments frequently consist of psychological affections to social groups, combining commitment as a free motivational aspect which should justify a better understanding of behaviours that have wider social implications (Zimmermann and Ravishankar, 2016). (Met and Ali, 2014). suggests that there are relations between attitudes and job motivation; particularly, this situation will give implications to the commitment of employee towards safety management. This condition suggests that the higher the job motivation in an organization, the better the commitment of its employee. Thus, employee's commitment needs to be critically considered as an important factor in achieving successful safety management practice in an organization.

3.0 METHODOLOGY

The research framework is based on a study by (Mearns et. al., 2003), which explained the dependent variable (safety management) and the dependent variables (employees' perception, employees' knowledge, and employees' motivation). Besides, the study was undertaken to examine the level of operative immersion towards safety management among employees offshore. The main instrument used in this study was a questionnaire with a 5-point Likert scale that was distributed to 82 offshore workers who were the respondents. This questionnaire comprised statements pertaining to the variables and was earlier tested and modifies based on feedback. Changes were made to this questionnaire to make sure the questions are clearer and easier to understand. The data was analysed using descriptive analysis, reliability, means, Pearson Correlation test and regression analysis. Cronbach alpha reliability level for the instrument was mainly 0.8 and above and used to measure the feedback from respondents.

4.0 FINDINGS

Offshore field involved activities sub contracted to other companies according to their specialties. Based on descriptive study, 62.2% of the respondents worked with contractor company compared to 37.8% work with operating companies. Most of them work in management area, followed by technician, deck crew and marine crew of main work area. They have experience working offshore between 1 - 5 years. It can be summarized that 51.2% of the total respondents has never been appointed as safety representatives and they will be considered as major contributors for the study.

Table 1 Reliability Test

All Variables(N=82)	Cronbach's Alpha	No of Items	Strength of Association
Safety Management	.818	8	Very Good
Employees' Perception	.757	6	Good
Employees' Knowledge	.850	6	Very Good
Employees' Motivation	.855	6	Very Good

In reliability analysis, Cronbach alpha for 26 items shows higher internal consistency described the reliability of this study. In descriptive analysis, the elements of employee perception are seen as high with 4.0854 mean and standard deviation 0.47736. While the employees' knowledge is considered low with a mean score of 3.9858 and standard deviation 0.41837. Average operating conduction on security management is between 3.9858 and 4.0854, thus showing a "neutral" mixture to "agree". The results show that there are still some rooms for improvement to be made to increase the level of operative immersion with regard to safety management which is high as most of the mean is close to 4. Table 2 shows a positive correlation between security management and three elements of employee engagement, ($p < 0.05$, where p is in the range of 0.01 and 0.00) with correlation coefficient (r) between 0.355 to 0.589. Lower to moderate correlations between operative's immersion shows that the construction is quite reliable as illustrated by the findings of this study. The results of the study also suggest that the three components of the operative's immersion communicate positively with each other. Therefore, it is clear that dependent variable (safety management) has been positively affected by all three independent variables.

Table 2 Summary of Pearson Correlation Result

Variables	r-value	Pearson Correlation	P value	Significance (2 - tailed)
Employees' perception	0.355	Low	0.01	Significance
Employees' motivation	0.459	Moderate	0.00	Significance
Employees' knowledge	0.589	Moderate	0.00	Significance

Table 3 Summary of regression of all variables

R	R Square	Adjusted R Square	Std. Error of the Estimate
.612 ^a	.375	.351	.351

Table 4 Regression for All Variables

Variables	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	.853	.504		1.692	.095
Employees' perception	.177	.113	.155	1.562	.122
Employees' knowledge	.553	.136	.486	4.073	.000
Employees' motivation	.077	.129	.074	.598	.552

Table 3: Regression analysis indicates the value of R Square is .375; these variables reveals 37.5 per cent of variance in safety management. An examination of the T-values in Table 4; indicates that three variables contribute to the prediction of employee involvement in safety management. Employees' knowledge makes the largest and strongest unique contribution (beta = .486). So, in order to develop a good safety management offshore the most important variable to improve is employees' knowledge.

The findings of this study have contributed greatly to practical and study aspects. First in practice, this study has shown that most of the respondents would meet their safety representatives rather than go to their health and safety department, supervisor or their employer. Security representatives are closest to the employees as they are specially appointed to allow easy access and availability to the scope of work. Moreover, security representatives should be experts on security issues.

Second, most researchers also find that employees want to focus on safety but have no initiative to practice safety at work. This happens as most employers have educated their employees well in regard to rules and regulation or any other safety matter before sending them to work offshore.

Third, most of the respondents perceived their involvement in safety management as fairly well involved. As concern for this finding, operative immersion towards safety management need to be improved in the future. Thus, active involvement should be encouraged among offshore workers as they have high risk jobs.

Furthermore, the researcher also finds that most of them have a good motivation as they are initiatively willing to obtain safety information and they are expected to be educated and know the good and bad practice in their work.

5.0 CONCLUSION FUTURE WORKS

The importance of safety in high-risk workplaces should be given more attention. Evidently, the safety of offshore jobs depends on the majority of workers on the platform. Their basic knowledge of safety is very important in ensuring safe working conditions as well as. However, the maintenance and training of essential elements that play a role in achieving offshore safety.

Through the data obtained from this study, it can be concluded that proactive actions must be taken to address safety issues in the offshore and oil and gas industries. All parties need to play a role and give full support by practicing appropriate and safe work attitudes to minimize the proportion of offshore emergency cases. The supervisors should encourage the staff to obey safety rules. In addition, the management must provide proper safety guidelines and conducive working environments.

The study also highlight the intrusion of operations related to offshore security management. This involves the need for business owners to provide essential assistance such as providing security training, so that they can be a good organizational citizen when dealing with occupational safety aspects. Conducive environment includes the setting up of conducive work area as well as, tools and equipment needed by the employees in handling their job. These support systems should be available and ready for the employees to perform their role in the change process. Lack in these will result in inability to perform the task in the most efficient manner. In fact, once they realise how their attitudes and behaviours affect workplace safety, they can use this knowledge to educate and persuade their co-workers to work safely by following safety procedures, rules and regulations. Based on the findings obtained, it is hoped that it will benefit all parties involved in

enhancing offshore security practices from time to time and some suggestions have been forwarded to assist further research in the future.

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